AGU25

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The deadline to submit abstract submissions for AGU25 has passed. Abstract acceptance notifications will be emailed, and the final scientific program will be published in early October. Please utilize this document to view and search for sessions and submitted abstracts. Please refer to the Annual Meeting website for updated information.

Please email the Scientific program Team with any questions about abstracts or the scientific program.

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1893872 *Mapping Southeast Asian Climate Research Production: A Bibliometric Perspective:* **M J Custado**, E H H G Cooperdock

1900085 *Empowering women in science: the transformative force of OWSD Honduras:* **D I Avila Velasquez**, A Rivera, Y M Canales - Ochoa, M J Morales Gámez, K A Valle, V López, Y S Castillo Rosales, R Durón, G Oyuela, L Nuñez

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(joint with SY)

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(cosponsored by NAGT: National Association of Geoscience Teachers) *(joint with C, SY)*

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1957755 *Connecting Students with Federal Agency Research: The Arizona Streamgage Catalog (AZStreamCAT) Vertically-Integrated Project (VIP):* **S Stoller**, S Booker, M Whitaker, H Godrum Sterling, C Bunch, M Chidester, C Willis-Green, R Jimenez-Wieneke, J Chidester

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1904486 *Flood Impact Analysis of Downtown Brunswick GA: An Upper Level CURE Product:* **D Elmore**, A Martin, R L McLachlan

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1844770 *Investigating the Relationship Between Macroplastic Pollution and Antimicrobial Resistant Bacteria in Soil in Hong Kong:* **Y WU**, Y Y Hui

1876629 *Investigating the Relationship Between Shrew Diversity and Climate Change in Central Texas During the Late Pleistocene:* **M van der Steur**, J Trujillo, M Lopez, J Moretti

1953181 *Lake Tahoe and San Francisco: Imaging Energy Efficiency:* **N Ginieczski**, Z Seims, L Rinzel, W Essreg, C Atkinson, F Hennessy, A Romm, A Stark

1884422 *Lead Exposure in Children During Outdoor Play in the Historically Redlined Community of West Oakland, California:* **K L Phan**, J Neiss

1928501 *Lead Exposure in Children Through Outdoor Play:* **Z Yan**, J Neiss

1884412 *Lead Ingestion In Children During Outdoor Play in the Historically Redlined Community of West Oakland, California:* **S L Phan**, J Neiss

1965814 *Leveraging Location: Maximizing Utility-Scale Solar Energy Generation in the United States through Solar Site Selector's Optimized Siting Tool:* **J Ahn**, C M Zanocco, J A Flora, T Sun

1961069 *LLM Agent Simulation of Utility-Controlled AC Programs: Evaluating Grid Benefits and Equity Impacts in New Jersey:* **A Maheshwari**, T Sun, C M Zanocco, J A Flora

1953885 *Low-Light Classification of Recyclable Waste inside Bins: A Cross-Lighting Evaluation of Convolutional Neural Network Architectures:* **S Seetharaman**, O Aydin

1884129 *Mapping the Urban Heat Island Effect in New Jersey Cities Using Satellite Data:* **A Bidwai**, A Bidwai

1920142 *Megaevents and Megawatts - How National Cultural Events Influence Household Electricity Peaks:* **V Neumann**, T Sun, J A Flora, C M Zanocco

1860099 *Modeling of Sea Surface Temperature in Boston Harbor using Multi-fidelity Gaussian Process Regression:* **A Kumar**, K Shukla

1875554 *Most Effective Methods for Monitoring Short-Term Coastal Change:* **A McRoberts**, T A Goudge, M D Nelson, J Muriel, B Bustamante, V Ortiz, D Guerra

1894496 *Muon Velocity Measurement Using Two Small Cosmic Ray Detector:* **A Sora**

1845184 *Musical Compositional Perception of Whale Songs:* **L Zhang**, J P Ryan

1955759 *National Gallery of Art and Library of Congress: Practical and Powerful Geoscience Applications:* **L Rinzel**, A Stark, A Romm, N Ginieczski, W Essreg, F Hennessy, M Smith, C Atkinson

1853256 *Native Grass Resilience in Thin Soils: A Sustainable Strategy for Drought-Tolerant Urban Landscapes:* **G Sooriarachchi**, D Sooriarachchi

1906732 *Negative effects of climate change and fishing activities modeled on Alaskan seabird populations (2002-2011):* **A Patangi**

1934621 *Observing Anthropogenic Change Over Time Using Astronaut Photography:* **P Gupta**, D Gonzalez, C Manning, L Busby, K Chapagain, E Ehrenkranz

1937737 *Operation DELTA: A Lunar Base Initiative Advancing Habitation and Scientific Pathways from Moon to Mars:* **Y Lee**, N Partal, S Burrell, M O'Connor, A Rusin, V Erram, P Ashby, B Busby, E Lewis

1970853 *Optimizing Potable Reuse Systems to Combat Water Scarcity:* **N Dias**, B Najm

1885800 *Planetary Dynamics of Systems with Nonuniform Period Ratios:* **A Mehrotra**, J J Lissauer, K Ohrtman, A W Smith, B Outland

1965376 *Predictive Modeling of Flash Floods: Investigating Hydrology and Land Cover Dynamics through Remote Sensing Data:* **K Patel**, P Nair, S Koppu, K Srinivas, A Bhattacharjee, A Venishetty, S Taylor, S Ali, A Roy Choudhury, H Galvan

1930764 *Preliminary Quantification of deforestation and land degradation of Mongolia Plateau using high-resolution satellite imagery:* **D Li**, K Li, L Liu

1887409 *Radiometric Dating and Geochemistry to Explore the Possibility of Pannotia:* **S Mickler**, S Burhan, K Menchaca, A Rodriguez

1985891 *Reaction-Diffusion PDE Parameters Inference for Brain Oxygen Transport with Multiple Vascular Sources:* **D Kirsch**

1982617 *Refining Recent California Wildfire Records by Linking High-Frequency GOES Fire Detections to CAL FIRE Incident Records, using the Regionmask Python Library:* **S Chibber**, Q Kang

1958239 *Remote Sensing of Energy Efficiency in Cities Globally. Improving Techniques:* **Z Seims**, N Ginieczski, A Romm, L Rinzel, W Essreg, F Hennessy, C Atkinson, C Adesnik-Chu

1978758 *Repurposing Plastic Waste into Scalable Solutions for Environmental Monitoring and Restoration:* **F Rehman**, D K J Shelton, R Ruiz, D K J Shelton, A Simon, C Caraway, A Domondon, C Shanklin

1901308 *Satellite Analysis and Visualization of Atmospheric Pollution over Cuba during the October 2024 Blackout:* **A Wu**, H Chong, G Gonzalez Abad

1895743 *Satellite Reentries: A Global Analysis of Their Impacts across Earth Systems and the Atmosphere:* **D Sierra Sanchez**, E Abello Urrea, M Morel

1888008 *Sea Surface Salinity Variations in Coastal Southern California:* **J Halpern**, R E Flick

1881355 *Shaking Up Seismology: Exploring Earthquake Precursors Through Energy Controlled Rotary Shear (E.C.o.R.) Experiments:* **Z Sanchez**

1889017 *Sladflksdaflkfsa:* **S Esguerra**

1935767 *SmokeLLM: Physics-Grounded, Real-Time Risk Assessment and Community-Accessible Decision Support for Prescribed Burns:* **S Samy**, J Yu

1970583 *Southern Right Whale Acoustic Behavior in South Africa as Detected by Multi-sensor Tags:* **H Francis**, M Savoca, P Segre, S Kahane-Rapport, A Blawas, J Barkowski, D Cade, E Vermeulen, J A Goldbogen

1957642 *STEM Learning: The Giant Difference Hands-on Experiences and Starting Young Makes:* **F Hennessy**, W Essreg, L Rinzel, A Stark, A Romm, C Atkinson, M Smith, N Ginieczski, C Adesnik-Chu

1886949 *Stockbridge InvenTeam Automated Artificial Intelligence Asparagus Selector:* **W Gancer**, O House, R Richards

1888057 *Students Join with STEM Professionals to Advance Energy Efficiency in Washington, DC Schools. Cutting Waste, Lowering Carbon Footprints. Gaining STEM-Career Experience:* **C Atkinson**, M Smith, L Rinzel, W Essreg, F Hennessy, A Stark, C Adesnik-Chu

1937915 *Studying The Effects of Environmental Stressors on Crabs Through Geologic Time May Help Predict Climate Change's Impact on Future Marine Organism Traits:* **A Helweg**, M Nikolic

1844870 *Suction-Based ROV Attachment for Extraction of Sediment Samples in an Obstructed Underwater Environment:* **X Z Li**, X P Chen

1882152 *Sustainable Solutions: Evaluating the Impact of Recycled Glass on Plant Growth and Its Potential Role in Coastal Erosion Mitigation:* **E Jackson**

1884709 *The Effect of Climate Change on Central Texas Shrew Diversity in the Pleistocene:* **J Alvarado**, T Olsson, C Matocha, J Moretti

1932049 *The Effect of Impurities on Flow Rate in The Himalayan Glaciers and Its Impact on Surrounding Communities:* **B A Keisling**, A Curi, M Pascual, O Mejia, S Curtis, A Rodriguez

1844806 *The Effect of Underwater Plates' Substrate Material on Oyster Larvae Settlement:* **W H N Ng**, B Yu

1844774 *The Humidity of Hydrogen Gas and it's Effect on Hydrogen Fuel Cells Efficiency.:* **M C P H Wong**, T H Ho

1883670 *The Influence of Temperature Rise on Reservoir Evaporation Trends Near Major Texas Cities:* **N Frost**, S Fakhreddine, H Kanth, C Crow, K Singh

1885510 *The Pursuit of Earthquake Precursors Through the Lens of ECoR (Energy Controlled Rotary Shear Apparatus):* **L Thornhill**, N Hollingsworth, G Matula-Rees, I Hurles

1961562 *Thoughts on Modernizing Indigenous Economic Models: Review and Recommendations for the Alaska Economic System under Climate Uncertainties:* **K Wu**

1947804 *Three-Dimensional Visualization of Hurricane Helene Flooding in Tampa Bay:* **B Jia**, Y Liu, H Xu

1844887 *To What Extent Does Lucky Bamboo Absorb Benzophenone in Aquatic Environments?:* **K Chan**, K F Yu

1945524 *Turning Sunlight into Foresight: AI-Enhanced Solar Mapping for Climate-Smart Energy Futures:* **S Goswami**, A Goswami

1932535 *Understanding Kelp Forest Change in Alaska: A Simple Food Web and Population Model of a Keystone Species:* **J Liu**

1969352 *Understanding the Effects of Urbanization on Plant Ecosystems in Selected Areas of Interest Using Land Cover Analysis through Remote Sensing and Ground Observations:* **V Erram**, C Quinn, Z Shamrao, A Umamageswaran, C Tagalog, A Awasthi, B Macon, J Newsome, S Humer

1965755 *Urban Revival: Analyzing Urbanization Through Changing Land Cover and Its Effects on Surrounding Communities:* **N Undrakh**, S Medikondla, S Nugehalli, O Vegesna, S Sorsa, A Finelt, G Clemons, S Pan

1894422 *Urban Tree Mapping at Multiple Spatial Scales Using YOLOv8 on Low Earth-Orbit Satellite and Aerial Imagery:* **A Chengalvala**, O Aydin

1962583 *Using a Difference-in-Differences Approach to Evaluate the Equity and Solar Adoption Impacts of California's NEM 3.0 Policy:* **A Gupta**, T Sun, C M Zanocco, J A Flora

1884317 *Using Ancient Corals to Assess Climate Simulations of El Niño Events in the Past and Future:* **D Mullins**, J W Partin, A Henry, N Arvizu Rico, R Ruiz

1960721 *Using Computer Vision to Assess Equity in California K-12 School Solar Adoption:* **E Min**, C M Zanocco, J A Flora, T Sun, R Prabha, A Huang

252707
Building Climate Literacy for Action *(joint with SY)*

Conveners: **Haley Crim**, Self Employed; **Frank Niepold**, NOAA Climate Program Office

1947939 *Leveraging Cooperative Extension to build resilience in rural agricultural communities: lessons from Extension professionals in Delaware, Maryland, and Virginia:* **J E Shortridge**, J Husch, N Arbab, J Volk, W Stout

1856797 *Title: Anticipating the Legal Landscape for Scientific Research & Communication:* **C Marchesano**

1931974 *A Community-Centric and Interdisciplinary Approach to Teaching Environmental Justice:* **M Caballero**

1897058 *A Systematic Review of Artificial Intelligence in Serious Games and Gamification for Flood Literacy:* **Q Duan**, R Quainoo, H Markin, Y Yang, Y You

1864124 *Using Observations from PACE/OCI and EMIT to Study the Western Lake Erie's Water Quality in 2024:* **Z Wang**

1858745 *Utilizing GRACE(-FO) Data to Visualize and Characterize Water Storage Trends and Variations in the 21st Century:* **T Ly**, S Bohil, C Long, S Goel, A Bhute, R Collins

1856276 *Utilizing JOVE Radio Telescopes for Analysis of Solar Emissions and Solar Flares:* **Z X Lin**, Y Cheng

1886096 *Utilizing NASA's Sentinel-1 to Detect and Map Floods in Urban and Rural Locations Across the Globe:* **S Wassef**, I Mu, S Eldeeb, K Zhang, R Puppala, L Short

1936591 *Utilizing UAVs to Monitor Coastal Change:* **A Powao**, C Morin, D Chumley, C Tapia, T A Goudge, M D Nelson

1905992 *Utilizing UAVs To Monitor Costal Change:* **C Morin**, T A Goudge, M D Nelson, D Chumley, C Tapia, A Powao

1972863 *Utilizing UAVs To Monitor Texas Coast:* **T A Goudge**, C Tapia Rodriguez, C Morin, D Chumley, A Powao

1867760 *Visualization of Geological Carbon Storage Processes Using Benchtop-Scale Models:* **A Oh**, W Nuntaprayoon, B Vega, A R Kovscek

1887546 *X-Ichos: Designing and Simulating a Low-Boom Supersonic Commercial Airliner Using CFD and Mathematical Modeling:* **C Padron**, I Masetty, D Sabapathy, C Wurmser, E Hahn, K Sato-hua, C Giesen, J Knight

1959799 *Advancing High School Youth's Energy Literacy Through Authentic Exploration of Household Energy Data.:* **S Shreewastava**, C M Zanocco, J A Flora, T Sun

1988013 *Advancing Municipal Climate Action through GHG Inventories - A Case Study of Webster Groves, Missouri:* **P Sharma**, S M Locke, S Finnegan

1975638 *Bridging Beliefs Through Climate-Health Communication: A Teaching Module in Climate Science Communication:* **S Jia**

1910237 *Climate Data Storytelling for Engagement and Action: Results from Earth Mission Control User Testing:* **R Connolly, PhD**, M Rathnasabapathy, D Newman, K Cizek

1912402 *Climate Experiences and Perspectives in South Carolina, USA, 2020 – 2025: The Impact of Self-Reported Disaster Experience on Risk Perception and Climate Change Opinions:* **L Howie**

1948093 *Engaging with Complexity in an Undergraduate Climate Science Course Through Debate:* **M Loechli**

2002644 *Exploring Climate Change Through the Boiling River:* **A A Mundo**, A Ruzo

1993979 *Fostering Interest, Awareness, and Action on Light Pollution through Planetarium Storytelling:* **H Bowers**, E Abbott, J Plummer, C Palma, T Gaudin, C Kellick, A Raytsis

2004359 *Improving Local Climate Literacy With Use of an Interactive Santa Barbara Climate Dashboard:* **O Usmani**, C Pfleger, S Stevenson

1934546 *Increasing Sea Level Rise Literacy and Awareness:* **A Rellinger**, J Griffey

1996524 *Land Based Community Storytelling to Build Power for Directly Impacted Communities in the Fight for a Livable Earth:* **R Roudebush**

1861533 *Mobilizing Minds: The Role of Interactive and Creative Climate Engagement:* **D McCullagh**

1969119 *Not just doomscrolling: Short-form video climate reporting on TikTok and Instagram:* **E S Kintisch**

252256
Climate Empowerment: Climate Education Initiatives (cosponsored by NAGT: National Association of Geoscience Teachers) *(joint with GC, SY)*

Conveners: **Gina Fiorile Desranleau**, Cooperative Institute for Research in Environmental Sciences; **Anne Gold**, Cooperative Institute for Research in Environmental Sciences (CIRES); **Patrick Chandler**, The Washed Ashore Project; **Frank Niepold**, NOAA Climate Program Office

2002003 *Expanding Student Engagement in Atmospheric Science: Graduate, Undergraduate, and High School Initiatives from the PANDORA Project:* **P Olivas**, L Antunes Alexandre, D Bidokwu

1962552 *A collaborative technical practicum for urban heat monitoring in West Africa:* **B Crawford**, C Wespestad, E Olatunji, S Muller, L Marroquin

1893554 *Air Pollution and Respiratory Health in Delhi: Geospatial Mapping of PM2.5 Exposure and Hospital Admissions:* **S Sahiba**

1973931 *Climate Education & Action: Deeply Rooted in Educational and STEM Communities; Now in Our 26th Year.:* **J D Callahan**, V Bampoh, D Henderson-Hudgins, L Rinzel, A Romm, N Ginieczski, W Essreg, C Atkinson

1898700 *Considering species range shifting in renewable energy siting: A case study with North American birds:* **U Ashraf**, A Smith, R R Hernandez, T L Morelli

1970363 *Student-Led Greenhouse Gas Inventories: Pathway to Community Climate Awareness:* **S M Locke**, P Sharma, S Finnegan

1878865 *Teaching Climate, Telling Stories: Climate Communication Through Storytelling in an Upper-Level Undergraduate Course:* **S Fathel**

2000738 *The Role of the Youth Climate Summit in Climate Literacy, Direct Action, and Belonging.:* **S Nanez-James**

1904273 *The Teaching of the Science of Climate Change: A New NSTA Position Paper:* **M E Wysession**, K Grabowski, D Haas, M A Holzer, PhD, E J Pyle, F Niepold III

1995939 *The Wéetespeme Stewardship Project: a Tribal-led project to support climate science learning grounded in traditional knowledge and land education.:* **K Eitel**, J Pinkham, T Blackeagle, S Henry

1993887 *Universal Climate: Expanding Climate Literacy Through Open Online Learning:* **C Rabe**, H Crim

1986763 *When Climate Change Hits Home: Empowering Western North Carolina Students with Cross-Curricular Weather and Climate Content:* **L E Stevens**, L Cox

1886689 *Engaging to Build Climate Resilience with the Little Traverse Bay Bands of Odawa Indians:* **D Uyeh**, J Simard, L Luo, G Akintan, P N Tan, T Bonn, D McEntyre, I Iyioke, W Singel

1998138 *Failures in Climate Change Communication Surpass Ineffectiveness: They are Moral Failures on the Part of the Communicators:* **S Kniss**, B Chambliss

1939507 *From Curriculum to Community: Implementing Climate Action in California Community Colleges:* **R P de Jesus**, H Bailey-Hofmann, T Huff, D Liebman, N Rojas-Mora, C Grandy

1995318 *Gender-Responsive Climate Learning for Pastoral Resilience: Evidence from pasture area in Inner Mongolia:* **Y Liu**

1963903 *How University Faculty Facilitated a Schoolwide Climate Education Initiative that Transformed a Highly Challenged Middle School and Galvanized a District:* **K Hayes**, K Garbesi, E Harris, M Korb

1851640 *Making Climate Science Relevant to Undergraduate Business Students:* **T S Ledley**

1910314 *Measuring Cultural Ecosystem Services Experienced by Volunteers in Coastal Maine:* **E Knudson**

2002292 *Teaching Climate Change During Turbulent Times:* **F Stoss**

1999747 *The Climate Literacy and Energy Awareness Network (CLEAN):* **A U Gold**, P Chandler, G Fiorile Desranleau, K Boyd, F Niepold III, A Christensen, S Fox, M Bruckner, T S Ledley

1958229 *Universal Climate: A Modular Model for Action-focused Teaching:* **H Crim**, C Rabe, M Schlegel, C Newton

250877
Co-Creating Science Education: Collaborative Models for Education and Outreach

Conveners: **Carolyn Ng**, ADNET Systems Inc. Lanham; **Michael Kirk**, NASA Goddard Space Flight Center; **Trena Ferrell**, NASA Goddard Space Flight Center

1950818 *From Exchange to Action: Building International Research and Science Education through Collaborative Fieldwork:* **A B Prieto**, T J Kennedy, M R L Odell, S B Ramos

1987776 *A Collaborative Model for Effectively Communicating Tidewater Glacier Processes for Broader Audiences:* **J Starkey**, A Jenson, M Truffer, J M Amundson, L Ultee

1932634 *A Collaborative Science Education Model: Unlocking the Mysteries of the Upper Atmosphere with Geospace Dynamics Constellation (GDC) Mission together with NASA's Science Activation Teams:* **B Kosar**, M Kirk, J L Swann

1940863 *A Heliophysics Journey Courtesy of NASA's Science Activation Program, NASA HEAT and Partners at the University of Alaska Fairbanks:* **L McGilvary**, M Kirk, V Daniels, C Ng, V Sellers, E B Sparrow, K Spellman

1935715 *A Modular Game-Based Learning Platform for Advancing Coastal Resilience Education in K–12 and Undergraduate Classrooms:* **M M Lewis**, F Maghsoodifar, S Radfar, H Moftakhari, S Williams, J Lakin, E A Elliott, T Miller-Way, A Dixon

1949844 *Building an Learning Ecosystem within an Learning Ecosystem:* **K P Czajkowski**, S Mierzwiak, T Ostrom, J Taylor, P Garik, J Bourgeault, Y Jiang, O Oluawfemi, J Moore, N Adaktilou, D Padgett, S Darche

1894777 *Building Capacity for Effective Teaching of Computer Programming Across Disciplines:* **J G Singley**, P J Bueno de Mesquita, R Distefano, J Fatoki, V Heimer-McGinn, R Holmberg, A Marn, C Nicholson

1872117 *Building Climate Resilience in East Africa through Capacity Building and STEM Empowerment: The IKIRERE Project:* **G Kondi Akara**, C Ruiz Villena, R Parker, M B Sylla, C Fitzsimons, M Mutesi, D Tuyisenge, J Mukangango, I S Mbalawata, A Pant

1853682 *Capacity Building to Support the Machine Learning-Based Detection of Floods and other Natural Hazard Impacts in the Department of Environmental, Earth and Geospatial Sciences at North Carolina Central University:* **T J Mulrooney**, R Lucey, A Melancon, G Vlahovic, R Malhotra, C McGinn, Z Yang

1995568 *Climate analogs for climate change communication and education: a case study with US Specialty Crops:* **K Rajagopalan**, S Hall, C Kruger, T Potter, S Savalkar, B Singh, A Kirkpatrick

1904453 *Climatematch Academy: A Case Study for Collaboratively Building Climate Science Capacity:* **J Pearson**

1866278 *Co-Creating a Navajo Language Lexicon of Heliophysics Concept:* **M Storksdieck**, H A Fischer, N C Maryboy, D H Begay, C Teren, M S Kirk

1895706 *Co-Creating a Navajo Language Lexicon of Heliophysics Concepts:* **N C Maryboy**, M Storksdieck, D H Begay, H A Fischer, M Kirk, C Teren

1908578 *Co-Creating MUSE Outreach Products With the Boys & Girls Club:* **R Robinson**, N Byers, S Buxner, L Potts, S Steel, P K Harman, B De Pontieu

1938255 *Co-creating Science Education - A Collaborative Model for Developing Agents of Change and High-impact Learning Resources to Promote Rangeland Literacy in Secondary and Higher Education:* **X B Wu**, S Dixon, L Goodman, M Treadwell, J Keshwani, N Poling, B Yockers, E Ingram, M Lazo

1868698 *Co-creating with Communities: A Community of Practice Across Six Sites:* **P Martin**

1858263 *Collaborative Geoscience Outreach Through the USGS Youth Outreach Community of Practice:* **E K Williams**, A Aretxabaleta

2000174 *Collaborative Workforce development in Science, Technology, Engineering, Mathematics, and Computing Inspired by Earth and Space Science and Astronomy Research:* **L M Peticolas**, L Cominsky, H Hellman, R Holmes

1988232 *Connecting Currents: Evaluating Multidisciplinary Ocean Science Learning for Graduate and Undergraduate Students' Career Awareness and Readiness:* **A Miller**, E Fox, B P Thoma

1937263 *CULTIVATING FUTURE SCIENTISTS: IMPACT OF EARLY MENTORSHIP PROGRAMS:* **A Perez**, A S Mayer, P Hotchkin, E Preza

1921447 *CyberFACES: A collaborative CyberTraining platform for FAIR Science in Climate, Water and Environmental Sustainability:* **V Merwade**, J Joseph, A Rajib, L Zhao, I L Kim, J Hosen, W Huang, C X Song

1971918 *Drilling Down, Speaking Up: IODP Expedition 405 Models International Collaborative Education and Outreach in Earth Science:* **M Pincus**

1948423 *Empowering Forecasting Innovation Through EPIC Community Engagement and User Support:* **K Blackman**, A Jones, C Barone, Z Shrader, L Generosa, M Davis, J Dodson, J Wheeler, J Klubnick, C Seyb, P Pillai

1892849 *Erasmus+ Exo4Edu: Bridging Science, Teaching, and Outreach with Exoplanet Studies:* **A Doressoundiram**

1962324 *Exploring Science Identity Development Through a New Chemistry Curriculum in Partnerships for Informal Science Education in the Community:* **L D Anderson**, J Hoehn, N Finkelstein, J A de Gouw

1998235 *Feeding the Future: Research–School Partnerships for Agriculture Education in Uganda:* **C Beveridge**

1873197 *Fermentation and Formation: Building Scientific Skills through Team-Based Stable Isotope Research:* **B Dominici**, P Havener, S Kent, T Giacoppo, J Foote, S Walters, N Bernal Hoverud, V Atudorei, S Newsome

1986547 *Fifteen Years of Impact: International Space Weather Camp (ISWC) as a Model for Collaborative Science Education and Outreach:* **L Provenzani**, G P Zank, V Belser, A Kasten

1954741 *Forever Chemicals—From the Field & Lab to the Classroom: Connecting University Scientists and K-12 Educators to Co-create Lessons featuring Locally Relevant, Cutting-Edge Science:* **K Gray**, D B Haine, J Motyka, L Chesnut, J D Surratt, M Davern

1969235 *GAVRT: A 25-Year Collaborative Model for Engaging Students in Radio Astronomy Research:* **L N Lamb**, S Levin, N Kreuser-Jenkins, R Dorcey, J Lazio, M Anderson, H Marshall

1879797 *GEOPAths GO Jamaica 2025: Fostering a learning ecosystem for interdisciplinary Earth scientists through service learning and conservation in Jamaica.:* **R C Martindale**, M Kemp, A M Matheny, L Turner, D A D Gordon-Smith, I W Bolden, D Henry, C Trench, S James-Williamson, E Ranston-Young, M Rahamut, A Green, T Gomes, M O'Quin, A E Boville, K Esquivel, C Lawrence III, A Turner, A Tory, D Palazuelos, D Williams, A Alexander, Y John, R Robinson, S Samaroo

1976841 *HydroLearn: A Collaborative Platform for Co-Created, Peer-Reviewed, Learning Modules:* **L Turner**, E Habib, D G Tarboton, C Di Vittorio, C Maiorca, M Gallagher

1981223 *Making Space Weather Data Applicable and Meaningful to Students (3-12): A NASA Science Activation Collaboration between the NASA Heliophysics Education Activation Team (NASA HEAT) and My NASA Data:* **C Milotte**, A Rizzi, A Autore, J Taylor, B Buckner, M Kirk, C Ng, H B Davis, C Hunt Estevez, L A Alegbeleye, N Oakes, S P Reed

1897853 *OpenSpace: Open-source platform for co-creating Earth and space science data-based experiences for informal learners:* **R J Kinzler**, V Trakinski, M Villa, M Acinapura

1855741 *Place-Based Geoscientific Outreach for the 2028 Summer Olympics in Los Angeles, CA:* **A Xie**, R J Stern, T M Harrison, A Celestian

1954364 *Radio Astronomy Learning Modules to Engage Emerging Scientists:* **C A Higgins**, S F Fung, S Soni, C Ng, H B Davis

1976197 *Rezilience, Roots, and Relations: Learning through Indigenous Land, Water, & Data Stewardship.:* **T Heydman**, D M David-Chavez

1883622 *STELLA: Co-Creating Open-Source Remote Sensing Tools for STEM Workforce Development:* **M Taylor**, P Mirel, E Resnick, M D Pearce, A T Joseph, E Spike, R White, R Stagner, C Kohn, L Nichols, N Barbi

1916256 *Student interest versus the tradtitional approach: Rethinking how we teach Oceanography:* **G Michalski**

1971467 *Swifties Unite! Collaborative Storytelling, Outreach, and Education Project for Chimney Swift Conservation:* **K Perrault**, B McDonough, J Proctor

1913763 *Taking Root: Fostering Connections between Youth and the Local Environment through Collaborative Restoration and Recreational Fishing Education:* **M Treon**, N Plaisted, K Swain, M Hodges, T Bensinger, L Vandiver

1956422 *The Biological and Environmental Data Education (BEDE) Network: Integrating data science skills into courses and curricula with the Data Science Skills Curriculum Map:* **F J Bowlick**

1997342 *The NASA PUNCH Outreach Program – Realizing the Benefits of a "Stone Soup" Strategy for Multi-Institutional, Arts-Integrated STEM Collaboration:* **C A Morrow**, D J M Keller, D Johnson, J C Aubele, S Buxner

1963863 *The North Bergen STEM Academy: Continuing to Evolve a Hybrid Model of DEI and MEI to Build a Universal Learning Program Model:* **S Stern-Protz, MAED**, J Keshishian

1870182 *Where Curiosity Thrives: Co-creating Polar Science Engagement Through Polar STEAM Collaborations:* **M Barker**, J Ivory, J Risien, K O'Connell, P Betjemann

2001462 *Who Makes It Through? The Role of Science Identity and University Practices in Transfer Student Persistence in Earth Sciences:* **B R James**

252450
Creating and Strengthening Transformative University and Community College Connections *(joint with EP, H, OS, SY)*

Conveners: **Tess Weathers**, Cal Poly Humboldt; **Cristina Cardona**, Community College of Baltimore County; **Sonya Lopez**, California State University Los Angeles; **Karen Menge**, Delgado Community College

1972731 *A field-based Volcanoes and Ice Summer Program (VISP) in the central Oregon Cascades to engage community college students:* **C Volpano**, P Moreno-Yaeger, L Guerrero, A Myrbo, C Friedle, B R Edwards, B S Singer, M Townsend, S A Marcott

1928795 *ARISE: Bringing the Search for Life in the Universe to Undergraduate Science Education:* **J Earwicker**, V Gajjar

1938225 *Co-Collaboration Between Community College and University Students in Research at Sea Yields Mutual Benefits:* **T S Weathers**, J Aquino, T Barrueta, M Braswell, M Dragovich, S Gautier, B Shah, F Lorenzo, K Ly, J Valenzuela, R Pacier, V Vilton, S K Cooper

249485
Digital Learning Innovation in Earth and Space Science Education: Promises, Pitfalls, and the Path Ahead

Conveners: **Rosamond Kinzler**, American Museum of Natural History; **Ariel Anbar**, Arizona State University; **Chris Mead**, Arizona State University; **Amy Pallant**, The Concord Consortium, Concord, USA

1951773 *Accelerating Forecast Innovation: EPIC's Collaborative Framework and HPC-Driven Transparency:* **K Booker**, A Kimball

1984484 *Arctic-Focused Geophysical and Interdisciplinary Learning Through AlaskaX:* **D S Ozturk**, S Holland, L Varghese, L Odell, S K Panda, F J Meyer, M Rudolf, A Badola, R Itani, M DeLue, MSc, S Zwieback, K Timm

1846806 *Evaluating student use of multiple external representations in introductory geology: A digital visual representation assessment tool for understanding plate tectonic processes:* **C Cervato**, J Polifka, K Viskupic

251953
Earth and Space Science Education Time Capsule for 2050 *(joint with SY)*

Conveners: **Theresa Schwerin**, Organization Not Listed; **Matthew Nyman**, University of New Mexico; **Heather Fischer**, Oregon State University

1892970 *Engaging community college students in field experiences with 4-year partners.:* **C Cardona**

1894455 *Engaging non-Earth Science students through a field-based Volcanoes and Ice Summer Program (VISP) in the Chilean Lake District of central Chile:* **P Moreno-Yaeger**, I Fustos-Toribio, B S Singer, B R Edwards, M Romero, Y Orellana-Salazar, C Volpano, F Vera, L Guerrero, A Myrbo, S A Marcott

1855872 *From Uncertainty to Preparedness: Leveraging Outreach to Strengthen the 2YC to University Pipeline:* **N K Murray**, B Reed

1911902 *Improving STEM Transfer Student Success through Leadership Development: Early Results from an NSF S-STEM Project:* **R Perkins**, J Weremijewicz, M J Gill, M T Stefanik

1952305 *Preparing Community College Students for STEM Careers through Multiple Opportunities for Research Experiences in Ocean Sciences and Engineering at WHOI:* **J A Huber**, M Serres, K Thieler, B Burger, M K Tivey, D L Foster

1968521 *From crater to classroom: Designing digital field experiences in Northern Arizona:* **B R Smith-Konter**, A Khan, S Affinati, A Baker, J Denny, A L Gagné Landmann, J Garcia, A LaPlante, R Lenegan, N Riggs, A J J Tamer, C Tierney, A D Anbar

1959142 *Implementation of a Graphical User Interface for the Planet Profile Interior Structure Modeling Software:* **S Vance**, M Niesyt, S Chang, J Weber

1881419 *Sharing educational resources on hydrological modelling between institutes using eWaterCycle and Teachbooks:* **R Hut**, B Schilperoort, M Melotto

1898103 *Using Digital Planetariums for Immersive Group Virtual Field Trips:* **K C Yu**

1868081 *Virtual Field Trips in Canyon de Chelly National Monument: Immersive visual tools for teaching sedimentary processes and environments:* **A W Jacobel**

1962412 *Virtual Reality as a Tool for Science Educators: the "Charge Playground":* **G Eberlein**, M R Argall

2002624 *You Are Not Alone: Bridging Astrobiology Research and Education through Interactive Digital Learning and an Underlying Learning Framework:* **A D Anbar**, B Hasty, D Hunsley, B Teece, I Mishra, G Bruce

1958576 *There is no Universal Geoscience Curriculum:* **K Ferrier**, E M Golos, M Haseloff

1929353 *What are we teaching future hydrologists? A syllabus time capsule from 43 undergraduate hydrology courses:* **D M Ciruzzi**, C Kelleher, J P Gannon, PhD

252192
Earth Observations for a Better Tomorrow: Superpowers for Earth Observation Training, Education, and Workforce Development

Conveners: **Christian Reyes**, Booz Allen Hamilton; **Sydney Neugebauer**, NASA Capacity Building Program; **Lillian Schaeffer**, Booz Allen Hamilton; **Natasha Sadoff**, NASA Goddard Space Flight Center, SSAI; **Sydney Neugebauer**, NASA Capacity Building Program

253684
Education Research in the Earth, Ocean, Atmospheric, and Space Sciences: Theoretical Foundations, Methods, and Results

Conveners: **Laura Lukes**, University of British Columbia; **Heather Fischer**, Oregon State University; **Caitlin Callahan**, Grand Valley State University; **Chris Mead**, Arizona State University

1951375 *Advancing Geosciences through the History of Geology and Environmental Justice:* **R M Clary**, S K Boss, A Owen Nagel

1987263 *Backward Design and Planetary Science Education: A Meteorite Lab Case Study:* **K Frederick**, M Gagne

1948155 *Comparative effectiveness of virtual and in-person field experiences in teaching observation skills in ecology:* **C Mead**, S Kassis, N Doud, S Brownell, C Luke, S J Hall, C Disbrow

1969079 *Gender Equality in Soil Science: A Brief Analysis of Faculty Salaries in 2019 and 2022 in the United States.:* **X Liu**, A Sadeghpour, E Brevik

251922
Evaluating Progress and Impact of Education and Outreach Programs in Earth and Space Science

Conveners: **Sanlyn Buxner**, Planetary Science Institute Tucson; **Chris Mead**, Arizona State University

1927195 *Adapting to Change: Lessons Learned from Pivoting from an In-Person to a Virtual Student Research Symposium:* **J Bourgeault**, E M Jaffee, PhD, H F Wicklein, A Carlson

1972247 *An Analysis of UTEP's Pathways to Geosciences High School Summer Camp 2017-2025:* **R Walker**

1931972 *Bridging Local Needs and National Goals: America View's Superpower in Earth Observation Training:* **C McGinty**, L Wirth, D Delparte, R Yantis, R Dodge, R Congalton, L J Quackenbush, J McGee, N H F French, B Shellito, A Maxwell, R McNeely, C Chicola

1952883 *Libraries: Your Friendly Neighborhood Education Superheroes:* **J B Harold**, A Holland

1957549 *Superpower Activated: EOTEC DevNet Connects Users to EO for Disaster Resilience:* **B Connell**, N Sadoff, E Martin, C Reyes, M A Stelmaszczuk-Gorska, Z Andreeva, L Brocca, G Agbaje, C Bhatt, J Danumah, P De Salvo, R Dutta, R Eckardt, J Gaona Garcia, S Jayasinghe, N D Searby, W C Straka, M Higgins, D Matsapola, Z Nigatu, E Oku, F Yépez Rincón, T Hanchiso Sodango, Á Soldano, L Veeck, J Del Rio Vera

1985102 *Navigating New Terrain: Exploring Educator Perspectives on Virtual Field Trip Training through TPACK:* **E Godin**, C Mead, M Narish, J L Swann, D Hunsley, S Kirk, A J J Tamer, B Davey, G Bruce, A D Anbar

1938403 *Research Infrastructures as Engines of International Collaboration and Comprehensive Skill Development:* **C Hagen**, M SanClements, J K Back, T G Bornman, G T Feig, P Cotiyane-Pondo, R Cruz, E Girola, K Deshpande, A Cerón-González, K Jay, T Karns, C Keating, W L Kutsch, C M Laney, H W Loescher, P Mabee, M Mirtl, B Morris, B Murphy, T Ohnemus, L Pogosyan, A R Possinger, S Villarreal, B L Ruddell, J A Siggers, D Spence, T L Swetnam, C Poppe, Q Xie

1884392 *Teaching-focused professional development program enhances the teacher identity and sense of teaching agency among science, technology, engineering, and mathematics university teachers:* **L Arthurs**

1922576 *The OCEAN FOR ALL Alliance: Bringing Ocean educators from around the world together to collaborate, learn, and improve.:* **T Frensley**, H Eaton, E Stratton, M Jaynes, F Ulrich

1866519 *Centering Practitioner Knowledge in Evaluation:* **R Ostman**

1969004 *Community Collaboration and Geoscience Transformation at Year Three of CIELO-G:* **S Hardy**, A A Velasco, B Brunner, H A Gutiérrez-Jurado, M S Karplus, L Ma

1950202 *CORE School: COres for Research and Education at the Gulf Coast Repository:* **L B Childress**, P Blum, S C Bova, R G Hatfield, S OConnell, M Penkrot, M J Malone

1905808 *Earthquake Learning Exhibition for transferring geoscience knowledge to the public: an example from Nepal:* **S Subedi**, N Valenzuela, L Chardot, P Dhami, L B Adhikari, M Bhattarai, R P Dhakal, M Böse, G Hetényi

1926331 *Engaging Communities Through Space Science: Findings and Future Directions from the IMAP Outreach Program:* **A Pearl**, L Bartolone

1975327 *Evaluation of the MUSE Mission: Partnering with Community Organizations to Tell Our Collective Story:* **S Buxner**, R Robinson, N Byers, A Nonomura, L Horvath, L Potts

1912997 *Integrating Creative Evaluation into Climate and Water Education: A Multi-Year Look at Student Engagement and Learning:* **J Pinchinat**, L Gallagher, M Soriano Jr, R M Maxwell

1928457 *Measuring STEM Interest, Identity, and Student Learning Outcomes:* **J Valcarcel**, A Grillo-Hill

251272
Facilitating a Positive Social and Emotional Culture While Promoting Excellence in the Earth and Space Sciences Education and Research Experience *(joint with SY)*

Conveners: **Nicholas Gross**, Boston University; **Eddie Gonzales**, NASA Goddard Space Flight Center; **Sanlyn Buxner**, Planetary Science Institute Tucson

2001309 *Facilitating Pathways for Undergraduate HBCU Students to Transition to Graduate Programs in Geosciences:* **A Kar**

247271
From Data Analysis to Classroom Application: Developing and Inspiring K-12 Learning Materials

Conveners: **Margaret Holzer**, Chatham High School; **Diana Ibarra**, Independent Schools Foundation Academy

1954909 *Astrobiology for Early Learners: Integrating Research, Play, and Imagination in K–2 Classrooms:* **L James**, S E Jung, C Knox

1911252 *Breaking Down the Science: Engaging Educators and Scientists in Developing Innovative K - 12 Marine Debris and Microplastics Resources:* **E V Bell**, M Treon

1862571 *Bringing USGS Water Data to Classrooms: Engaging Students Through Water Science and Data Literacy:* **J McKay**, A Viedma

1971386 *Building Interdisciplinary Climate Connections (BICC): a Subject-Spanning and Inquiry-Based Approach to Climate Change Education:* **J Shope**, J D McDonnell, B Kociolek, M Kaplan

1928995 *Connecting Students to the Science of Water Power: Virtual, Interactive Renewable Energy-Powered Island as a K-12 STEM Education Tool:* **B Stratton**, A Cardinal

1936247 *NSF SOARS Legacy: Lessons Learned from 29 Years of Cultivating the Next Generation of STEM Leaders:* **M A Vara**, B Hatheway, M Jimenez, E Xintarianos

1966992 *Stargazing Off the Grid: Evaluating Portable Planetarium Education Across Alaska:* **A Smith**, K Meurlott, S Sakhalkar, K Storm, L McGilvary, H A Fischer, K Taylor, V Sellers, A Chaudhuri

1961622 *What Does it Take to Collect Crowd-sourced Scientific Data? Reflecting on the Success of the Civil Air Patrol Aviation Weather Mission:* **H A Fischer**, M W Nyman, M Storksdieck, N Staus, T G Schwerin, M Colon Robles, S Babb

1936976 *Not Just Numbers: How NSF SOARS Selects and Supports Participants for Potential, Purpose, and Community:* **M A Vara**, B Hatheway, C L Raftery, V Vincente, M Myron-Karels

1948863 *Positive Cultural Change in the Geosciences:* **C H Orr**, D M Czeck, J Jones, C L B Manning, PhD, J R McDaris, R McFadden, J M Wenner

2003189 *"Now What for the Science Community?A Public Discussion of How the Science Research and Education Communities Might Respond to Current Challenges:* **A Jearld Jr**, G Liles, O Scott Price

1941668 *CYPHER: Empowering K-12 Students with 3D-Printed Sustainability and Earth Science Projects through Adventure-Based Learning:* **A Quarkume**

2003413 *Embedding Environmental Sensitivity through Climate Education: A Mixed-Methods Study in a Semi-Urban Indian Classroom:* **A Saini**, S S Saini

1975865 *Engaging High School Students in Participatory Science with 3-D Coral Core CT scans:* **A Strange**, O Jasnos, T DeCarlo

1932952 *Exploring environmental impacts with high school students through interactive FossilSketch activities:* **A Stepanova**, C A Alvarez Zarikian, C L Belanger, S Anwar

1975314 *Extreme Data and Professional Development for K-12 Teachers at the "Home of the World's Worst Weather":* **B Fitzgerald**

2003609 *IDENTIFYING MEANINGFUL INDICATORS OF ACADEMIC GROWTH:* **D Russ**

1984972 *Is There Empowerment in 8th Graders Researching Water Disasters in Math and English Classes Through Interactive Governmental Data Platforms?:* **L Josset**, A Smith, S Sakyi

1928599 *NOAA Data in the Classroom New Heat Islands Module:* **B Olivier**

1938917 *Partnering for Impact: Co-Designing a Digital Nitrogen Cycle Game with Undergraduate Students to Engage K-12 Learners:* **J Malmberg**, S Clark, R Payo, M Rummel

1929848 *The value of connecting Educators and Scientists through the International Oceanographic Discovery Program "School of Rock" and the impacts on Student engagement and outcomes.:* **R Scroggie**, E Aguinaga Arancibia, W Kennedy, M Lamb

250924
MultiSector Dynamics: Preparing the Next Generation of Researchers to Meet Transdisciplinary Environmental Challenges *(joint with GC)*

Conveners: **Julia Szinai**, Lawrence Berkeley National Laboratory; **Thomas Wild**, Pacific Northwest National Laboratory; **Ana Dyreson**, National Renewable Energy Laboratory Golden; **Adam Wiechman**, Princeton University

1928167 *Charting a new course: transforming graduate education through participatory interdisciplinary learning opportunities:* **N B Grimm**, M Clark

1888073 *CODE-AG: A Multidisciplinary Framework for Digital Agriculture Education:* **Y Huang**, M Bhandari, S Paudyal, Z Wei, J Baca, X Gonzales, S Dattamudi

252666
Overlapping Boundaries and Needs in Acoustics Education *(joint with OS, SY)*

Conveners: **Liesl Hotaling**, Eidos Education; **Kathy Vigness-Raposa**, INSPIRE Environmental

249847
Polar Science Education: Broadening Engagement (cosponsored by NAGT: National Association of Geoscience Teachers) *(joint with C, OS, SY)*

Conveners: **Melissa Barker**, Polar STEAM; **Jami Ivory**, Oregon State University; **Kari O'Connell**, Oregon State University

1996732 *"Chasing Arctic Air": A STEM Kit for Hands-On Polar Science in a Box:* **R Pooley**, A Warnock, C Zang, J Clark, P Zieger, J Kojoj, A Salamone, M Tjernström, M D Willis

1927509 *(Math) Lessons from the Ice: Leveraging Authentic Science for High School Math Education:* **L Brennan**

1988671 *Using 3-D Printed Microfossils to Teach Students About Paleoclimate Aboard the Rutgers Science Explorer Bus:* **R Sarkar**, C Ferraro, E Serrano-Perez

1960632 *Using Props and Social Math to Communicate the Scale and Urgency of Climate Change:* **D Haas**

1979345 *Women Doing Science Shiny App: A Classroom Tool to Foster STEM Identity:* **L Puffer**, K Craigen, A A Phillips, PhD, C Galaz García

1904397 *Design, Build, Deploy: CU GeoData's Lower-Cost Sensor Network as a Blueprint for Undergraduate Engagement with Science and Local Communities:* **N Kastoun**, S Jurado, K Miller, C B Farber, D Acosta, J Halberstadt, L Alcoba, A Aravind, J Lau, R Toledo, L Becker, J Yohannan, N Bhatti, J Chen, M Chinchilla, H Donnelly, S Doyle, U Grover, O Hoch, R Hu, R Husain, L Hwang-Geddes, E Keefe, S LaBore, M Lin, J McDonald, S Morgan, H Mu, L Rogers, A Saute, N Spoto, R Sreeram, N Sudarshan, D Xu, J Yiu

1980575 *Experiential Learning through a Multi-disciplinary Cohort-based Undergraduate Water and Climate Science Communication Fellowship:* **A Mulchandani**

1977738 *The CUAHSI Virtual University (CVU): Preparing the Next Generation of Water Scientists Through Modular, Inter-Institutional Learning:* **J Masterman**, S P Loheide III, L Turner

1918833 *Empowering Early-Career Scientists Through Underwater Sound: An Ocean Observatories Initiative (OOI) Facility Board (OOIFB) Summer School School Integrating OOI Acoustic Datasets for Multidisciplinary Training and Research:* **H Morin**, D C Soule, S Abadi, W J Lee

1855729 *Underwater Acoustics Education using Discovery Of Sound In The Sea (DOSITS):* **L A Hotaling**, K Vigness-Raposa

1930538 *From the Southern Ocean to the Great Plains: Broadening Polar Science Engagement Through Classroom, Community, and Creativity:* **K Preheim**, R S Robinson

1873325 *Singing the Science of the South Pole Telescope: A STEAM Approach to Polar Education:* **L Orth**

1958774 *A Gathering of Knowledge & Wisdom: Experiences in Facilitating Healthy and Trusting Talking Spaces for the purpose of Alaska Curriculum Co-Production:* **M McNamara**, L McGilvary, L Schoening, S A A Topkok

1934833 *Arctic Citizen Science Projects across the Mackenzie Delta Region in Northern Canada:* **K J E Boggs**, A Dubois Gafar, C Neild, J Humphries, A Wilson, B A Bergquist, L Nichman, Z Mariani, I Julian

1858754 *Comics, Climate, and Community: Reimagining Arctic Science through the Eyes of Community College Art Students. Janice Ledgerwood, Clovis Community College, Dr. Peter Ungar, University of Arkansas, Dr. Mary Heskell, Macalester College, Dr. Aleksey Sheshukov, Kansas State University.:* **J Ledgerwood**

1851588 *Connecting Field Research and Education: Reflections from a Polar STEAM Experience on the Ice in Utqiaġvik, Alaska:* **B Wilson**

1954541 *Drop by Drop: Exhibiting the Physics of Tidewater Glacier Melt and Bringing Polar Science to a Desert Community:* **B E Stoneburg**, J M Cusack, V Hawkins

1864440 *Engaging Students with Authentic Polar Data: A New Virtual Field Lab on Climate Feedbacks, Albedo and a Positive Look Toward the Future:* **A C Adolph**, L T Huffman, B Grosser

252356
Programs that Provide Research Experience for Undergraduate Students in Earth and Space Sciences

Conveners: **Nicholas Gross**, Boston University; **Sanlyn Buxner**, Planetary Science Institute Tucson

1897917 *The SHIELD Distributed REU Program: Distributed Science Team Enhancing Site REU Efforts :* **N A Gross**, S Buxner, M Opher, J D Richardson

2002866 *Heliophysics REU Program at The University of Alabama in Huntsville and NASA Marshall Space Flight Center: Celebrating 13 Years of Service to the US STEM Undergraduate Community:* **M S Yalim**, G P Zank

1981934 *Lessons Learned from a 10-week hybrid summer undergraduate REU program:* **M Adams**, A Novoa, F Gonzalez, K Auzenne

252277
Rooted in Joy: Centering Belonging, Accessibility, Justice, Equity, Diversity, and Inclusion (B-A-JEDI) in Earth, Planetary, and Space Science (EPSS) Education and Outreach
(joint with SY)

Conveners: **Regupathi Angappan**, Applied Physics Laboratory Johns Hopkins; **Chanud Yasanayake**, Johns Hopkins University Applied Physics Laboratory; **Christian Lao**, University College London; **Meryem Berrada**, Planetary Science Institute; **Cara Pesciotta**, Johns Hopkins University

1881163 *"We are the land and the land is us": circular mentorship with a Dene community:* **P C Griffith**

1930414 *From Alaskan Tundra to Louisiana Science Center: Developing Educational Resources From Field Experience:* **E Sanders**

1949619 *From Alpine to Arctic: Using Mount Washington to Engage Students in Polar Science:* **J Bellefontaine**, E Towns

1995706 *Ice on Campus: Ice Core Science Outreach to Colorado Community Colleges:* **M Erskine**, M Nicewonger

1848851 *Integrating Arctic Field Research, Storytelling, and Culture into Geoscience Education: A Polar STEAM Experience in Utqiaġvik, Alaska:* **H Grant**, M Hock

1858530 *Math Meets the Midnight Sun: Tackling Saltwater Intrusion in Prudhoe Bay:* **T Ohlstrom**

1883549 *Students do GRate science while building climate, data and polar literacy!:* **S Slack**, M Turrin, J P Briner

1878762 *The Armstrongs' Arctic Adventure! Teaching Polar Science Through A Stage Musical:* **H Beasley**

1894909 *Making Waves Podcast: Exploring STEM Through Undergraduate Voices:* **E Langer**

1912232 *Sensors in Earth, Oceans, and Space Science – How We Observe Our Planet: An Interdisciplinary REU at the University of New Hampshire:* **A M Keesee**, D S Grogan, K Ziervogel, T Mandel, G Venegas, E Froburg

1977551 *Shining a Light on the Boulder Solar Alliance REU Program: Lessons Learned and Future Renditions:* **G Gonzalez**, W Reed, J I Barnum, MSc

1976578 *The Experience and Results of the Sixth Edition of The University of Houston's Class on How to Build Geoscience Instruments.:* **E A Bering III**, A L Renshaw, R C Jochims, M Bastidas, C Astraquillo

1955235 *The Jackson School of Geosciences NextStep Geosciences: Preparing the Next Generation of Geoscience Leaders for the New Workforce:* **C Simurda**

1977548 *Building Community and Belonging in Graduate Climate Research: Lessons from the Graduate Climate Conference (GCC):* **S Heflin**, J Rotondo, S Gale, A Chang, C Draeger, F Stemmer, C Dean, A Schefler, Z Meng, A Rajeev

1886215 *AbGradCon 2025: Dark Skies, Bright Futures, or: Persevering Despite the Odds:* **S Pryor**, R McClish, Z Haddadin, A Diering

1927731 *Combining Hawaiian Studies and Outdoor Education: Designing Place-based, Experiential, and Culturally Relevant Curriculum:* **S Alvarado**

1979069 *Endarkened Design: Reimagining STEM Learning through Culturally-Rooted Educational Escape Rooms:* **M Washington**

1922132 *From Advisory to Generative: Engaging this Generation's Graduate Students in University Governance:* **S Stanley**

1981807 *Observing Sustainable Practices at the 2025 Chinese Bridge Global Finals:* **P Rao**, J A Flora, C M Zanocco, T Sun

251964
Soils Beyond Dirt: Engaging Learners with the Hidden Stories Beneath Our Feet

Conveners: **Arghya Goswami**, Northwest Missouri State University; **Alexander Taylor**, Northwest Missouri State University

251672
Successes and challenges in geoscience workforce development at two (2YC) and four year (4YC) colleges.

Conveners: **Kristen St John**, James Madison University; **Kusali Gamage Sooriarachchi**, Austin Community College

1865355 *A Decade of Supporting Two-Year College Students and Faculty as They Discover Geosciences:* **D J Charlevoix**, K Russo-Nixon, P Shabram

1904814 *Building Community and Enhancing Career Preparedness with Peer Advisors:* **D Laczniak**

1955886 *Enhancing Research Capacity and Career Readiness in Earth and Environmental Sciences Using Data Analytics and Remote Sensing Data at an MSI:* **E Mendez**, T Y Dong, C L Cheng, E Pereira

250292
The Coastal Workforce in Science, Engineering, and Design Professions: Expanding Workforce Pathways to Face Present and Future Challenges *(joint with EP, GC, OS, SY)*

Conveners: **Samuel Bentley**, Louisiana State University; **Jacqueline McComb**, Southern University and A & M College; **Faith Walton**, Louisiana State University; **Sarah Brannum**, Louisiana State University; **Madisyn Grice**, Xavier University of Louisiana

1923044 *Awards, Keynotes, and Gender Equity in Coastal Geoscience and Engineering: A Fifty-Year Perspective:* **K Wilson**, S G Lott, K Anarde

1924189 *PROGRESS: A transferable mentoring program for undergraduate earth science programs:* **S A Schanz**, M A Burt, S Clinton, M Estrada, M Guajardo, P R Hernandez, L Luo, N Maldonado, M Patterson, I B Pollack, Q Zhang, E V Fischer

1904308 *The Long Line of Joy: How Centering Decolonial Voices Transforms Scientific Community:* **L J Graumlich**

1943018 *A Global Paleosol Atlas Initiative: Integrating Open-Access Contributions, Paleoclimate Proxies, Classification Frameworks, and Stratigraphic Data Across Geologic Time:* **A Goswami**

1884816 *Implementation of Multidisciplinary Soil Science Coursework at Northwest Missouri State University:* **A Taylor**

1999066 *Urban Soil Health is Everyone's Business:* **A Paltseva**

1881728 *Expanding Geoscience Opportunities in TYC: Strategies for Exposure and Implementation:* **P Ganapathy**

1967096 *Fostering adaptable geoscientists: Integrating disciplinary knowledge with professional practice for evolving career pathways:* **R McFadden**, E A R Iverson, C H Orr

1940485 *Geoscience workforce development at the crossroads: challenges and successful innovative strategies:* **S Yelisetti**

1978454 *Partnerships to Support Geotechnical Career Pathways at an Urban 2YC:* **K Murphy**

1952463 *Progress on GREEN-SJ, an NSF GEOPAths Project: Successes and Challenges:* **B A Christensen**, P Crumrine, M Young, A Myrbo

1984476 *Promoting Engagement in Physics, Chemistry, and Earth Science at Utah Valley University:* **M P Bunds**, D Czajka, V Rossi, M Halling, J Jensen, P Matheson

1857288 *From Extraction to Stewardship: A National Pipeline for Earth Resource Education and Careers:* **P Nelson**

1846642 *Bridging Science and Community in Coastal Modeling: A Co-Production Approach:* **E A Meselhe**, C Kemick, S Hemmerling, A Littman

1928802 *Broadening Participation in Coastal and Environmental Research for K–20 in the Gulf Coast Region: Mississippi River Delta Transition Initiative:* **S D Silva**, D Garello, M Afuwape, Z S Wilson-Kennedy

2004079 *Developing Future Coastal Workforce Skills Through Cross-Platform Projects and Technologies Including Remote Sensing and Geophysics:* **R Salunke**, S Khan

1931756 *Exploring the Affective Impacts of Field-Based Environmental and Geoscience Learning Experiences on Undergraduate Scholars:* **M Afuwape**, S D Silva, D Garello, Z S Wilson-Kennedy

2000165 *Optimal Sampling The Past As Recorded By The Atlantic Coral Siderastrea siderea:* **T Rahman**, K L DeLong, PhD, K Palmer, G Dolou

253285
The Dorothy LaLonde Stout Education Lecture

Conveners: **Sanlyn Buxner**, Planetary Science Institute Tucson; **Sanlyn Buxner**, Planetary Science Institute Tucson; **Laura Lukes**, University of British Columbia

250597
Undergraduate Earth, Atmospheric, Ocean, and Space Science Research and Outreach Posters

Conveners: **Kelsey Russo-Nixon**, UNAVCO, Inc.; **Michael Hubenthal**, Incorporated Research Institutions for Seismology; **Allison Schwartz**, University of West Florida; **Sanlyn Buxner**, Planetary Science Institute Tucson

1971647 *Analyzing WRF Physics Model Configurations for Improved Weather Simulation: Meteorological Impact of Agriculture in California's Central Valley:* **M Pasillas-Pablo**, R J Saltos, J Jung, M S Johnson, J D Mirocha, W To

1861588 *Assessment of Heavy Metal Contamination in Atlantic Sargassum:* **S Welch**, E Pisarski, M DeLorenzo

1864399 *Cosmic Ray Measurements in the Stratosphere via High-Altitude Balloons:* **C Lee**, J Liu, A Qazilbash, M Rajasinghe, W Skelly, C Vidaurrazaga, A Lee

1930423 *Creating a Temporal-Spatial Reference Map of Camp Watts, a Confederate Camp of Instruction: Aerial Imagery and GIS Applications in Historical Archaeology:* **E Putman**, S Shepherd, M Buchanan

2001815 *Engineering of Protease-Resistant Proteins via Computationally Guided Genetic Code Reprogramming:* **G Lopez**, C Arencibia, J Correa-Morris

1999939 *Enhanced Command Verification for the PSP Extended Mission:* **M Cardenas**, T Quinn, M Pulupa

1873751 *Evaluating Bias in Satellite Phytoplankton Productivity Estimates:* **T Masters**, C Payne, N S Lovenduski

1929535 *Evaluating WRF Physics Schemes for NASA's Land-Earth System Digital Twin: Urban Meteorology Assessment Using NOAA, CIMIS and CALMAC Observations in California's Central Valley:* **R J Saltos**, M Pasillas-Pablo, J Jung, M S Johnson, J D Mirocha, W To

1887383 *First Multibeam Echosounder Survey of Port Gamble Bay, WA, Using NOAA's Mobile Integrated Survey Team:* **R Vaswani**, T Faulkes, D Devereaux

1956557 *From Jupiter-Io to Exomoons: Building the Infrastructure for Future Radio Analysis:* **J Ryan**, D Donelan

1978682 *Investigating Mining Impacts on Groundwater and Soil in Missouri's Ozarks:* **I Patrick**, B Kenlee, S Kenlee, T Johnson, J Hembree

1928581 *Investigating the Elemental and Charge State Composition of Solar Eruptive Events:* **S Park**, T Ervin, M Wieber

1992523 *Ionospheric and Thermospheric Effects of Solar Storms on Low Earth Orbit Satellites:* **L Flowers**, J Shetye, D L Wu, N Swarnalingam

1869584 *Loess provenance in Bosiljevski, Croatia Terra Rossa Formations through SEM Based Mineralogical Analysis:* **N Restivo**

1932409 *Machine Learning Approaches to Model Sea Turtle Nesting: A Comparison of Random Forest and Support Vector Machine Models:* **A Scamardo**, H Wetherington, S Seals, P P Schmutz

1855387 *Mapping Recent Sea Ice Patterns in Polar Regions Using Alkenone Biomarkers and Establishing Utility for Sea Ice Reconstructions:* **Q Sun**, E Ericson, Y Huang

1928233 *MAVEN Spacecraft Attitude and Particles & Fields Instrument Health:* **K Delarno**, C Abono, T Mercer, R Jolitz

1966964 *MAVEN's Comprehensive Solar Flare Catalog for Mars: A Resource for Quantifying Solar Influence on Atmospheric Loss:* **A Silva**, A Rahmati, D E Larson, M O Fillingim, S Curry

1959547 *Modeling the LUSEE Night spectral response using LOFAR measurements of the quiet sun:* **B Teshale**, F Yousuf, M Pulupa, S D Bale

1875955 *Optimization of Ethanol and Acetone Reagent Ion Concentrations in a Chemical Ionization Mass Spectrometer (CIMS) for Improved Detection of Pyridine:* **U Aguilar Gutierrez**, B Dobson, M Lee, E C Browne

1972322 *Optimizing the X-ray Reflectivity Module in the Ray Tracing Software for Future FOXSI Missions:* **M Zhou**, D Sun, A Tosolini, J C Buitrago-Casas

1863062 *Physics to Fish: Habitat Structure for bigeye tuna, Thunnus obesus, Across an Ecological Gradient in the North Pacific Subtropical Gyre:* **E Scott-Wellman**, J Wren, D Kobayashi

1929739 *Predicting Climate Vulnerability Through Patterns in Lake Ice Phenology:* **J Contreras**

1924941 *Pressuremeter In-Situ Test as a Way of Structural Foundation Design on Mars:* **Ł Kuszyk**

1926068 *Revealing Evening Oscillations in Desert Climate: A Multi-City Temperature Analysis Centered on Las Cruces:* **M Navarrete**

1883482 *Shifting Horizons: Viewshed Impacts from Shoreline Transformation and Sea Level Rise:* **T Smith**, J D Morgan

1900334 *SMAP Insights: Mapping and Interpreting GNSS Interference Events From 5–10 May 2025:* **M Guzman**, D L Wu, J Shetye

1901214 *Student Research Experience and Professional Development in NASA MUREP DEAP Program at Bethune-Cookman University:* **J Grant**, K San Antonio, H J Cho, S Velasco, S C Medeiros, K Hubbard, A Melancon, R Lucey, P Tissot

1926383 *Temporal Trends in Sea Turtle Nesting: Effects of Environmental and Anthropogenic Events:* **D Adams**, D Cox, P P Schmutz, S Seals

252560
Watershed Moments: Experiential Learning in Hydrologic Sciences *(joint with H, SY)*

Conveners: **Kira Waldman**, University of California Davis; **Lauren Parker**, University of California Merced; **Andy Rost**, University of Nevada Reno; **Joshua Viers**, Civil and Environmental Engineering, University of California; **Kira Waldman**, University of California Davis

1975369 *Building Capacity in Water Science Through Experiential Learning: A Decade of The Water Prediction Innovators Summer Institute:* **J Masterman**, E Clark, J S Read, S Cohen, L Nations, L Turner

1945806 *CAPACITY BUILDING PARTNERSHIPS TO CONNECT RIVERS, PEOPLE, & SCIENCE THROUGH IMMERSIVE FIELD-BASED EDUCATION:* **J Vonesh**

250955
What have we learned from formal and informal Geoscience Education Research? *(joint with SY)*

Conveners: **Amanda Tazaz**, Florida State University; **Kristina Keating**, Rutgers University Newark; **Amanda Tazaz**, Florida State University

1972057 *Al-Hadiqa: Environmental Stewardship and Climate Education in Metro Detroit:* **H Salah**, A Seblini, Z Saad, R Zeinati, J Barhouma-Reynolds

1958034 *Broadening Participation in the Geosciences: Outcomes from the Science Museum of Minnesota's CORE Project:* **K Boeff**, J M R Hobbs, L Sethna, Z Plechaty, T Jwacu, R Callahan Schreiber, E Christian Ronning

1980305 *The Distribution of Cadmium and its Isotopes in the Subarctic Pacific:* **J Malloy**, H Hunt, T Conway, M Sieber, S Takano, H Obata, J Nishioka

1998861 *Understanding Spacecraft Surface Charging Effects with Simple Parker Solar Probe Models:* **J Byrnes**, M Liu, D E Larson, O Romeo

1900345 *Urchin health as a tool to inform management of kelp ecosystems in Greater Farallones National Marine Sanctuary:* **A Soltys**

1859954 *VNIR–FTIR Spectral Characterization of Monomict Breccias from the Dhala Impact Structure, India:* **A Sahoo**, S S Behera, S Bhattacharya, A Agarwal

1898272 *"What Are Those?" Pixels: Evaluating Drone Altitude Effects on Vegetation and Bare Ground Mapping Variables in Xeric Landscapes:* **A Rybakin**, S Stockman

1955511 *Cultivating Collaborative Water Leaders: Lessons from the Climate Adaptation Science Academy:* **J Severson**, C Cliburn, B L Schumacher, K Waldman, D Rothberg, M Duran, M Hashemi, A Gomez-Cervantes, L Murdoch, L Parker, J H Viers

1953318 *Hydrology Scavenger Hunt: A Streamside Lesson to Identify and Journal Hydrological Features:* **J Keyantash**

1901599 *Long Term Influences of Participation in Youth Participatory Science:* **S Brock-Contreras**, D Snow

1994253 *STRUCTURE FROM MOTION IN GEOSCIENCE EDUCATION: INTEGRATING FIELD SURVEY AND PHOTOGRAMMETRY FOR STREAM ANALYSIS:* **C Kaylor**

1886431 *The NSF-NRT Water: Research to Operations (Water-R2O) – Experiential Learning in the U.S. and Abroad:* **H Holcomb**, L Davis, G A Tootle, W Gurgiser, S J Burian

1970051 *Building the Future Hydropower Workforce: A Two-Fold Effort to Advance Infrastructure-Focused STEM Engagement and Career Pathways:* **L Davis**, S DeNeale, C Hansen, H Corsair, E S Parish, N Griffiths, R Uría Martínez, J Hyatt

1852160 *Career-Readiness in the Geosciences: Building Ties with the Professional Community Through a Modular, Student-Centered Program:* **J A Bowles**, D M Czeck, R Graziano, C J Paradis, V E McCoy, L J McHenry

1960485 *Creating Meaningful Support Networks to Encourage High School Students to Enter the Geosciences: The Science Museum of Minnesota's CORE Project:* **J M R Hobbs**, K Boeff, L Sethna, Z Plechaty, T Jwacu, R Callahan Schreiber, E Christian Ronning

1846874 *Does Taking Introductory Astronomy in a Planetarium Increase Student Success Rates?:* **D J Ludwikoski**

1950782 *Evolution of an Environmentally Focused Community Science Camp in Eastern North Carolina: Meeting Youth and Community Needs Through Iterative Program Design:* **T van Niekerk**, H Vance-Chalcraft, S M Moysey, N Bell

1912263 *Expanding Geoscience Experiences for Teens Through Community Partnerships:* **A Tazaz**

1977337 *Geoscience as a Western and Indigenous Science: Lessons from a Tribal College:* **K C Flick**, C Michel, S Stevens, L Zoet, D Menore, J C Libarkin

1899861 *Geoscience Curriculum Focused on Societal Challenges: Increasing Interest, Knowledge, and Workforce Skills:* **E A R Iverson**

260005
Education Student and Early Career GeoBurst Session

Conveners: **Michelle Nichols-Yehling**, Adler Planetarium; **Michelle Nichols-Yehling**, Adler Planetarium

252685
21st Century Geodesy: Growing the Field by Highlighting Contributions and Careers in the Service of Society

Conveners: **Benjamin Phillips**, Self-Employed; **Donna Charlevoix**, UNAVCO, Inc. Boulder; **Daniel Roman**, National Geodetic Survey; **Linda Foster**, ESRI; **Jeremy Maurer**, Missouri University of Science and Technology

2002012 *Expanding Geodesy Awareness and Skills at the Undergraduate Level: The MSU Summer Geodesy Internship Program:* **J Elliott**, J T Freymueller

1972622 *Attracting, Preparing, and Sustaining Geodesists: EarthScope Workforce and Education Initiatives:* **M Hubenthal**, G Haberli, B A Pratt-Sitaula, K Russo-Nixon, D Okamoto, M Weber

1980301 *Educating the Global 21st Century InSAR Workforce: Lessons Learned from the EarthScope InSAR Processing and Analysis (ISCE+) Short Course:* **G Funning**, F J Meyer, M Weber

1976052 *Geodesy: Promoting a Resilient World Through Geospatial Data Sustainability:* **L Foster**

1997309 *The Point of Beginning Initiative: Strengthening the Geomatics Workforce through Career and Technical Education:* **S Holland**, R Smith

1870734 *Elevating Earth Knowledge and Education through Next-Generation Satellite Laser Altimetry:* **H A Fricker**, J D Armston

1994692 *Integrating Formal and Informal Curricula in a South African First-Year Geology Field School:* **T Makhubela**, C Vorster, N J Wagner, O M Moroeng, N C Hlongwani, H Ueckermann, R J MacRoberts

1980163 *Resilience Ambassadors: Insights from a Multi-year University-Science Museum Collaboration to Engage Youth in Learning about Community Resilience to Natural Disasters and Extreme Weather:* **S Yelton**, K Gray, T Prichard, K McArdle, D B Haine, L Cross, A Maron

1899068 *Water development in the Peruvian Andes: building a community- and student-led international research opportunity:* **K Keating**, M Lang, J Oshun

1881650 *Undergraduate Geodesy Curriculum: How Data-rich Online Modules are Used and Adapted by Faculty:* **B A Pratt-Sitaula**, K O'Connell, B J Douglas, B Walker, B T Crosby, E A R Iverson, D J Charlevoix

1881844 *Applied Geodesy for Earthquake Science and Public Safety: A Perspective from the USGS Earthquake Science Center Crustal Deformation Group:* **K A Guns**, A J Barbour, T L Ericksen, C Hanagan, S E Minson, J R Murray, E Phillips, F F Pollitz, J Parsi, R C Turner, A Aspiotes, C W Baden, E S Cochran, D E Goldberg, A Manaster, J M Nevitt, M H Murray, J L Svarc

1886335 *Building a Digital Nation: The Critical Role of Geodesy in Norway's Digitalization, Presented by The Norwegian Mapping Authority:* **J Welle**, L Olsson

1896920 *Developing a Multi-Level Geodetic Workforce Pipeline Through Integrated Education, Research, and Outreach:* **H Lee**, C L Glennie, S Xie, J C Fernandez Diaz

1897895 *Efforts to Train PhD Students in Geodesy at SIO, UCSD:* **D T Sandwell**, Y Bock, A A Borsa, D Caccamise, Y A Fialko, H A Fricker, A A Gabriel, J Greenbaum, J S Haase, M R Mazloff, M A Zumberge

1898636 *Bridging the Gap in Geodesy Education and Capacity through NGS's Geospatial Modeling Grant Program:* **C E Parrish**, J T Freymueller, Y Bock, D Gomez, C Becker

1917163 *Branding a Hero: Attracting Students in Generations Z and Alpha to Purpose-Driven Careers in Geodesy:* **I E Pope**, S Stanley, J Maurer

1920467 *What is the Role of Professional Societies in the Geodesy Workforce? A Vision for the AGU Geodesy Section:* **K M Luttrell**, L M Wallace, A Socquet, M E Pritchard

1924011 *An Academic Consortium Approach to Enhancing U.S. Geomatics Education & Research: Lessons Learned from GEO-ESCON:* **D Kelley**, B Felts

1945556 *Professional Surveyors and the Geodesy Crisis: An Opportunity to Grow our Profession AND Public Awareness:* **T Burch**, L Foster

1947356 *From Datum to Digital Twin: Geodesy as the Bedrock of the Modern Reality Capture Economy:* **R Hippenstiel**

252845
Let's do that again! Hydrological Research Reproduced

Conveners: **Rolf Hut**, Department of Water Management, Faculty of Civil Engineering and Geosciences, Delft University of Technology, Delft, the Netherlands; **Caitlyn Hall**, Arizona State University

251384
Nonpoint Source Pollution Dynamics, Impacts, Management, Control and Regulatory Efforts in Groundwater and Vadose Zone Systems *(joint with B, GH, SY)*

Conveners: **Sushant Mehan**, South Dakota State University; **Thomas Harter**, University of California; **Nandita Basu**, University of Waterloo

1948608 *A General Method to Quantify Stream and Groundwater Vulnerability to Contaminants from Distributed and Non-point Sources Using Integrated Hydrologic and Particle Tracking Models.:* **C Y Wang**, M Soriano Jr, R M Maxwell

1961574 *Co-transport and retention of nitrate-phosphate in biochar-mediated saturated porous media:* **R Kumar**, J Lamba, S Adhikari, H Allen Torbert

1866052 *Community-Based Monitoring Network Design to Identify Nitrate Mobilization by Managed Aquifer Recharge (MAR) in the rural San Joaquin Valley, California, USA:* **Y Nuñez Bolaño**, T C Harmon, L Classen Rodriguez, A Gurevitz

1889833 *Deciphering Groundwater Nitrate Origins in a Hypersaline Inland Wetland through Isotopic Fingerprinting:* **M Jakhar**, P Sanyal

2002376 *Estimating Pre-Agricultural Groundwater Salinity in the California Central Valley:* **K Grobowsky**, T Harter

1899521 *From Orchard to Aquifer: The Cost of Groundwater Nitrate Compliance in the U.S. Nut Farming:* **Z Cao**, B Bhaduri, G Kourakos, T Harter

1916434 *Hydroclimatic Drivers on Groundwater Nitrate Variability in Western Wisconsin:* **A Matson**, J K Coleman Wasik, K A Clancy

1952129 *Spatial Literacy Through Storytelling: Inspiring the Next Generation to Save the World:* **L Kratky**

1954001 *Geodesy is a Joke: On the use of comedy and entertainment for recruitment of students to geodesy careers:* **J Maurer**, J Garcia

1966075 *A Center to Support the Sustainment and Growth of Geodesy:* **D J Charlevoix**, B R Phillips, S Merkowitz

1966604 *A Spaceflight-Based Perspective on Reinvigorating Geodesy:* **S V Bettadpur**, R S Nerem, L A Magruder

1975805 *Advancing reproducible and transparent research with practical skills in data and code management:* **A Bogan**, L Platt

2001695 *Irreversible Sorption and Dynamic Partitioning of PFAS in Wetland Sediments:* **E Cookson**, R L Detwiler, Z Han, A Adeleye

1926946 *Modeling Fate and Transport of Legacy Agricultural Nitrate in Central Arizona's Pinal Basin:* **B Bhaduri**, G Kourakos, S Megdal, I Kisekka, T Harter

1977566 *Modeling Soil Water and Nitrogen Dynamics for the Sustainable Management of Agricultural Managed Aquifer Recharge (Ag-MAR):* **W Cui**, T Zhou, N I Moonilall, C Prieto Garcia, E Levintal, I Kisekka, H E Dahlke

1883274 *Persistent Groundwater Quality Degradation in a Small Watershed with Different Agricultural Intensities:* **J Zhou**

1882841 *PFAS-impacted brackish groundwater treatment with boron nitride (BN) photocatalysis:* **M Sima**, M Wong, P Alvarez, Y Chung, J Donoso, G Oh

1940116 *Real-Time Soil Nitrate Monitoring for Adaptive Nitrogen Management in Irrigated Agriculture:* **C Bonfil**, I Kisekka

1993572 *Redox-related Carbon and Nitrogen Cycling in Agricultural Soils:* **R J Saracanlao**, E Connelly, J K Coleman Wasik, B Hassanpour

1898057 *The Impacts of Flooding, Purging, and Aquifer Type on Microbial Well Water Composition Following a Major Hurricane:* **A Webb**, C N Jones, K Pieper, A Pruden, D Dai, T S Bruce, Z Oremland, T Beach, B White, J Maynard, E Bailey, M Edwards, S Ghosh, M Brouse

1979683 *Understanding Patterns in Pesticide Detection Across a Non-Irrigated Agricultural Landscape:* **C Krause**, S A Ewing, R A Payn, B Heitshusen, J Verreth, S Fordyce, T Seipel

1982915 *Water Storage and Sustainability: Monitoring Water Quality and Methane Emissions in On-Farm Reservoirs:* **M Mondragon**, M L Reba, J H Massey, A Adviento-Borbe, J Nowlin, A Pieri

251653
Understanding Distributed Sensing Instruments for Scientific Discovery: A Guided Tour through the Tools of Earth Science *(joint with A, IN, NS, S)*

Conveners: **Haokai Zhao**, Massachusetts Institute of Technology; **Cian Dawson**, US Geological Survey; **Vidya Samadi**, University of South Carolina

248836
Water and Society: Innovations in Transboundary Water Resources Management

Conveners: **Ali Mirchi**, Oklahoma State University; **Amir AghaKouchak**, University of California Irvine; **Dalal Najib**, National Academy of Sciences; **Daniel Placht**, National Academy of Sciences; **Kasra Khodkar**, Oklahoma State University

1876328 *A Dynamic DRASTIC Framework to Analyze the Spatio-temporal Impacts of Human and Climate-Related Drivers on Groundwater Sustainability in the Transboundary Indus Basin:* **M U Akbar**, A Mirchi, A Arshad, A Mansaray, K Madani, A Saif Ullah

1974113 *A Global Assessment of Water Resource Vulnerability and Coping Capacity:* **D Y de Oliveira**, A Hjelmstad, C A Love, D Najib, D L Feldman, A Mirchi, D Placht, A AghaKouchak

1908174 *Assessing the Effectiveness and Limitations of Modelling Downstream Impacts on Nile Hydropower Dams:* **M Ramah**, E Heggy, E Hanert

1924521 *Assessment of Springs as Rural Water Resources in the Fergana Valley of Southwest Kyrgyzstan:* **S Orunbaev**, A E Fryar, B Asanov, G Jalilova, K Rignall

1917234 *Bridging Nexus and Diplomacy: Integrating the Water-Energy-Food Nexus in Transboundary River Governance:* **Y Khajavigodellou**, E F Moran, J Qi, J Chen, Z Zarrin

1929335 *Building Trust in Data Sources Used to Govern Transboundary Aquifers:* **D Manshardt**, C Kirchhoff

1871224 *Climate-Driven Hydrological Changes and Transboundary Water Security Across the Asian Water Tower:* **S Aryal**, Y Pokhrel

1876784 *SkyMapper: A Global, Decentralized Network for Planetary and Atmospheric Science:* **F Marchis**, T Esposito, G Cid, S Vervaet, S Pilorz, A Graykowski, J Hanus, R Lambert

1969266 *Techniques to compare and cross-calibrate DAS and seismometer data:* **G S Bainbridge**, S Karimi, Y Li, N Pelyk

1934275 *Wired, Winged, and Walking: Multi-modal Distributed Sensing Capabilities for Energy and Environmental Systems:* **Y Wu**, L Luo, J Wang, C Chou, H Chen

1948605 *Coordinating and Advancing Multinational Monitoring and Modeling Systems for Global Transboundary Water Resources Management:* **A Gronewold**, H Abdelhady, R Athreya, P Bye, A Gossard, R S Gupta, R Hoops, M Ombadi, V Rueda, B Saint Louis, S Steinschneider, Y Ming

1881716 *Crop Water Requirements in the US side of the Rio Grande-Bravo Basin:* **S Dhakal**, B D Richter, E Prunes, L Marston

1960075 *Evaluating Transboundary Water Cooperation in Central Asia: From Rapid Assessment to Template Development:* **B Holmatov**, J Lautze, M McCartney, I Abdullaev, B Abdurakhmanov

1881859 *Geo-web downscaling tool for GRACE/GRACE-FO: Advancing global groundwater monitoring & management in observation-constrained transboundary aquifers:* **A Arshad**, A Mirchi, C He, R Abolafia-Rosenzweig, A AghaKouchak

1856802 *Impact of Transnational Land Acquisitions on Transboundary Waters:* **P D'Odorico**, J Dell'Angelo, M C Rulli

1922428 *Inclusive Hydroclimatic Modeling and Debt Relief Can Resolve Disputes on Transboundary River Resources in Developing Nations:* **E Heggy**, M Ramah, E Hanert, A Farag

1914627 *Is Water Security Achievable? Evaluating High Resolution Hydrologic Interbasin Dynamics in the Western United States:* **T Piechota**, J Fuery, L Kauer

1890260 *Modeling Hydropolitical Risk under Large-Scale Dam Development in the Yarlung Tsangpo–Brahmaputra Basin Using AI-Based Geospatial and Hydrological Analytics:* **J Zhao**, Y Tan

1989077 *Navigating The Water Footprint of AI Data Centers in Transboundary River Basins: Risks, Governance, and Per-Workload Footprint Analysis:* **A Dogra**, A Mehran

1871023 *Policy Analysis of Transboundary Agreements in the Mano River Basin:* **A Mansaray**, A Mirchi, A Barrie, M Juanah

1886453 *Quantifying Renewable Groundwater in Transboundary Groundwater Conflicts using Numerical Models:* **N Wasankar**, P Clement

1954168 *Remote Sensing-Based Analysis of Long-Term Surface Water Spread in the Indus River Basin, India:* **A Sharma**, C K Singh

1985797 *Social Network Analysis of Transboundary Water Governance in the Kura-Aras Basin:* **S Erfan**, S Jafarzadeh

1847639 *Sustainable Demand Management of Transboundary Water Resources using Multicriteria Approach:* **S Kumar**, B R Chahar, C T Dhanya

1846260 *Teaching confidence-building in resolving transboundary water disputes to public officials – from theory to practical application: a case study in Tanzania:* **D L Feldman**

251367
Space and Heliophysics Science Undergraduate and Graduate Education Resources *(joint with SA, SM)*

Conveners: **Nicholas Gross**, Boston University; **Mark Moldwin**, University of Michigan Ann Arbor

GEOHEALTH

247585
Actionable Uses of Satellite Observations for Health and Air Quality *(joint with A)*

Conveners: **Helena Chapman**, NASA Headquarters; **Laura Judd**, NASA Langley Research Center; **Aaron Naeger**, Marshall Space Flight Center; **Aaron Naeger**, Marshall Space Flight Center

1874663 *A Spatiotemporal, Quasi-experimental Causal Inference Approach to Characterize the Effects of Global Plastic Waste Export and Burning on Air Quality Using Remotely Sensed Data:* **E Considine**, R Nethery

1853278 *Actionable applications of NASA's Goddard Earth Observing System Composition Forecast (GEOS-CF) and other resources to support global air quality forecasting:* **C Malings**, N R Pavlovic, D King, V Shah, P Wales, N Lazrak, F Mandarino

1947363 *Air Quality Monitoring for Resource Limited Settings: A Scalable and Cost-Effective Model from Grenada:* **K Mitchell**, N K Yang, N Dirienzo

1855135 *The Benefits of State-Aware Reservoir Operating Policies in Transboundary Water Systems: Exploring Input Selection and Policy Architecture Under Hydroclimate Uncertainty:* **C Swanson**, S Steinschneider

1919428 *The Shrinking Caspian Sea: Ecological Destabilization under Compound Human and Climate Stressors:* **J Duku**, A AghaKouchak

1899682 *Transcontinental Climate Data Collection and Sharing: A decade of progress with Trans-African Hydro-Meteorological Observatory:* **J S Selker**, N Van De Giesen, F O Annor

1855430 *Using Water Conflict and Cooperation Events to Illuminate the Impact of Management Interventions in Transboundary Watersheds:* **K A Brauman**, M McCracken, S Schmeier, A Wolf, P Beames, S Wallace, P Nadel

1922372 *Water Weaponization? Evaluating the Impact of Indus Waters Treaty Suspension on Pakistan's Water and Food Security:* **B Iftikhar**, A Anwar, A Iftikhar, B W Arif, U Saeed, A Ullah, I Abid

1892144 *Center for Geospace Storms Resources for Research and Education: Models, Analysis Tools, and Student Workshops:* **A M Keesee**, V G Merkin, M J Wiltberger

1928417 *Space Weather for Global Learners: Designing an Introductory and Open-Access AlaskaX Online Course:* **D S Ozturk**, R Itani, L Odell, L Varghese, S Holland

1975837 *Aligning County-Level Satellite-Derived and Ground-Based $PM_{2.5}$ Metrics to Support Policy and Monitoring in the US:* **S Acker**, T Holloway, K Stewart, A van Donkelaar, R Martin, L Kysela, C Heck

1951422 *Application of Novel Gap-Filled Aerosol Optical Depth and Data Fusion Techniques for Enhanced Surface $PM_{2.5}$ Estimates:* **J Lee**, S M Loria Salazar, H Holmes

1941216 *Discrepancies between Satellite-based and Ground-based Fire Detection: Implication for Wildfire Emissions in Alaska:* **Z Dong**, J Mao, M Stuefer, F J Meyer

1985328 *Enhancing air quality decision-making activity using NASA Earth Observations to improve air quality decision-making activity in India:* **R Kumar**, S D Ghude, S Meech, S Alessandrini, W Y Y Cheng, J Schreck, G Govardhan, P Yadav, R Jat, V Soni

1925407 *Environmental conditions of urban parks differ by census tract socioeconomic status:* **G Martin**, T K Siu, R Clark, W Klein, K Fong

1949383 *EPIDEMIA: Tools for Integrating Malaria Surveillance and Environmental Monitoring to Predict Outbreaks in Ethiopia:* **M C Wimberly**, W Jentner, D S Ebert, A Siraj, A Woldehana

1847413 *Evaluating The Integration Of Low-Cost Sensors And Satellite Observations For Assessment Of Birth Outcomes Associated with Fine Particulate Matter (PM2.5) Pollution:* **B Ramesh**, J Wing, J Gohlke, G Barboza-Salerno, L P Jayakumar, A Hyder

1958626 *Fine-scale spatiotemporal patterns of NO2 pollution and associated mortality burdens across the continental United States:* **S Y Kim**, G H Kerr, O Nawaz, S Anenberg

1958615 *From Satellites to Action: Fine-Scale Urban $PM_{2.5}$ Mapping with Deep Learning for Exposure Assessment:* **A Raj**, T Dasgupta, M Sinha, A Mitra

1904311 *From Space to Shoreline: Forecasting Vibrio Risks with Satellite Intelligence:* **A S Jutla, PhD**, B Magers, K Brumfield, J Chaves-Gonzalez, R Colwell

1870623 *Harnessing NASA Data to Guide Air Quality and Public Health Decisions:* **J Haynes**, H Chapman, L M Judd

1942663 *Integrating NASA Earth Observations, Thermal Drones, and AI to Detect Hotspots of Co-circulating Vector-Borne Pathogens in Colombia:* **J A Uelmen Jr**, J P Hernandez-Ortiz, C Ortiz, J Osorio, A Beck, J Usuga, L Perez

1963902 *Mapping Distribution of PM_{10} Malady over Mosaic, Metro-Highlands: Validation of Multi-orbit Satellite Estimates against Mass-Scale Sensors to provide Hyperlocal Concentration Estimates.:* **M Krishnan**, V Nayak, R Krishnan Sundara

1983831 *Merging Satellite and Ground-Based Measurements of Formaldehyde to Improve Exposure Assessments:* **M Kemal**

247210
Addressing the Escalating Impacts of Extreme Heat, Heat Waves, and Urban Heat Islands on Public Health: Vulnerability, Resilience, and Innovative Mitigation Strategies *(joint with A, H, NH)*

Conveners: **Yuei-An Liou**, National Central University; **Kim-Anh Nguyen**, Vietnam Academy of Science and Technology; **Shih Chun Candice Lung**, Academia Sinica

1845250 *Upgrading Slums as a Pathway to Climate Resiliency: Evaluating urban infrastructure projects impact on risk and health impacts during heatwaves:* **D O Borges Prosdocimi**, K Klima

1849149 *A New Framework for Urban Heat Island Management: Assessing the Impact of Industrial Complex-Microclimate Zones (IC-MCZ) on Urban Heat Islands:* **G Jang**, D Kim

1903512 *NASA Earth Observations to Guide Public Health Decisions:* **H Chapman**, L M Judd, J Bratburd, J Haynes

2002204 *Pixel-Perfect Prevention: Operationalizing One Health Through High-Resolution Satellite Earth Observations to Assess Heat and Waterborne Disease Risk in Eastern African Cities:* **A S Akanda**, L N Kamau, L Odhimabo, J Omae, M Nyamai, F Hossain

1947138 *Relative Humidity Influences Spatial Patterns of Urban Malaria Suitability:* **Y Jamal**, E Bump, C C Murdock, R Baharia, R Sharma, K Vaishnav, V Desai, V Kohli, A Mohanti, M Pascual, S Sharma, A Anvikar, M C Wimberly

1965211 *Social Predictors of Mosquito Abundance and WNV Positivity in Oklahoma City, 2017–2023:* **A Read**, C M B D Franca, Z Woods, N Shreffler, V Peter, D Rovito, E Podest

1935753 *Support $PM_{2.5}$ Air Quality and Public Health Management in Wildfires by Satellite Observations and Machine Learning Techniques:* **X Chen**, J Wang, Y Park, M Zhou, PhD, H Zhang, M Christiansen, L Castro Garcia

1902142 *Tracking Long-Term Air Pollution and Health Exposure in Ghana: Twenty Years of High-Resolution $PM_{2.5}$ Maps Using Satellite Data, Surface Observations, and Machine Learning:* **A Anand**, J A Amooli, D Westervelt

1950465 *Tracking Seasonal and Diurnal Variations in Nitrogen Dioxide and Formaldehyde from Space over the Northeast U.S.:* **M Tao**, A M Fiore, C R Nowlan, G Gonzalez Abad, X Liu, X Jin, Y Tian

1853883 *Survivable but Not Livable: Intensifying Global Heat Threatens Livability for Younger and Older Adults:* **L A Parsons**, J W Baldwin, O Jay, P Kalmus, H Staudmyer, J Vanos, N Wolff, G Guzman-Echavarria

1857659 *Satellites, urban heat, and environmental justice: community as the bridge between analysis and action:* **J B Fisher**, A Rivera, K Tacazon, A Cison, R Archer, PhD, GISP, A Agatep, J Douglas, S Spiegleman, A McKenery, R Fisher

1857796 *An Early Warning System for Heatwave-Induced Health Risks inChina: A Sub-Seasonal to Seasonal Perspective:* **B Zhang**, B Lu, H Chen

1860709 *Heat Stress Under Climate Change: Spatial-Temporal Projections of WBGT in Bangladesh:* **S H Rahman**, A Talukder, M Kamruzzaman

1868886 *Effects of greenspace morphology on heat-related mortality: A retrospective case-control study:* **H Wang**, W Xu, S Gholami, S Li, J Hoover, M Waller, K Ernst

1871930 *A Novel Framework for Drought Monitoring in Taiwan Using the Surface Water Availability-Temperature Index (SWATI):* **Y A Liou, PhD**, M T Thai

1878262 *Development Of A Vulnerability Index To Surface Urban Heat Island Through The Integration Of Satellite Data And Meta Population Dataset In The Urban Area Of Naples (Italy):* **A Scalabrini**, M Musacchio, M Silvestri, F Rabuffi, M F Buongiorno, A Costanzo

1878794 *Comparative Study of Urban Heat and its Vulnerability in Los Angeles and Atlanta, USA:* **S Sim**

1882659 *Occupational Heat Risk Perceptions and Behavioral Adaptation Strategies Among Outdoor Workers in Bangladesh.:* **A R Tamim**, M M Patwary, M Bardhan, M I A Badhon, M S Rahman, I C Sakib, A Iftikhar, M P Kabir, M N S Pitol, C Saha, M H E M Browning

1887951 *Improving Drought Monitoring with ARC-NET: An Attention-Based Framework for Multisource Remote Sensing Data Fusion:* **W Chang**, M T Thai, C L Kuo, J Y Liu, Y A Liou, PhD

1888305 *Micrometeorological Assessment of Outdoor Thermal Exposure in a Coastal Urban Environment: A Case Study in Corpus Christi, Texas:* **Y Huang**, L Su, S Pagadala

1896032 *Standardizing Heat Severity to Enhance U.S. Heat Warning Systems:* **A Narayanan**, D Keellings

1896173 *Modeling the Impacts of Temperature Extremes on Public Health: Ambient Temperature and Emergency Department Visits in Virginia.:* **A Sanz Gutiérrez**, B Corpuz, B F Zaitchik, J Gohlke

1900717 *Climate and Heat Projections for Africa to Enable Targeted Interventions and Improvements in Neonatal Health Outcomes:* **I Bunge**, S Dee, R Richards-Kortum, N Salim Masoud

1908338 *Scenario-Based Modeling of Japan's Land Use Futures toward 2050: Integrating Urbanization, Accessibility, and Demographic Decline:* **R WANG**, R Zhang

1910226 *Residential Thermal Exposure During Extreme Heat Events: Cooling Access, Structural Vulnerability, and Climate Risk in New Orleans:* **L Easton-Calabria**

1911655 *The Urban Dry Island Effect and its Implications for Extreme Heat Exposure: a Case Study in Baltimore, MD:* **I Horst**, A Eyni, D Waugh, B F Zaitchik

1918117 *Why Does Air Temperature Seem to Outperform More Complicated Heat-Stress Metrics?:* **Y C Lu**, D Romps

1926158 *The changing trend of heat stress vulnerability due to urbanization in Indian cities:* **R K K Choudhary**, H Sembhi, S Dey

1940505 *Heat Stress and Adverse Pregnancy Outcomes in India: Evidence from a Nationally Representative Population-Based Study:* **V Vincent**, D Darssan, S Dey, N Osborne

1944636 *Health Risks of the Vulnerable Populations in the Associations of Temperature and Multiple Health Outcomes Considering Lagged and Cumulative Health Impacts:* **S C C Lung**, J C J Yeh

1947648 *Robust Critical Temperature Projections Reveal Diminishing Heat Safety Margins Under Global Warming:* **Y Fan**, K A Mccoll

1949422 *Indoor heat exposure reduction benefits of residential air conditioning and weatherization in Massachusetts: a statewide building simulation approach:* **J Lee**, M P Fabian, I Sue Wing

1949678 *Heat or Heat Index? Exploring How Heat Metrics Impact Maternal and Child Health in the Children's HealthWatch Cohort:* **C Robbins**, L Lichtiger, Z Popp, S Coleman, M P Fabian, S Ettinger de Cuba, K Lane

1950293 *Substantially underestimated heat stress in suburban areas in the United States:* **Y Zhang**, L Zhao, T Chakraborty

1954795 *Spatio-temporal patterns in heat-related mortality associated with major heat waves across NUTS 3 regions in Europe:* **S Singh**, E Plavcová, O Lhotka, A Urban

1955357 *Evaluating Urban Roof Surface Temperature and Cooling Factors Using Airborne Remote Sensing :* **X Li**, R Wang, T Li, H Ellerman, T Awada

1960039 *Historical Redlining and the Risk of Emergency Department Visits on Hot Summer Days in Massachusetts:* **E Gause**, C Milando, Z Popp, K Kirwa, G Wellenius

1961148 *Equitable Greening and Cooling Efficiency Reduce Urban Heat Disparities Among Socioeconomically Vulnerable Communities Over Time:* **J Cao**, T McPhearson, W Zhou

1969917 *The True Cost of Heat: Evaluating Heat-Related Mortality Estimation Methods in Texas:* **A E Dessler**, J Rutt

1971348 *Building a Community Heat Vulnerability Index in Chicago, IL:* **F Hay-Chapman**, D E Horton

1971521 *Integrated Tree Canopy Expansion and Cool Roofs Can Optimize Air Temperature and Heat Exposure Reductions:* **I A Smith**, N Bates-Haus, R Engel, D Fork, D Li, E Mackres, L Moldavchuk, G Wellenius, L Hutyra

1974473 *Physiologically Informed Risk Forecasting for Heat Wave Mortality:* **A Cossairt**, L Bettencourt, J Vanos, A Joshi

1982905 *Averted Heat-Related Mortality in the United States from Air Conditioning Usage:* **L Chu**, K Akkiraju, N D Rao, R Dubrow, K Chen

1989047 *Cool Corridor Router: An Urban Heat Visualization Tool for Modeling and Minimizing Pedestrian Heat Exposure:* **H Norouzi**, M Bilik, J Lefkowitz, R Blake, C Braneon, A C Ruane

1992988 *Mapping Urban Heat, Mortality, and Cooling Feasibility: A Spatial Framework for Effective and Equitable Heat Mitigation in Cities:* **A Shreevastava**, H Druckenmiller, Q Dehaene, C Yoo, S Prasanth, G C Hulley, C Frankenberg, Y Yin

1994742 *Urban population exposure to higher temperatures under climate change and tree planting scenarios in the US Great Lakes:* **K Hardaway**, B S Hardiman

250269
Advances in Interactions of Air Quality and Public Health Using Integrated Modeling Frameworks *(joint with A, GC, SY)*

Conveners: **Yaoxian Huang**, CSU CIRA; **Yang Liu**, Emory University; **Yuqiang Zhang**, Duke University; **Ying Xiong**, Wayne State University; **Debatosh Partha**, Wayne State University

1926057 *Air Pollution and Mental Health in LMICs: Investigating the Nexus of Household and Ambient Air Pollution Among Reproductive-Aged Women:* **M M Patwary**, S Ashraf, M R Ritu

1905106 *Assessing the interplay of air pollution, genetic susceptibility, and hyperthyroidism in middle-aged and elderly populations:* **Q Zhou**, M Ramanathan, Z Zhang

2001179 *Characterizing Emissions, Chemistry, and Health Impacts of Aged Biomass Burning Smoke in Wildland Urban Interface: A Missoula, Montana Case Study:* **L Jin**, V Selimovic, D Ketcherside, L Tan, K Nauman, R J Yokelson, L Hu

1978508 *Climate Associations with Kawasaki Disease Incidence on the West Coast of the United States: Evidence for Role of Wind-blown Aerosol Trigger:* **N Copeland**, C A Shimizu, L L De Haan, J Szmuszkovicz, J Teh, N Ashouri, D E Michalik, S Gandham, V Acharya, D R Cayan, J C Burns, J A Burney

1899176 *Co-benefits of Long-term Climate Policies under the Paris Agreement for Future Global Air Quality and Human Health:* **Z Wang**, Y Zhang, Z Liu, Z Han, B Luo, B Rice, S J Smith, Y Ou, J Moyer, H C McJeon, T Glotfelty, K Mulvaney, J J West

2003944 *Community-Engaged Mapping of Environmental Hazards to Advance Public Health and Resilience in Atlanta's West End:* **F Keita**, N Jelks

1950548 *Comparing the Air Quality and Health Implications of the Inflation Reduction Act and a Net-Zero Pathway:* **N Mailloux**, E Mayfield, J Jenkins, T Holloway, J A Patz

2000078 *Evaluating Green Infrastructure Quality in Public Housing Communities: LiDAR-Based Assessment of Thermal Environment and Resident Thermal Comfort:* **X Li**, Y Liu, Y Zhang, R Brown, D Li

2002379 *How "humid" should humid heat be?:* **Q Kong**, Q Guo, M Hashizume, R Jing, X Huang, Z Wang, S Heft-Neal, M Huber, E Bendavid

2006218 *Leveraging AI and Satellite Imagery for Urban Green Space Assessment: A Decadal Analysis of Three Hanoi Parks:* **K A Nguyen**, Y A Liou, PhD

1850556 *Divergent Impacts of Air Pollution on Cardiovascular-Kidney-Metabolic Progression: Comparative Evidence from Chinese vs. British Cohorts:* **Y Shi**, Z Zhang, J Qiu, J Xue, Y Zhang, M Su, Q Zhou, S Huang, Z Liang, Y Wu, H Liang, S Biswal, M Ramanathan, K Chen, J Wang, L Zheng

1985342 *Estimating Dynamic Exposure Misclassification to Ambient Particulates using Crowdsourced Smartphone Location Data:* **M H Hasan**, H Yu, A Stuart

1988497 *Evaluating the Air Quality and Health Co-Benefits of Expanding RGGI to Pennsylvania and Virginia Using GCAM-USA and COBRA:* **N Tabassum**, K M Kennedy, Y Zhang

1964496 *Exploring the Impact of Elevated PM2.5 Exposure on Asthma-Related Emergency Department Visits in Providence, Rhode Island:* **V Chen**, M G Hastings

1927171 *Global Health Benefits of Anthropogenic Emission Reductions on $PM_{2.5}$-, O_3- and NO_2-Associated Deaths by Sector, City and Time of Day:* **P Wiecko**, D K Henze

1912548 *Global Trade and the Unequal Burden of Air Pollution Mortality (1992–2015):* **S Wang**, C Tessum

1925745 *Growing Impacts of Fire Smoke on Ozone Pollution and Associated Mortality Burden in the United States:* **Y Li**, X Jin, M Kelp, M Qiu, H Sun

1959162 *Impacts of Technology Uncertainties and Policy Strategies on Future Air Quality and Health Effects in The US:* **C Campos**, W Peng, J Shiwang, A Zhao, Y R Cui

1994991 *INTEGRATING METHANE AND CO-POLLUTANT EXPOSURE FROM OIL AND GAS TO INFORM EVIDENCE-BASED POLICY APPLICATIONS:* **M Weisner**, P Varner, V Southerland, J L Collett Jr, I T Ku, D Pan, W Zhang, K Robinson, L M McKenzie

1959068 *Investigating the Short-Term Effects of Nitrogen Dioxide on Pediatric Asthma using New Satellite Data:* **K Fong**, T K Siu, G Martin

1955613 *Learning How Acute Air Quality Deterioration Exacerbates Pediatric Asthma in Hampton Roads, Virginia:* **J Colen**, E Werner, H Richter, D McSpadden, A Quinn, J Santos, M J Darling, M Schram, M M Gleason

1955825 *Location-Specific Assessment of $PM_{2.5}$-Related Health Benefits from Wind and Solar Energy Development in the United States:* **Y M Kim**, L Corso, J Fargione, E Kalies, N Steinsultz, D Majka, C Tessum, H Richardson, M W Tessum, S Lowry

1964262 *Modeling Daily Taxa-specific Pollen at 1-km Resolution in Atlanta, GA, Using Dispersion Model and Machine Learning:* **X Zhang**, Y Saburi, W Wang, Z Jin, H Paduch, Y Liu

1884798 *Nationwide Air Pollution Source Impacts for Long-Term Regulatory Accountability and Exposure Assessment:* **L Henneman**, T Zhang, S Hussain

1886267 *Occupational Exposure to Marble Dust: Global Systematic Review of Chronic Health Impacts, Prognosis, and Preventive Strategies:* **F Ahmed**, I A Ahmed

1997452 *Quantifying the Health Co-Benefits of Air Pollutant Reductions From the Mass Save Program:* **B Sousa**, J Buonocore, M P Fabian, E Ryan, C Cleveland

251389
Advancing Environmental Risk Assessment for Early Warning Through Integrated Remote Sensing Technologies, Data Networks, Chemical Analysis and Machine Learning Tools

Conveners: **Sunil Kumar**, University of Florida; **Jesse Bell**, University of Nebraska Medical Center; **Katherine Deliz Quinones**, University of Florida

1857025 *Abiotic and Biotic Transformation of PFAS Precursors Under Dynamic Oxic-Anoxic Transition Zones:* **D Wang**, C Wang

1878109 *Spatial Correlation Between the Saharan Oscillation Index and Climate Variability to Predict Extreme Dust Pollution Using Machine Learning:* **Y Tebbaai**

1999283 *RECENT ADVANCES IN EXPOSURE RECONSTRUCTION FOR ENVIRONMENTAL HEALTH RESEARCH:* **M Jerrett**

1863977 *Regional Differentiation Promotion Strategies for New Energy Vehicles in China and Assessment of Their Environmental Health Benefits:* **Y Yang**, M Liu

1962275 *The Influence of Spatial Resolution on Power Systems Modeling and the Health and Equity Impacts of Power Plant Emissions:* **B Meotti**, J Johnson, F Garcia-Menendez

1898895 *Traffic Impacts on Local Air Quality of the Claiborne Corridor in New Orleans, LA:* **M Mohamed**, A Katner, M S Rahman, D Harrington, S Cuccia, A Stelly, E Oral

1851852 *Two-Stage Interrupted Time Series Analysis with Machine Learning: Evaluating the Health Effects of the 2018 Wildfire Smoke Event in San Francisco County as a Case Study:* **Y Ma**, A Dey, G Carrasco-Escobar, C Han, F Rerolle, T Benmarhnia

1931651 *Wildland Fire-Related Smoke $PM_{2.5}$ and Cardiovascular Disease ED Visits in the Western United States:* **Y Liu**, L Li, W Wang, H H Chang, A Alonso

1880416 *A Machine Learning Approach to Identify Spatio-Environmental Drivers of PFAS Contamination in Soils:* **S Santiago Borrés**, S Kumar, A Sills, M González Fernández, A S Jutla, PhD, J C J Bonzongo, E Coker, D Agdas, J Bowden, K Deliz Quinones

1896893 *Assessing Soil Health Impacts of Diesel and Plastic Contamination via Reflectance Spectroscopy:* **A Ghannam**, N Tziolas, V Kankarla Dr

1916629 *Machine Learning-Based Health Risk Assessment of Priority Pharmaceuticals in China's Surface Waters:* **J Li**

1928488 *Legacy-Informed Copper Contamination Risk Mapping Using Hyperspectral Remote Sensing and Machine Learning:* **H Ding**, S Cavazzi Dr, A Al-Tabbaa Prof

1948666 *Spatial Correlation of PFAS Concentrations with Precipitation and Surface Runoff Using GIS-Based Analysis:* **E Deliz**, A S Jutla, PhD, S Kumar

2004945 *Mapping Flood Risk Zones Using Remote Sensing and Python-Based GIS Tools: A Case Study from Northern India:* **J Sharma**

248863

Air Pollution Health Risk in a Changing Climate *(joint with A, GC)*

Conveners: **Lucas Henneman**, George Mason University Fairfax; **Yunyao Li**, University of Texas at Arlington; **Kelvin Fong**, Dalhousie University; **Rebecca Saari**, Massachusetts Institute of Technology; **Qindan Zhu**, Peking University

1895903 *Air Pollution and Respiratory Health: Assessing PM2.5 Impacts on Children in Delhi's Urban Slums:* **S Ahmad**

1973804 *Air pollution, heat, and adverse human health outcomes: An interdisciplinary climate change scoping review:* **Y J McDonald**, A Podraza, K Cross, E Paik, F Alvarez-Carrascal, V Powell, A Irvin, J M Gilligan

1977413 *Ambient air pollution during pregnancy and offspring cerebral palsy:* **H Zhuo**, B Ritz, J G Su, J Warren, Z Liew

1896275 *Climate change, air pollution and health: connections amid complexity:* **P L Kinney**

1917336 *Deadly Synergy: How Extreme Heat and Air Pollution Amplify Mortality Risks in Urban India – A GeoHealth Perspective:* **W Wajid**

1897382 *Estimating the Effect of Precipitation on Particulate Matter Under Normal and Wildfire Conditions Across the U.S.:* **D Neupane**, L Henneman, V Maggioni

1850689 *Health status assessment of people adjacent to temporary waste disposal sites in Khulna city, Bangladesh:* **A T Shammi**, M R Golder, N Hassan, H Molla, S Saiful

1894080 *Impact of urban fires on air quality in the Los Angeles basin from the Eaton and Palisades fire as seen from TROPESS:* **J Laughner**, F Werner, M D Thill, L Kuai, K Miyazaki, Z Pierrat, C Percival, K W Bowman

1865551 *Impact of wildfire smoke waves on long-term exposure to low-level fine particulate matter and cardiovascular hospitalizations in the United States:* **K Chen**, S Zhang, Y Wang, J Wei, H M Krumholz, Y Lu

252804

Arctic GeoHealth: Monitoring, assessing, and adapting *(joint with C)*

Conveners: **Morgan Gorris**, University of California Irvine; **Kishla Askins**,

1889641 *Linking wildfire emissions, air pollution, and premature deaths in an urbanizing Himalayan basin:* **S Kuikel**, H K Paudel, D Kuinkel, B Pokharel

1884528 *Mapping the invisible: Health Risk Assessment of Air Toxins in the Try-Valley, California.:* **F Kasaj**, A Gour

1913814 *Quantifying the temperature-induced $PM_{2.5}$ changes and associated mortality burden in the US:* **M Qiu**, A I Wilson, M Burke

1989746 *Scenario-Based Analysis of Heterogeneous Airline Emissions, Costs, and Health Impacts:* **J Wang**, H Zhang, P Wang, J Yu, F Lu

2001793 *Source Apportionment of $PM_{2.5}$ across Contiguous United States for 2011-2020:* **S Hussain**, T Zhang, L Henneman

1934448 *Source-Specific $PM_{2.5}$ Exposure and Atrial Fibrillation Risk in U.S. Older Adults: A Nationwide Cohort Study:* **Q Zhu**, H Hao, Y Deng, C Liu Dr, Y Sun, Y Liu

1918189 *The Hidden Cost of Crop Burning: Linking Agricultural Fires to Respiratory Illnesses in Rural India:* **M Mantasha**

1959155 *The Utility of Climate TRACE in Environmental Health Research: An Investigation of Asthma Risk and Exposure to Pollution:* **M Robinette**, G Collins, M Pekala, T So, Z Doctor, D Moore, K Raniga, G McCormick, E Reilly

2005124 *Tracking Temperature Rise in My City: A Student-Led Climate Change Study from Two Locations in Roorkee, Uttarakhand:* **I Fatima**

1919138 *Wildfire exposure and health outcomes: An umbrella review of systematic reviews and meta-analyses:* **M Bardhan**, M M Patwary, M R Ritu, M H E M Browning, P Dadvand, M L Bell, M A Rahman, T Astell Burt, M J Z Sakhvidi, O McAnirlin

1896680 *Wildfire Smoke and Asthma in Uttarakhand: Integrating Satellite Data and Epidemiological Models for Health Risk Assessment:* **A Asra**

252531

Atmospheric Dust: Advances in Modeling, Ground-Based Validation, and Human-Centered Impacts. *(joint with A)*

Conveners: **Emily Faber**, University of Maryland Baltimore County; **Daniel Tong**, Cooperative Institute for Climate and Satellites University of Maryland; **Karin Ardon-Dryer**, Texas Tech University; **Robert Van Pelt**, USDA/ARS; **Emily Faber**, University of Maryland Baltimore County

1847959 *China Dominated the Contribution of Dust Emissions in East Asia in the 21st Century:* **Q Pan**, J J Li, C Wu, H Xiao

1985913 *Combined Lidar-Polarimeter Aerosol Retrievals using Spheroidal and Hexahedral Particle Shape Models with Data from the ORACLES Field Campaigns:* **G Regmi**, R Espinosa, J V Martins, M Momoi, A Lopatin, O Dubovik, M Saito

1864912 *Drivers of Emerging Transboundary Dust Hazards Across the US-Mexico Border:* **S Dhital**, N Webb, T E Gill, R Langford, A Granados-Olivas, M D Acosta, M Kaplan

1993485 *DustCast: An Ensemble Machine Learning Model for Monthly Atmospheric Dust Aerosol Forecasting Across the Arabian Peninsula:* **C Ramos**, B Gaertner, S J Greybush

249143

Beyond the Sum: Quantifying Synergies Between Heat and Co-Pollutants (e.g., $PM_{2.5}$, O_3) in Urban Systems through Interdisciplinary Sciences *(joint with A, GC, SY)*

Conveners: **Alamin Molla**, Arizona State University; **Yang Liu**, Emory University; **David Sailor**, Arizona State University; **Yun Hang**, University of Texas Health Science Center Houston

1990137 *Linking Urban Heat, Air Quality, and Health-Social Variables in New York City Using Satellite and Ground Observations:* **Y Vargas Magana**, C Wong, H Norouzi, R Blake, M D Pearce, L M Gomez

1975435 *A high-resolution, people-centric approach to mitigating urban heat and air pollution impacts in West Africa:* **A Correas**, N Kunz, A K Gupta, P A Churchyard, M J Sambou

1894576 *Analyzing the Data center impact on urban heat island and air quality:* **C P Yang**, L E Ortiz, F Zhang, J Krall

1851305 *Citizen Science Coupled with Machine Learning to Quantify Green-Blue Infrastructure Cooling Potential in Maricopa County, Arizona.:* **A Molla**, K Lamer, D Sailor

1957169 *Enzyme-induced Calcite Precipitation: A Biochemical Approach to Mitigate Dust Nuisance and Strength Enhancement of Fly Ash Deposits:* **N T R**, D N Arnepalli

1964587 *Evaluating the frequency, size, and duration of storms in the Southwest and South Central United States using satellite and surface data:* **J McGinnis**, B Ford, S D Miller, H Zhu, E V Fischer, J R Pierce

2002367 *Spatiotemporal Downscaling of Satellite-Based Desert Dust for Health Risk Analysis in the Middle East:* **M Franklin, PhD**, B Alahmad, E Garshick, E Choma, A Roche, P Koutrakis

1879894 *The contribution of agricultural and other anthropogenic dust emissions to coarse particulate matter concentrations in the U.S.:* **H Zhu**, J R Pierce, J McGinnis, A Maas, J Crooks, J Bayham

1931697 *The Key Drivers of Localized Dust Transport in Urban Ecosystems:* **M Williams**, S Melzer, R Taylor, G Kelly

1895097 *Unraveling Dust Event Dynamics Along I-10 at Lordsburg Playa: Temporal Patterns and Driving Mechanisms:* **P Zhang**, B L Edwards, R Wojcikiewicz, G Iorliam

1967023 *Wildfire, restoration, and post-wildfire rehabilitation treatment effects on wind erosion in the Great Basin:* **R Treminio**, N Webb, B L Edwards, B A Newingham, C A Houdeshell, M Garbowski, D DuBois, A Faist, E Kachergis

1920766 *Effect Modification of Air Pollution-Related Mortality by Heat Waves: Evidence from 272 Chinese Cities:* **W Sun**, P Yin, C Xu, X Lin, S Shi, X Li, J Chen, Y Jiang, X Meng, H Kan, M Zhou

2003214 *Heat and Fine Particulate Matter Exposure among U.S. Older Adults by Race/Ethnicity: a Multi-Scale Investigation of Inequity:* **H Malak**, E Ackert

1987991 *In-vehicle CO_2 Accumulation Over Time Under the Extreme Heat Conditions of Arizona: Implications for Human Health:* **A Rana**, J Andino, T Young

1861234 *Predicting Indoor Air Quality in Naturally Ventilated University Cafeterias Using Regression-Based Machine Learning Model:* **D M Dipta**, M F A Shafik, M Jakaria, M N Uddin, M A H Mukib, M N Rahman, T U A Jengi, M T Hasan, G M Rahad, M P Moni, M Mony, L Jamal, F Tasneem, N N Oyshi

1926105 *Spatial Planning of Urban Vegetation: A Sensitivity Analysis of Prioritization Indicators in Phoenix, Arizona:* **M Rahman**, S Meerow, C Macharia, C He, J Boehnert, A L Dugger, T M Hopson, O Wilhelmi

1993623 *Temporal clustering of air pollution and heat wave events at domestic U.S. Military facilities:* **I Buller**, N MacNell, B Goldberg, G Hamra, W B Jackson II

1845802 *Understanding Heat, Air Pollution, and Asthma at Neighborhood Scale: Ongoing Work from the Baltimore Social-Environmental Collaborative:* **B F Zaitchik**, B Corpuz, E Scott, D Waugh, K Koehler, P F DeCarlo, B Nault, M S Waring, R Adhikari, A Balasubramanian, W Zuo, S Zeger, M McCormack

249472
Characterizing wildland fire smoke: estimating exposure and associated impacts to public health *(joint with A, GC, NH, SY)*

Conveners: **Jennifer Stowell**, Boston University School of Public Health; **Miriam Marlier**, University of California Los Angeles; **Minghao Qiu**, Stony Brook University; **Tina Liu**, University of British Columbia; **Claire Schollaert**, University of Washington Seattle Campus

1975039 *A Scalable, Daily Wildfire Emissions and Fire Activity Inventory to Support Air Quality Management:* **L Rosenthal**, T D McCabe, E Orland, Z Becker, S Coffield, R Scholten, D C Morton, J T Randerson, T Liu, A Huang

1925075 *Advancing Wildfire Smoke Forecasting and Exposure Assessment Across the CONUS Using Multi-Model Intercomparison and Ensemble Techniques:* **Y Li**, D Tong, P Xian, K Cromar, B Baker, R Ahmadov, A Darmenov, E J Hyer, D Figueras, J Chen

1966668 *Airflow-Driven Oxidation of Chromium in Wildfire Impacted Soils: Implications for Cr(VI) Formation and Human Exposure Risk:* **B Gonzalez**, C Avila

1940533 *Chemical measurements in wildfire smoke at the Mount Bachelor Observatory: a mountaintop research station in one of the smokiest regions of the United States:* **L Gratz**, D A Jaffe, N Bernays, C Bauer, N Hill

1934633 *Chemical Signatures and Exposure Implications of Smoke from Fires at the Wildland Urban Interface:* **R Farley**, J E Lee, M K Dubey, A C Aiken

1974328 *Comparing Air Quality Impacts of Land Management Scenarios to Mitigate Future Wildfire Activity in California:* **C Bekker**, C Schollaert, M E Marlier, PhD

1927959 *Competing Health Impacts of Smoke from Wildfires, Agricultural Burning, and Prescribed Fires During California Fire Seasons:* **M Kelp**, M Qiu, S Heft-Neal, R Sandoval, C Schollaert, M E Marlier, PhD, M Burke, N S Diffenbaugh

1970901 *Constraining the Partitioning of Wildfire-Derived Reactive Oxidized Nitrogen with GEOS-Chem and WE-CAN Airborne Observations:* **M Hossain**, H M Horowitz

1970272 *Urban Forests and Their Influence on Pollution Levels Across Urban Landscapes:* **K Baillargeon**, A Young

1975145 *Current and Future Wildfire-driven Educational Losses in California:* **S J Silva**, E Garcia, S Eckel

1995996 *Data Assimilation of Wildfire Smoke and Monitoring Network Data to Estimate Hourly $PM_{2.5}$ Across California (2018–2023):* **R Sugrue**, S White, E James, H Wang, N Thakur, F K Chow

1951581 *Developing Data-driven Wildfire Smoke Detection Using Wavelet-decomposed Surface Observations and Machine Learning:* **M Qi**, Z Jin, Z Chi, D Zhang, K Xu, D Pruthi, A Xu, W Wang, Y Liu

1932721 *Differential effects of wildfire smoke $PM_{2.5}$ exposure on respiratory disease emergency department visits in the western United States:* **Y Liu**, W Wang, L Li, Q Zhu, R D'Souza, D Zhang, H Zhang, S E Sarnat, H H Chang, A Alonso

1926117 *Downwind Air Quality Impacts and Fireline Exposure of Western U.S. Prescribed Fire Smoke:* **W Permar**, L Tan, J Knudsen, E Cope, J Tepsa, V Hoff, R J Yokelson, C Seielstad, L Queen, L Hu

1973623 *Envisioning a Multi-Approach Ensemble Method to Estimate Wildland Fire Smoke Exposure for the Contiguous United States:* **S Dahal**, H Holmes, S Faulstich, K Kaur, J Lee, C Riss, M Loría-Salazar, K Kelly, S Karmakar, M Strickland

1918214 *Evaluating and improving modeled smoke vertical distribution and surface concentrations for the 2020 western US wildfires:* **M Arnold**, P Saide, K Miyazaki, K Bowman, J Schnell, R Ahmadov, X Chen, J Wang, L Thapa, C Howes, O Neyra

1930513 *Examining Language Disparities Among English and Spanish Speakers in Wildfire Smoke Events:* **J Trujillo-Falcón**, R Salamon, J Ripberger, A Thomas, M Martínez, M Mendez

1870308 *Fine spatial and temporal scale fuel and emissions inventories for the Eaton and Palisades Wildland Urban Interface (WUI) fires:* **C Schissel**, D Allen, Y Kimura, S N Stokes, E Thompson, M Meyer, M Kleeman, S M Raffuse

1888072 *Fire-line Characterization of Prescribed Fire Emissions with Mobile Laboratory Observations:* **L Tan**, W Permar, J Knudsen, E Cope, J Tepsa, V Hoff, R J Yokelson, C Seielstad, L Queen, L Hu

1984183 *Ground-level wildfire smoke quantification with low-cost sensors, geostationary satellites, and machine learning:* **N R Pavlovic**, D King, F Lurmann

1991323 *High-Resolution Wildfire Smoke Exposure Analysis in Butte County, California (2020): Linking Black Carbon and $PM_{2.5}$ to Social Vulnerability and Cancer Mortality:* **K Phung**, Y Hang

1857598 *Impact of wildland fires on surface particulate matter and ozone:* **D A Jaffe**, H Lee

1988946 *Integrating Observations and Models to Quantify Wildfire Smoke Contributions to PM2.5 Pollution, Exceedances of Air Quality Standards, and Health Impacts across US counties:* **Y Xie**, D L Mauzerall, M Lin, J Angoy, B Ford, J McGinnis, J R Pierce, L W Horowitz, T Liu, M Zhou, B Lyu, H Khan

1973526 *Leveraging forest and fire ecological modeling outputs to estimate emissions and air pollution impacts of wildland fires across the western U.S.:* **C Schollaert**, W Hansen, M Sandor, P Williams, M E Marlier, PhD

1857371 *Linking Emissions to Prescribed Fire Characteristics:* **A Guth**, M Dauner, L E Loudermilk, E Coffey, C M Hoffman, P Hamlington, M Hannigan

252369
Chemicals and Climate Change: Forecasting Contaminant Exposure Under Changing Global Hydrology and Hydrodynamics *(joint with EP)*

Conveners: **Joshua Ahmed**, Organization Not Listed; **Kate Spencer**, Queen Mary, University of London; **John MacDonald**, Department of Geoscience, National Taiwan University; **Joshua Ahmed**, Organization Not Listed

1890259 *Munitions dumped at sea – corrosion and degradation in response to climate change:* **J Beldowski**, A Jędruch, J Jakacki, PhD, S Popiel, J Nawała, A Gordon, M Brenner, P Vanninen, J Fabisiak

1896860 *Soil Salinity and Food Security in Sharanpur district: GeoHealth Impacts of Coastal Agriculture on Rural Communities:* **S Sahin**

1917733 *From Field to Fork: Satellite Remote Sensing Reveals Pesticide Hotspots in India's Agricultural Watersheds and Their Public Health Implications:* **S Sumayya**

1918466 *The Ganges Crisis: Tracking Antibiotic Resistance Genes in River Sediments and Their Threat to Human Health:* **S Sajid**

1920007 *Monsoon-Induced Hydrological Changes and Waterborne Pathogen Risks in Rural Indian Watersheds:* **A Ali**

1856260 *Potential transport pathways of Black carbon, Organic carbon, and $PM_{2.5}$ from forest fires in Italy (2008–2024): A cluster analysis of HYSPLIT forward trajectories:* **L Malytska**, M V Chiriacò

1897692 *Quantifying Wildfire Contributions to Ambient Polycyclic Aromatic Hydrocarbon (PAH) Levels over North America Using a Chemical Transport Model:* **M J Islam**, A U I Zarrah, J Meng

1963703 *The Presence of Pollutants After Wildland Urban Interface Fires: Los Angeles 2025:* **A Kyi**, C Y Chao, D Sung, K Konon, E Deveraux, S Zhai, L El Khoury, H Chen, C H Lin, A Neville, P Misztal, Y Zhu, D Allen, L Hildebrandt Ruiz

1862386 *Volatile Organic Compound Emissions from Controlled Burns of Southeastern Fuel Beds:* **A Marcotte**, R Poland, G D Smith, R Saleh, J O'Brien

1850995 *Wildfire Smoke and the Co-Occurrence of $PM_{2.5}$ and Ozone Extremes Across the Continental United States: A Bayesian Spatiotemporal Analysis:* **M Yu**, S Riadi, S Sauda, S Zhang

1920888 *Monsoon-Driven Flooding in Uttarakhand: Hydrological Drivers and Socioeconomic Impacts in the Himalayan Region:* **F Baby**

1921895 *Evolution of Modelling Approaches for Assessing Potential Contamination from Dumped Chemical Munitions in the Baltic Sea:* **J Jakacki, PhD**, A Jędruch, M Muzyka, A Przyborska, J Bełdowski

1942766 *Automobile-Induced Oil & Grease Contaminants in Water and Sediment of a Himalayan River:* **S Rohaun**, H V Kulkarni, A Giri

1972437 *Forecasting Future Contaminant Risk from Historic Coastal Landfill Sites in the UK:* **J Ahmed**, H Wang, L Eldridge, K L Spencer, S W D Grieve, B A Newman, J MacDonald

1980007 *The impact of sea-level and groundwater rise on indoor exposure to volatile organic compounds near contaminated sites in the San Francisco Bay Area:* **E Lasky**, K Hill, L Davar, L Dillon, C Pickett, S Sacoolas, K M Befus, J Jacobs, G Griggs

1990989 *Hydrogeochemical and Isotopic Evaluation of Groundwater in the Ganges-Jamuna Floodplain Aquifers, Bangladesh:* **M Moniruzzaman**

1996763 *Analyzing Storm Surge Vulnerability of Hazardous Material Sites with Simulated Storm Surge Data and Hurricane Forecasts:* **J Sollers**, A Hoffman-Hall

252189
Compound Climate Hazards and Health Risks
(joint with NH)

Conveners: **Miriam Marlier**, University of California Los Angeles; **Joseph Wilkins**, Howard University; **Claire Schollaert**, University of Washington Seattle Campus; **Yiqun Ma**, University of California San Diego

1917034 *A Multi Country Analysis of Resiliency to Climate Driven Malaria Risk:* **M Kowalcyk**, M Elling, K B Karnauskas, A M Mwinde, D Mategula, J Chirombo, J Colborn, R McCann, A Buchwald, B Candrinho

1961168 *A Multi-country Analysis of Floods and Mortality in 1,374 Latin American Municipalities, with Modification by Age, Sex, and Features of the Urban Environment:* **J Kephart**, H Jardel, J C Figueroa, U Bilal, W T Caiaffa, N Gouveia, L M Cárdenas-Cárdenas, L Baldovino-Chiquillo, O L Sarmiento, A V Diez Roux

1965257 *Algae, Climate and Health: Tracing Metal Accumulation in Sargassum Across the Tropical Atlantic:* **J Kamau-Weng**, C Chang, K Acosta, A Basu, R Glabonjat, M Rodrigue, V Pieribone, J I Goes

1958423 *An Exploration of Expansive Environmental Conditions on the Temperature–Preterm Birth Relationship Among Black Birthing Individuals in North Carolina, 2000–2020:* **B Wooten**

1896109 *Arsenic Contamination in delhi: Evaluating Long-Term Health Impacts and Community-Based Mitigation Strategies:* **Z Rizwan**

1963511 *Assessing Spatiotemporal Disparities in Household-Level Power Outage Events Across Southern California:* **Y Wang**, L Zhang, K Sanders

1935757 *Assessing the Socio-Ecological Impacts of Climate Change on India's Coastal Ecosystems: A Case Study Approach:* **N Nayyar**

1979622 *Climate-related Hazards and Toxic Layering in Environmental Justice Mining Communities: Participatory Exposure Science to Address Compounding Risks:* **M Ramirez-Andreotta**, Z A Alqattan, G Chukwuonye, C Jones, M Jones

1865436 *Compound climate extreme events and public health: A scoping review:* **S Mathews**, C Walker, J Madrigano

1915223 *Compound Climate Hazards and Maternal-Child Health: Cyclone Exposure During Pregnancy in Coastal Bangladesh:* **M R Islam**, L T K Purnata, F A Mishu, M H Rahman, F Rahman, N Tabassum, S B Murshed, Shampa, A I Chowdhury, S Haque, M Salehin

1870154 *Developing an Early Childhood Environmental Health Vulnerability Index to Assess Cumulative Health Impacts Across U.S. Counties (2019–2023):* **S Liu**, A Yang, D Horm, M Zhu, C Cai

1880534 *Dual exposure to power outages and wildfire $PM_{2.5}$ in California among vulnerable populations:* **L Wilner**, C Jones-Ngo, T Benmarhnia, J Casey

1893751 *Elevated oxygen partial pressure reduces population exposure to hypoxia over the Qinghai-Tibet Plateau:* **Y Chen**

2003692 *Evaluating how micro-climate and water quality parameters influence the severity of kidney stone disease: A case study from Sri Lanka:* **A Mohanavelu**, K Osman, C Ganesan, A C Pao

1947287 *Evaluation of Risk Reduction Effect of Cold Wave Adaptation Policy:* **S Lee**, H Yoon

1975307 *Extreme Locust Attacks Worsening Socioeconomic Vulnerability in India:* **I Palandurkar**, E Pakhtigian

1956089 *Future Burden of Temperature-Related Mortality in the Czech Republic Under Climate and Demographic Change:* **F Naz**, A Urban, A M Vicedo-Cabrera

1900248 *Global compound effects of humid heat and air pollution exposure on infant mortality:* **K McMahon**, K Baylis, C C Funk, S Sweeney

1874710 *Global Prioritization of Modifiable Cancer Risk Factors Using Machine Learning and GBD Data, 2005–2019:* **X Wu**, J Zhang

1988087 *Groundwater Contamination and Emerging Health Risks: A Case Study from the Indo-Yamuna River, Delhi:* **S Salauddin**

1866441 *Heatwaves enable wildfire activity and smoke impacts in the western United States:* **D A Kalashnikov**, J T Abatzoglou, E L Williams, C Yin, M Gurazada, M Kumar, A Thomas, E Precious

1962467 *HyEco: An Integrated Hydrodynamic–Ecological Framework to Unveil Health Risks from Contaminated Urban Floodwaters During Unprecedented Climate Extremes:* **R Deopa, PhD**, M P Mohanty

1998533 *Increased Risk of Intimate Partner Violence Following Compound Extreme Weather Events: Evidence from 16 Low- and Middle-Income Countries:* **L Goldberg**, G Wong-Parodi, M Ranganathan

1903965 *Mapping Micro-Scale Heat Risk in New York City: A Fine-Grained Index Incorporating Adaptive Capacity:* **M Wei**

1926561 *Maternal Exposure to Artificial Light at Night (ALAN) and Adverse Pregnancy and Birth Outcomes: A Systematic Review with Meta-analysis:* **S M Billah**, A L Parvin, M M Patwary, T Baree Tuna

2000569 *Mortality risk from compound exposure to fire PM2.5 and extreme heat in the contiguous United States:* **L Chu**, K Chen, J Wei

1998557 *On the move: Understanding climate-related health risks to nomadic pastoralists:* **D Singh**, D O Omia, A Pisor, E Osoro, N Kariuki

1966315 *Power Outages And Public Health: Mapping Compounding Climate Risks Across U.S. Counties:* **H Dashnyam**, S Jia

247685
Computational Methods and Tools for Air Quality Exposure Assessments and Solutions

(cosponsored by ISEE: International Society of Environmental Epidemiology) *(joint with A, GC)*

Conveners: **Yuzhou Wang**, University of California Berkeley; **Srinidhi Balasubramanian**, University of Illinois at Urbana Champaign; **Christopher Tessum**, Organization Not Listed; **Yuqiang Zhang**, Duke University; **Yuzhou Wang**, University of California Berkeley

1979823 *A Green's Function Approach to Black Carbon--Ensembles of Policy Analysis in Southeast Asia:* **L Freese**, C Springer, S D Eastham, N E Selin

1925976 *A Computational Framework for Modeling Air Quality Exposure: From Outdoor to Indoor Environments:* **J Shen**, M Usmani

1992752 *A Hybrid CMAQ-Graph Neural Network Model for High Resolution $PM_{2.5}$ Field Generation over the Korean Peninsula:* **D Choi**, J B Lee, S H Han, J Y Lee, J G Kang, H Y Yun

1921897 *A Microscale Chemical Transport Model Simulation of an Ozone Episode in Detroit, Michigan:* **E P Olaguer Jr**

1908396 *Applying machine learning and statistical modeling approaches to remote sensing observations for inferring surface-level NO_2:* **M O Nawaz**, V Southerland, D E Horton, V Lang, S Anenberg, D L Goldberg, G H Kerr

1920123 *Attributing Interstate Air Pollution: An Airshed Approach:* **W Liao**, P Crippa, R Marcantonio

1897470 *Constraining Black Carbon Emissions in California Using Log-transformed Bayesian Inversion:* **J Zhang**, L Jin, Q Ying, S E Neyestani, X Zhang, J Zhang, T Ho, C Preble, T Kirchstetter, X Xu, A Spurlock, H Breunig, J Butler

1939091 *Contributions of NO_x and VCP Emissions to Nonlinear Air Pollution Formation and Acute Health Effects Through Higher-Order Sensitivity Analysis with CMAQ-hyd:* **J Liu**, S Capps

1966935 *Rainfall-Induced Hydroplaning Risk Hotspots in the Continental United States:* **K A Salvi**, M Kumar

1973541 *Resilience, Recovery, and Response: A Four-Pronged Comparative Analysis of Community Needs Following Severe Weather Events:* **L Currier**, E Cole, S E Scales, K Ellis, J Fazio, K Kintziger, J First, R Maley

1847892 *Resilience-based adaptation strategies towards floods:* **H Shi**, T Wang, Z Zhang

1932073 *Data-Driven $PM_{2.5}$ Predictions and Health Assessment at 1 km Resolution Across the Contiguous United States:* **Z Qu**, K Fan

1867951 *Developing a Framework to Assess the Co-Benefits of Local Mitigation Action Plans: insights from the EU Covenant of Mayors initiative:* **E Pisoni**, S Zauli, F Monforti-Ferrario, J Bastos, L Valentini, M Giulia Baldi, G Melica

1968431 *Developing an interdisciplinary modeling pipeline to study health implications of wildfire smoke transport over the United States:* **M Park**, S P Urbanski, H Emamipour, A Collins, M Kreider, J Fargione, R Houtman, S Spawn-Lee, A G Kamoske, C Tessum, K Davis, K Riley, S Anderson, S Barndt, K Ordonez

1903333 *Development and Application of a Symbolic Equation-Based Reduced-Complexity Atmospheric Chemical Transport Model:* **J Liu**, C Rackauckas, C Tessum

1866596 *Dynamic Exposure Assessment of Fine Particulate Matter across Multiple Traffic Microenvironments in a Chinese Megacity:* **X Chen**, R WU, S Zhang

2001673 *Emissions and Air Quality Modeling for the Community Health and Air Quality Implications of Refinery Retrofits and Retirements (CHAIRS) Project:* **C I Efstathiou**

1984325 *Enhancing Air Quality Forecasts with Open-Source AP4 Model Updates:* **R Rosen**, T W Davis, N Muller, M Whiston, M Jamieson, A Curtright

1941169 *Enhancing PM2.5 Prediction with Machine Learning: Assessment of RandomForest Models with Standard and Optuna-Optimized Settings in Kerala, India:* **T J Mathew**, G Nair L

1971377 *Evaluating simulated $PM_{2.5}$ sensitivity to uncertainties in emissions inventories and secondary organic aerosol chemistry using GEOS-Chem:* **T Clarizio**, H M Horowitz

1897180 *Examining changes in city-scale NO_x, $PM_{2.5}$, and CO emissions at 1 km resolution by diesel, gasoline, and electric vehicles:* **X Shan**, S Hussain, L Henneman

2000704 *Exploring solutions to heavy-duty vehicle air pollution using the SMOKE-MOVES-WRF-CMAQ modeling framework at high resolution:* **D E Horton**, V Lang, D Partha

1975588 *Four-decade (1980–2022) Surface Ozone Concentrations across the Contiguous United States: Fine-Resolution Estimates and Urban-Rural Exposure Patterns:* **L Chu**, R Liu, N C Deziel, K Chen

1946463 *From Watts to Wheels: Comparing electrification pathways of light- and heavy-duty vehicles in the U.S. Midwest – assessing air quality, public health, and equity outcomes:* **V Lang**, S F Camilleri, A Montgomery, M A Visa, J Schnell, M Janssen, Z Adelman, S Anenberg, E Grubert, D E Horton

1965009 *High Resolution Air Pollution Monitoring in Louisiana Through Satellite, Sensor, and Machine Learning Integration:* **A Murray**, A Kolker, K Kirshenbaum, D A Hughes

1866892 *High Resolution Air Quality Refinement Using Multi-Domain Nesting and Deep U-Net Bias Correction:* **W Zhang**, A K H Lau

1869083 *High-resolution estimates of source contributions to $PM_{2.5}$, O_3, and NO_2 health burdens worldwide.:* **D K Henze**, O Nawaz, P Wiecko, J Choi, Y Gu

1902626 *High-Resolution $PM_{2.5}$ Exposure Assessment of Large Scale Deployment of Biomass Distributed Generation in California Using InMAP:* **X Zhang**, S Smith, Y Wang, S Nordahl, H Breunig, C D Scown, J Zhang, L Jin

1860340 *Identification of air pollution control areas for the management of extreme $PM_{2.5}$ regions in India:* **N Barman**, L Rojas Mendoza, Y Wang, PhD, Z Arub, S Saxena, J Apte, J Marshall, S Balasubramanian, C Venkataraman

249524
Data to Action: Bridging the Gap Between Data Developers and Users *(joint with SY)*

Conveners: **Sofia Bisogno**, PSE Healthy Energy; **Kelsey Bilsback**, PSE Healthy Energy; **Sebastian Rowland**, PSE Healthy Energy

1977412 *Collaborative Community-Driven Storymaps for Environmental Justice Advocacy:* **T Natter**, M Salgado, A Sullivan, J Joseph

1985024 *InMAP-Based Intercomparison of Simulated $PM_{2.5}$ and NO_x Concentrations over the Greater Chicago Region Using Four Different On-Road Emission Estimates:* **M Santiago**, V Lang, D E Horton

1931414 *Landfill Burning Detection for Air Quality Impacts in South and Southeast Asia: A Machine Learning Approach:* **M Nicholson**, P Tulloch, R B Jackson

1940811 *Long-Term Spatiotemporal Trends in Aerosol Composition and Exposure over South Asia Using Satellite Observations and Machine Learning:* **S Dey**, S Srivastava, V Singh, S Saha, C Venkataraman

1938405 *Machine Learning-Based Bias Correction for Improving PM2.5 Prediction Performance Using the Community Multiscale Air Quality (CMAQ) Model:* **S I Lee**, H J Song, H R Oh, Y Kwon

1980972 *Mobility-Based Air Pollution Exposure Assessment in the San Francisco Bay Area Using Coupled CMAQ-BEAM Modeling:* **L Jin**, C Poliziani, Y Fan, J Zhang, H Laarabi, S E Neyestani, Z Needell, J Zhang, A Spurlock

1938382 *New Source-Receptor Tools for Air Quality Management in California:* **Y Wang, PhD**, C Barrientos, L Jin, L Koolik, J Marshall, L Rojas Mendoza, A Unal, C Venkataraman, Y Wang, J Apte

1976558 *Quantifying model performance of Volatile Organic Carbon predictions from a regulatory air quality model in Houston, Texas:* **A Valencia**, E Couzo, K Craig, L Suciu, B Flowers, C Sanchez Guerra, J R Green, W Vizuete

1881076 *Spatial and Distributional Air Quality Impacts of New York City's Congestion Pricing Policy: Evidence from Ground and Satellite Observations:* **A Anand**, D M Westervelt, P Goldberg

1958029 *Substantial But Unequal Health Benefits from Electric Vehicles Adoption in China:* **Y Wen**, S Zhang, Y Wu

1970098 *Understanding How Interannual Shifts in Emissions Drive Regional $PM_{2.5}$ Exceedances in the United States: Insights from a Chemical Transport Model:* **M Hossain**, H M Horowitz

1971481 *Deriving Heat Index, WBGT, and UTCI from ERA5: A Reproducible Framework for Global Use from the CAFE Research Coordinating Center.:* **A James**, Z Popp, K Spangler, J Liu, K Lane

1881667 *Project Confluence: AI-Powered Research Synthesis to Bridge Scientific Literature and Community Action:* **S R Rao**, D Karwat

1968917 *The Health and Air Quality Applied Sciences Team (HAQAST): Building Trust and Collaboration with Satellite Data for Health and Air Quality Decision-Making:* **J Bratburd**, T Holloway, L Fletcher

2003513 *The Methane Risk Map: Communicating the Health and Safety Risks from Methane Emissions Events:* **S Bisogno**, J K Domen, C I Efstathiou, N Heath, J Lee, C G Moniruzzaman, Q Munoz, Y Núñez, S T Rowland, A Ruiz, A Snell, K Bilsback

246961
Discoveries and Emerging Topics in the Atmospheric Biome

Conveners: **Morgan Gorris**, University of California Irvine; **Allison Steiner**, University of Michigan Ann Arbor; **Kathleen Weathers**, Cary Institute of Ecosystem Studies; **Behzad Ghanbarian**, University of Texas at Arlington

1968584 *A Brief History of Bioaerosol Sampling for Atmospheric Investigations: From Early Achievements to Future Prospects:* **G Mainelis**

1893412 *A Novel Air Sampler Evaluation for Drone Optimization: Using Drones as Tools for Environmental Air Sampling:* **P Kessinger**, M Nieto-Caballero, T C J Hill, M Hernandez, A Bosco-Lauth, S Magzamen

1978944 *Beyond Particles: Wildfire Smoke Delivers Disease-Causing Fungal Pathogens Validated in Mouse Models:* **P Lampman**, L Kobziar, K Bonfantine, J Smith, Z Zhao, N Anger, A Adhikari, S Fox, D C Vuono, J Aurell, B Gullett, K Garrett, O Lampman, M Remke, B Mehrad

247496
Early Warning Systems for Infectious Disease Based on Climate and Environmental Variability

(joint with GC, H, NH)

Conveners: **Moiz Usmani**, University of Alabama at Birmingham; **Helen Nguyen**, University of Illinois at Urbana Champaign; **Kyle Brumfield**, University of Maryland; **Jesse Bell**, University of Nebraska Medical Center

1852397 *Hantavirus is associated with open developed areas and arid climates, highlighting increased risk in the western United States:* **M E Gorris**, A Whitesell, A W Bartlow, C Telford, T Shoemaker

1874283 *Predictive intelligence for vibriosis in the eastern United States employing Bayesian spatial modelling:* **B Magers**, S Kumar, K Brumfield, K Deliz Quinones, R Colwell, A S Jutla, PhD

1880094 *A Bayesian Framework to Assess Antimicrobial Resistance Prevalence Using Satellite Earth Observations and Socio-Environmental Data:* **S Kumar**, B Magers, K Brumfield, H H Nguyen, R Colwell, A S Jutla, PhD

1852563 *Bioaerosols in the Earth System: Research Gaps and Frontiers:* **A C Aiken**, S M Kreidenweis, K C Weathers

1888975 *Comparative Analysis of Antibiotic Resistance Genes, Heavy Metals, and Microbial Communities in Springtime $PM_{2.5}$ During Asian Dust and Non-Dust Periods in Seoul, Republic of Korea:* **J Lim**, S Kang, K S Cho

1957646 *Diel Variation in the Taxonomic and Functional Composition of a Dryland Aeromicrobiome:* **A Besser**, J Lima-Zaloumis, R Lappan, J A Bradley, J Goordial, C Greening, H Throop, E Trembath-Reichert

1913986 *Evidence of local aerosol dispersion of diverse genotypes of the soil-borne fungal pathogen Coccidioides posadasii (causative agent of Valley fever) from single hot spot in Arizona: First step in linking infections to environment.:* **D Kollath**, N Stone, J Sahl, A Stout, M Ramsey, D Wagner, B Barker, P Herckes, M P Fraser

1916141 *The Characterization of the Airborne Microbiome: Bridging Atmospheric Sciences and Microbial Ecology:* **B Ervens**, P Amato, M Joly, L Nuñez López, F Mathonat

1998972 *The Role of Sampler Type and Environmental Humidity on Biological Ice Nucleation:* **K R Barry**, M Nieto-Caballero, K Rugh, E Kraus, M Hernandez, S M Kreidenweis

1889955 *Spatial Characteristics of ASF-Infected Pig Farms and Strategic Site Planning for Livestock Disease Prevention:* **M JI**, W S Lee

1897081 *Urban Flooding and Waterborne Diseases in Uttarakhand: A GeoHealth Approach to Climate Resilience:* **J ALI**

1897834 *Tropical Atlantic and Indian Ocean Temperatures Shape Malaria Risk in Malawi Through Impacts on Soil Moisture:* **M Elling**, K B Karnauskas, M Kowalcyk, A Buchwald, R McCann

1901123 *It's Heating up for Mosquitoes: Impacts of Climate on Mosquito Populations in Harris County and What This Means for Vector-borne Diseases:* **I Bunge**, S Dee, O Silberg, M E Bottazzi, S Gunter, P Hotez, S E Ronca, C Standlee

1903718 *Spatiotemporal variation in risk of Campylobacter infection in childhood: a global risk mapping and prediction model using individual participant data:* **N Hossain**, B F Zaitchik, V Lakshmi, K Margaret N, J M Colston

1915209 *Assessing Monsoon Rainfall Variability and Drinking Water Contamination Risks in Rural Maharashtra Schools:* **M Sulaiman**

1916085 *IMPACTS OF EXTREME WEATHER EVENTS ON VEGETATION AND RODENT POPULATIONS IN EASTERN KANSAS:* **M Mitchell**, L Langford, J Lee, A Reed, F Sun, M Bani Yaghoub

1925425 *Forecasting Valley Fever Cases in Arizona to Reduce Disease Burden:* **C E Erickson**, A W Bartlow, M E Gorris, K A Kaufeld

1926841 *Examining factors in the transmission of avian influenza from elephant seals in Antarctica:* **A Arena**, A W Bartlow, J M Fair, M E Gorris

1929035 *Recent and Forecasted Increases in Coccidioidomycosis Incidence Linked to Hydroclimatic Swings in California:* **A Heaney**, S Camponuri, G Sondermeyer Cooksey, S Jain, D Vugia, D Swain, J Balmes, J Remais, H Jennifer

1931918 *Climate Extremes Contribute to Shifts in Schistosomiasis Transmission Risk:* **A Meydani**, D F Levia Jr, S Wang, PhD, R Bergquist

1953251 *Interdecadal changes in ENSO characteristics at the turn of the century influenced Dengue epidemics in Thailand:* **J Cascante Vega**, J Gottfried, A Giannini, M Pascual, L Souto Ferreira

1956436 *Intersecting Memories of Immunity and Climate: Potential Multiyear and Nonlinear Impacts of the El Niño–Southern Oscillation on Infectious Disease Spread:* **M V Chung**, G A Vecchi, W Yang, B Grenfell, C J E Metcalf

1958245 *Investigating Enterococcus Prevalence in Coastal Alabama: The Role of Environmental Drivers:* **H Mehranpour**, M Usmani

1959314 *Predicting Mosquito Vector Abundance for Targeted West Nile Virus Control:* **Z Woods**, C M B D Franca, N Shreffler, V Peter, D Rovito, A Read, E Podest

248142
Earth Observations and Models for Integrated Approaches to Improving Environment, Human & Ecosystems Health *(joint with A, GC, H, SY)*

Conveners: **Sushel Unninayar**, NASA Goddard Space Flight Center; **Benjamin Zaitchik**, Johns Hopkins Univ; **Helena Chapman**, NASA Headquarters; **Jared Entin**, NASA Headquarters

1962757 *Operationalizing a Malaria Early Warning System in Panama and Honduras with potential extensions to Guatemala and Colombia:* **W K Pan**, B F Zaitchik, M Janko, P Kansara, Q Zheng, S Liu, M Pan, J Lana, S Hu, S Park, D Lopez-Carr, F Galli, P Harrell, C Lara, J Loaiza

1963964 *Mechanistic Modeling of Aedes aegypti Mosquito Habitats for Climate-informed Dengue Forecasting—Can We Improve Lead Time While Retaining Predictive Skill?:* **C N Yasanayake**, B F Zaitchik, A Gnanadesikan, L Gardner, A Shet, P Kansara, L Fernando

1979535 *Exploring Satellite-Derived Ocean Color and Temperature Signals for Identifying Vibrio Vulnerability Hotspots in the Gulf of America:* **S B Ankon**, A S Jutla, PhD

1987765 *A machine learning approach to detect the seasonal risk of Vibrio spp.:* **K Singh**, K Brumfield, A Huq, R Colwell, A S Jutla, PhD

1992337 *Dengue forecasting and outbreak detection in Brazil using LSTM: integrating human mobility and climate factors:* **X Chen**, P Moraga

2000707 *Real-Time FloodNet Monitoring and Upper Respiratory Illnesses in Brooklyn, New York:* **S Mistry**, I Nabeel, L Cabrera, B Branco, V Midya

2002964 *Confounding effects via spatially-varying demographic factors upon West Nile virus surveillance in Illinois identified using a Bayesian functional data analysis model:* **A Tonks**, L Bravo De Guenni, R L Smith

2003344 *Satellites and Smartphones: Real-Time Cholera Early Warning and Risk Communication App for Kenya:* **L N Kamau**, B Magers, S Kumar, A S Jutla, PhD, A S Akanda

2003759 *From Pixels to Predictions: Forecasting Arbovirus Risk with Satellite Data:* **M Gangwar**, L Ash, A Kramer

2005007 *Pollution Dynamics of the Ganga at Haridwar: A Student-Based Study on Water Quality and Anthropogenic Pressures:* **S Ali**

1879328 *Assessing the Impact of Climate and Land Cover on Northeast Ixodes scapularis Populations:* **J D T Savage**, J Winter, M Ayres

1896418 *Climate-Driven Dengue Risk in Mumbai: Modeling Monsoon Variability and Urban Health Adaptation Strategies:* **S ALI**

2000507 *In-Utero exposure to environmental stressors and child health outcomes: An advanced approach of integrating satellite derived environmental data with DHS health records:* **M Adhikary**, N Saikia

2000679 *Urban–Rural Disparities in Heat-Health Risk Across Texas:* **T E Morakinyo**, S Ghahremani

252388

Effectively Using Climate and Weather Data for Health Applications *(joint with A, GC, H, NH)*

Conveners: **Yun Hang**, University of Texas Health Science Center Houston; **Ryan Harp**, University of Colorado Boulder; **Beth Haley**, Environmental Protection Agency; **Ismail Nabeel**, Department of Environmental Medicine at Icahn School of Medicine at Mount Sinai; **Yiqun Ma**, University of California San Diego

1907919 *A High-Resolution Climate Change Dataset for Assessing Zoonotic Disease Risk and Human Health:* **S Ma**, S Zhou, Z He

1997716 *A Novel Community-Based Heat Warning System: Bayesian Spatial Modeling of Emergency Department Visits Due to Extreme Heat Across California Neighborhoods:* **J Molitor**, D P Eisenmann, D Garcia-Gonzales, M Villanueva, M Jerrett, S Monte-Sano, K McNamara

1922343 *A Spatial Framework and Online Platform for Linking Climate and Health Data in Jordan Using Hospital Service Areas:* **I Zaslavsky**, S Lamont, M O Hussien, S Z Akasheh, C Neale, C Kirkpatrick, W Al-Delaimy

1917943 *An Open-Access Workflow Linking Climate Model Data and Health Impacts of Air Quality:* **J W Hurrell**, A Wells, B Anderson

1925663 *Application of a Deep Learning Approach Using Google Street View Imagery to Improve Characterization of Neighborhood Deprivation for Environmental Health Research:* **R Jones**, L Marcus Post, R V Remigio, J Fisher, Y Hang, J E Bell, Q Nguyen

1896755 *Assessing Compound Climate Exposures and Public Health Outcomes in California:* **M E Marlier, PhD**, R Connolly, Y Ma, M Jerrett, T Benmarhnia

1955046 *Assessing Heat Exposure Metrics for Health Outcomes: Historical and Future Projections for Southeast Texas Using a Newly-Developed 1-km Climate Dataset:* **I C Nduka**, S Chambliss, C Cummins, P V V Le, P Passalacqua, G Persad

252249

GeoHealth in the age of AI *(joint with IN)*

Conveners: **Kimberly Kaufeld**, Organization Not Listed; **Cally E. Erickson**, Los Alamos National Laboratory; **Cally E. Erickson**, Los Alamos National Laboratory

1999297 *CalHeatScore: A Novel Heat-Health Ranking System for California:* **F Chiang**, B Bell, S Cohen, W Wieland

1961756 *Current Approaches and Recommendations for Understanding the Impacts of Environmental Disasters on Risk of Alzheimer's Disease and Related Dementias.:* **A James**, G Wellenius, S Adar, J D Berman, M Gall, J Brook, J E Bell, E Gause, S Mueller, K Francois, M Ganesan, K Lane

1926979 *Examining the impact of bias correction configurations on a multivariate meteorological index: A case study of Heat Index analysis in the Northeast US:* **W Xu**, K W Dixon, N Zenes, J R Lanzante

1865126 *Heat Exposure and Excess Morbidity in the City of New Orleans, Louisiana during the Warm Season, 2010-2019:* **S Mathews**, E Scott, M Lackovic, A Reilly, B Babin, S Baker, V Brown, M Desjardins, G Smith, K Koehler, S Zeger, J Madrigano

1973846 *Hourly Satellite-Derived Ozone Dynamics Reveal Transboundary Pollution Patterns and Health Risks along the U.S.-Mexico Border:* **A Mei**, Y Hang, K North, J Aguilera

2003876 *Identifying the Health Impacts of Severe Weather caused Power Outages in California through a Qualitative Approach:* **J Toweh**, J Suckale, S Luby

1873941 *NIH CHORDS Tools to Integrate Environmental Health and Extreme Weather Data: Wildfire Smoke and Asthma in Oregon:* **A K Miller**, A Liu, D Bost, A Burkholder, D Fargo, K P Messier, A Motsinger-Reif, D Reif, C Schmitt

2002128 *None-Knotted R_0's: Our R_0's are Area Specific:* **S Brinker**

1950869 *Sometimes Missing the Heat: Daily Heat Index Approximations and Systematic Underestimations of Extreme Heat Events:* **N Zenes**, W Xu, K W Dixon, D Adams-Smith

1953428 *Understanding Data Needs for Accelerating Research at the Intersection of Climate and Health:* **Z Popp**, E Gause, K Spangler, H Clifford, M Hoenig, J Cetron, M Audirac, J Goldman, A Nori-Sarma, F Dominici, G Wellenius, D Braun, K Lane

1856484 *Weather Differences in the Backyard and Front Yard: Observations, Visualization, and Pattern Analysis:* **T Su**

1986469 *Computational Identification of Crystallin-Binding Ligands to Mitigate Cataract Formation in Space Environments:* **A Raj**, G Sharma

1895105 *High Resolution Mapping of Human Activity Zones in Southern Africa with Foundation Models and Remote Sensing:* **Y Li**, N Kroll, A Sharma

1888626 *Mapping Neighborhood Physical Disorder Using Computer Vision: Implications for Public Health in Post-Hurricane:* **H Yoon**, D Li

2004236 *Seeing Safety: A GeoAI Framework for Perceptual Risk Mapping and Crime Prevention Using Street-Level Imagery:* **S Wen**

1931418 *SpaCE: A Spatial Counterfactual Explainable Deep Learning Model for Predicting Out-of-Hospital Cardiac Arrest Survival Outcome:* **J Zhang**

258544
GeoHealth Student and Early Career GeoBurst Session

Conveners: **Yun Hang**, University of Texas Health Science Center Houston; **Yun Hang**, University of Texas Health Science Center Houston; **Yiqun Ma**, Yale University

1997124 *A Novel Method for Generating Spatially Resolved Synthetic Populations for Health Impact Assessments in Vulnerable Populations:* **F Black-Ingersoll**, C Milando, Z Popp, M Echevarria-Ramos, M P Fabian, A Nori-Sarma, J I Levy

1965064 *Advancing Exposure Assessment for Ambient Air Toxics and Tree Pollen:* **X Zhang**

1936264 *Assessing Presence of Per- and Polyfluoroalkyl Substances (PFAS) in the Indian River Lagoon: A Bayesian Approach to Understanding the Impact of Environmental Stressors:* **S Kumar**, S Santiago Borrés, J C J Bonzongo, K Deliz Quinones, A S Jutla, PhD

1869793 *Bird richness as a mediator between greenspace and mental health relationships:* **H Wang**, S Chen

248205
Harnessing Geospatial Data to Address Drinking Water Exposures and Public Health Impacts *(joint with H, IN, SY)*

Conveners: **Xindi Hu**, George Washington University; **Sam Ying**, University of California Riverside; **Ann Ojeda**, Auburn University; **Jahred Liddie**, Harvard T. H. Chan School of Public Health

1954452 *A Geospatial Model to Predict Nitrate in Groundwater to Elucidate the Relationship Between Private Well Use and Cardiovascular Health:* **H Moylan**, K P Messier, M Loop, A Ojeda

2002777 *Using Machine Learning to Explore Socioeconomic and Environmental Influences on Diarrheal Disease in the Brazilian Cerrado:* **N Preschel**, G L Galford, M Zeraatpisheh, H C Turner, K Gleason, A Rodrigues

1878186 *Wastewater contamination detection in urban stormwater systems using multi-sensor data and machine learning:* **L Vucinic**, C Lydon, H Mezali, P McConvey, T McIntyre, F Ajia, M I Freitas da Silva Vucinic, D O'Connell, C Coxon, L Gill

1874526 *Climate, Health, and National Security: A Centralized Biothreat Early Warning System:* **B Magers**, M Usmani, K Singh, L Revere, V Lakshmi, T V Loboda, J E Bell, K Brumfield, R Colwell, A S Jutla, PhD

1990254 *Crisis Methods for Crisis Settings: A Randomised Controlled Trial Testing the Effectiveness of Support Groups on Psychosocial Outcomes Among Ukrainian Families Affected by War:* **M L Charpignon**, S Tucker, S Flaxman, O Ratmann, S Hillis, J Lachman, N Baldonado

1991603 *From Smoke to Health: Mapping $PM_{2.5}$, Black Carbon, and Cancer Mortality After the 2020 Butte County, California Fires:* **K Phung**, Y Hang

1910616 *Mercury Exposure in Amazonian Gold Mining Frontiers: Socioecological Drivers, Health, and Territory in Madre de Dios, Peru:* **L Easton-Calabria**

2003777 *Reconciling Mixed Evidence on Rainfall and Diarrhea: A Multi-Country Analysis Testing the Concentration-Dilution Hypothesis:* **Z Wang**, Q Kong, R Jing, S Heft-Neal, E Bendavid, Z Wagner

1902551 *Where Heat Does Not Come in Waves: A Framework for Understanding and Managing Chronic Heat:* **M Cruz**, K J Mach, L Turek-Hankins, K Bishop, Z Bailey, S Evans, A Fanning, M Fernandez-Burgos, J Gilbert, B Howard, M Mahabir, J Marturano, L M Goes, N Muse, J Pérodin, A C Clement

2003019 *Analysing UCMR5 data on a Public Water System, State, and Aquifer Level to Understand PFAS Distribution in Comparison to UCMR3.:* **H Nance**, M Kumaar, P Gupta

1925262 *Drivers and Dynamics of Groundwater Nitrate Contamination in Nebraska's Watersheds:* **A Abadi**, S Munde, MSc, K A Weber, R V Remigio, Y Li, Y Gwon, S Bartelt-Hunt, J E Bell

1899469 *Exposures to Drinking Water Contaminants and Risk of Ovarian and Endometrial Cancer Among Women in California:* **M Spaur**, J Fisher, L Hurwitz, A Chtourou, K Bangia, A Keil, A Nigra, L Beane Freeman, M Ward, R Jones, B Bell

1988295 *Forecasting the Human Health Impacts of Ocean Plastics: An Integrated Approach Using Synthetic Populations and Hydrodynamic Modeling:* **A K Gupta**, A Correas, N Kunz, P A Churchyard

1893495 *High-Resolution Analysis of Demographic and Socioeconomic Characteristics of Households with Private Wells in the USA:* **C Sear**, A Cohen, L Marston

1989945 *Learning to Trace PFAS at the CONUS scale: Machine Learning Reveals Industrial Sector-Specific Risk Patterns in U.S. Water Systems:* **P Gupta**, H Nance, K Nguyen, R Dhiman, M Kumaar

1915098 *Lessons Learned at the Nexus of Water, Health and Climate Change:* **A Katner**

249541
Health and environmental impacts of methane and co-pollutants across the oil and natural gas supply chain

Conveners: **Veronica Southerland**, Environmental Defense Fund DC; **Meagan Weisner**, Organization Not Listed; **Paige Varner**, Environmental Defense Fund

1915288 *Associations Between Oil And Gas Development And Pediatric Asthma Emergency Department Rates In California:* **E Polka**, J Buonocore, E Campbell, M Willis

2003906 *Characterization of Midstream Natural Gas Composition to Support Risk Assessment of Non-Combustion Emissions:* **S T Rowland**, J K Domen, Q Munoz, J Lee, N Heath, S Bisogno, K Bilsback

249477
Human Dimensions of Drought: Water, Health, and Community Vulnerability *(joint with A, H, NH, SY)*

Conveners: **Azar Abadi**, University of Alabama at Birmingham; **Mark Svoboda**, National Drought Mitigation Center; **Jesse Bell**, University of Nebraska Medical Center

1939184 *A Multi-Indicator Quantitative Analysis of Drought Effects on $PM_{2.5}$ in the U.S:* **H Li**, K Gribben, J D Berman, Y Gwon, A Abadi, B Wardlow, D Tong, J E Bell

1996248 *Climate Sensitivity of Invasive Fungal Sinusitis Mortality in U.S. Counties, 2003–2021:* **R Mohammadi, MPH, PhD (c)**, Y Gwon, K Kintziger, J Herstein, J E Bell

1865764 *Deaths associated with drought, wildfire smoke, and their concurrent added effects in the contiguous United States:* **Y Hu**, L Chu, P Wang, A Abadi, M Qiu, K Chen

1924797 *PFAS Exposure in North Carolina: A Geospatial Analysis of Likely Contamination Sources and Their Impact on Drinking Water Over Time:* **R Campbell-Baier**, H B Zeff, M L Serre, G W Characklis

1960819 *PFAS risk in Tennessee drinking water supply: A data-driven approach to identify vulnerable communities:* **P M Johnson**, J M Gilligan, N Robbins, F Alvarez-Carrascal, H Baroud, Y J McDonald

1881428 *Sociodemographic Barriers to Advancements in Water Treatment among U.S. Community Water Systems:* **J Liddie**, M Dai, G Adamkiewicz, E M Sunderland

1999304 *Estimating the Acute Health Risks of Over 1,000 Oil and Gas Methane Emissions Events:* **N Heath**, S Bisogno, S T Rowland, J K Domen, Q Munoz, C G Moniruzzaman, C I Efstathiou, J Lee, Y Núñez, K Bilsback

1987184 *Global Integrated Assessment of the Combined Effects of Climate Change and Air Pollution:* **J Rising**

1867964 *Health burden of air pollution from gas combustion in buildings in the United States:* **J Buonocore**, H Tran, M Soni, B Seals, B Sousa, J Pendleton, S Arunachalam

1975488 *International Methane Emissions Events: Data Gaps and Opportunities to Assess Health Risks:* **J K Domen**, S T Rowland, Q Munoz, J Lee, N Heath, S Bisogno, K Bilsback

1987441 *Who's at Risk? Estimating Population Exposure to Oil and Gas Methane Super-Emitters:* **J Lee**, Q Munoz, A Ruiz, S Bisogno, N Heath, S T Rowland, K Bilsback, Y Núñez

1924281 *Drought and Respiratory Outcomes: A Systematic Search Scoping Review:* **A Abadi**, A Najafighodousi, M Gribble, A Ghosh, H Moradkhani

1870638 *Drought, Food Security, and Coping Strategies: Characterizing the variety of household responses in Namibia:* **L Poole-Selters**, S Lendelvo, K Rathod, E Coughlan de Perez

1938416 *Human Health Risks from Groundwater Contaminants in Punjab, India: Lessons, Responses, and Recommendations:* **M Umar**

1968574 *Precipitation conditions as a predictor of nitrate contamination in private wells across Iowa:* **R V Remigio**, M Kamenetsky, S Munde, MSc, P Masi Fleytas, D W Kolpin, J E Bell, M Ward, L Beane Freeman

1926741 *Regional-level Associations of Drought with COPD Mortality in the United States:* **K Gribben**, K Afari, Y Gwon, H Li, B Jalalzadeh Fard, J D Berman, J E Bell

1886580 *Spatiotemporal Patterns of Drought and Extreme Weather Events and Their Influence on Agricultural Productivity in Agro-Climatic Zones of India:* **A Hasan**, R C Pandey Dr

250411
Mental Health Impacts of Specific Climate Hazards: Risks, Responses, and Resilience in a Changing Climate *(joint with NH, SY)*

Conveners: **Azar Abadi**, University of Alabama at Birmingham; **Dennis Stolle**, American Psychological Association; **Daniel Dodgen**, American Psychological Association Presidential Task Force on Disasters

1943518 *Worried but well? Maternal Anxiety and Perception in Two Cyclone-Affected Coastal Regions of Bangladesh:* **L T K Purnata**, A Ahnaf Nihal, F A Mishu, M R Islam, N Tabassum, F Rahman, A I Chowdhury, Shampa, S B Murshed, S Haque, M Salehin, M H Rahman

1937752 *Analysis of the Relationship Between Green Space Types in the Seoul Metropolitan Area and Mental Health and Suicide Rates by Gender and Age:* **J CHOI**, H Yoon

2003376 *Climate Change Impacts on Mental Health among Coastal Communities in Bangladesh:* **T Baree Tuna**

1997502 *Climate resilience adaptation and psychiatric emergency services utilization during extreme heat in Boston, MA: a difference-in-differences analysis:* **F Black-Ingersoll**, M Willis, A Nori-Sarma, J S White, S T Grady, K A Vrkljan, A Duncan, K Burrows, R Oblath, A Nori-Sarma

1918569 *Cyclone-Induced Anxiety and Resilience in Coastal Bangladesh: Gendered Dimensions of Climate-Driven Mental Health Risks:* **M R Islam**, L T K Purnata, F A Mishu, M H Rahman, F Rahman, N Tabassum, S B Murshed, Shampa, A I Chowdhury, S Haque, M Salehin

247978
Modern approaches to monitor, model and reduce environmental exposure: Applications for Global Community Preparedness, Policy, and Public Health Improvement *(joint with A, GC)*

Conveners: **Debatosh Partha**, Wayne State University; **Janody Pougala**, Northwestern University; **Khandaker Jafor Ahmed**, University of Michigan Ann Arbor; **Xiaorong Shan**, George Mason University Fairfax

1981323 *Addressing Neighborhood Disparities of Extreme Heat with Low-cost Sensors in Boston, MA.:* **J Lee**, I Gambill, Z Davis, Y Yuan, A Saba, J Howard, M P Fabian

1912231 *Air Quality Model Development and Reduction for Interdisciplinary Science:* **C Tessum**, H Emamipour, L Guo, J Liu, M Park, S Wang, X Yang, S Lowry

1852737 *Differential Associations of Daytime and Nighttime Heatwave Intensity with Hospitalizations for Mental and Neurological Disorders in California: Humid Nighttime Heatwaves as a Stronger Driver:* **Y Ma**, K Guirguis, C Jones-Ngo, A Teyton, H Brown, F Charlson, A Gershunov, M E Marlier, PhD, T Benmarhnia

2004485 *Disaster Preparedness for Methadone Treatment Programs:* **V de la Cruz**

1860327 *Heat exposure and household energy insecurity associations with maternal mental health and child developmental delay in two U.S. cities:* **S Ettinger de Cuba**, C Robbins, M P Fabian, S Coleman, M Sandel, E Ochoa Jr, D Cutts, F Lê-Scherban, A Poblacion, D A Frank, K Lane

1922184 *Impacts of Extreme Weather Events on Mental Health Among Farmers: A Systematic Review of Observational Studies:* **T Baree Tuna**, M Bardhan, M M Patwary, M A Rahman, S M Billah

1896595 *Microplastics in the Ganges River: Assessing Human Health Risks from Drinking Water in Haridwar:* **S Sumayya**

1949487 *The Effect of Home Damage On Post-Flood Psychiatric Morbidity: A Systematic Review and Meta-Analysis:* **S Rowan**, E Yeates

1876079 *The Impact of Cyclone Freddy on Maternal Mental Health and Child Development:* **A Buchwald**, M Kowalcyk, M Crespo-Llado, M Laufer, M Gladstone

1965916 *Uncovering Drivers of Emotional Vulnerability to Extreme Heat Using Explainable Machine Learning:* **X Li**, O Stanoi, S Christiansen, H Kostick, K Ochsner, M E Mann

1973288 *Understanding Psychological Resilience to Flooding Events Through the Ecological Framework of Comprehensive Health:* **K Maier**

1910332 *Assessing Changes in Community Exposure to Sulfate $PM_{2.5}$ from Power Plant Development and Regulatory Interventions:* **L Henneman**, X Shan

1956151 *Dermal Exposure to Toxic Elements in Cosmetics: A Comparative Risk Assessment using U.S. EPA Models:* **H Stoner**, T Godebo, P Kodsup

1874072 *Determination of Lead, Arsenic, and Mercury Levels for Pristine and Urban Areas of the Galápagos Islands Using a Handheld X-Ray Fluorescence Analyzer on Fresh and Weathered Rocks, Soil and Sand, Biological Materials, Paint, Trash Dumps, and Harbor Areas:* **B L Clausen**, M Soria-Carvajal, G Jackson, A M Martínez Ardila, W Hayes

1957134 *Dietary Contribution of Essential Minerals from Honey Consumed in the United States:* **H Stoner**, T Godebo, S Nyachoti, P Kodsup, A Abdelghani

2002283 *Drone-Based High Resolution Geographical Mapping of Radon: A Step Toward Addressing Radon Testing Disparities in New Mexico:* **R E Silber**, S Paladugu, K Staggs, E A Silber

1884696 *Fluoride in drinking water and children's cognitive performance:* **T Godebo**, M A Jeuland

1968169 *Greenspace Modifies the Association between Heat and Mortality: A Systematic Review and Meta-analysis:* **M M Patwary**, I C Sakib, M I A Badhon, A Iftikhar, M Bardhan, M J Z Sakhvidi, D Sikder, P Dadvand, M L Bell, M H E M Browning, T Astell Burt, M P Kabir, P James

1990972 *Heat Exposure and Behavioral Thresholds Among Older Adults in Public Housing: Insights from Strava and a Physiological Thermal Comfort Model:* **Y Liu**, X Li, D Li, C Zhu

1985063 *Japan's PFAS Regulations: Current Status and Future Directions:* **M Haraguchi**

248880
Monitoring, Modeling and Mitigation of Harmful Algal Blooms and Environmental Pathogens *(joint with B, GC, IN)*

Conveners: **Zhiqiang Deng**, Louisiana State University; **James Diaz**, LSU Health Sciences Center New Orleans

1978546 *Bridging Temporal Gaps: Cross-sensor Assessment of GOES-ABI, MODIS & VIIRS for Diurnal Monitoring of CyanoHABs:* **A Kumar**, C Maniyar, D R Mishra

1992281 *Environmental Influences on Exercise-Induced Anaphylaxis: A Review of Climatic and Atmospheric Triggers:* **V Tomat**

1989805 *Genomic Signatures of Harmful Cyanobacteria in Freshwater Sedimentary Archives:* **L Doner**, N Conley, J Sevigny, L Gordon

252739
One Water – One Health: Harnessing Remote Sensing and Water Systems to Advance Human, Animal, and Environmental Health *(joint with GC, H, IN, NH)*

Conveners: **Anuj Tiwari**, University of Illinois Discovery Partners Institute; **Manish Kumar**, Distinguished Professor; **Bramha Vishwakarma**, Indian Institute of Science; **Matthew Leslie**, Illinois Department of Public Health; **Anukesh Krishnankutty Ambika**, Oak Ridge National Laboratory

1987719 *Linking atmosphere, behavior, and health through online chatter: the potential of crowdsourced information for operational heat surveillance in New Orleans:* **R Chari**, L Easton-Calabria, T Ruder, J K Drapkin, C Reed, J Madrigano

1992246 *Modeling Spatio-Temporal Profiles of Climate-Driven Environmental Exposures to Assess Stroke Risk in Vulnerable Populations:* **K Li**, Q Pu, PhD, K Chirstopher

1891607 *Passive monitoring of air pollution in West Philadelphia:* **K M Shakya**, C Sylvester, J Shabazz

1992857 *Predicting Traffic-Related Hyperlocal Air Pollution Using Traffic Video:* **Q U A Fatima**, C Tessum, M W Tessum, V Kindratenko, Y M Kim, A Kazemi

1954183 *The Impact of Air Conditioning, Floor Level, and White Roofs on Extreme Heat In Classrooms: Lessons From Thousands of Classrooms in Boston Public Schools:* **P Botana Martinez**, P Vyas, J Lee, M P Fabian, B Ge, K Walsh, M Yajima

1856782 *Using Satellites and Aircraft to Monitor Greenhouse Gas and Pollutant Emissions from Cities:* **E A Kort**, E Whiting, G Plant

1922898 *Light Gradient Boosting Machine-based Modeling and Forecasting of Oyster Norovirus Outbreaks:* **N Suwal**, Z Deng

1892580 *Process-Based Modeling of Cyanobacterial Harmful Algal Blooms in Lake Pontchartrain:* **S O Hofioni**, Z Deng

1897391 *Quantifying the Effects of Algal Blooms on Ocean Surface Roughness via a Wave tank experiment and Hyperspectral Imager Data:* **G Sundaram**, C S Ruf

1967797 *US-Wide Assessment of a Physics-informed AI Framework for Cyanobacteria Biomass Estimation: First Results from NASA's Hyperspectral PACE Mission:* **C Maniyar**, D R Mishra, A Kumar, G Mai, R E O'Shea, A Saranathan, A Ashapure, I Fiorentino, N Pahlevan

1936316 *Health Impacts of Hard Water Consumption in Haridwar District, Uttarakhand: A Cross-Sectional Study:* **R A Bakar**, F Ahteshyam

251548
Recent Advances in GeoHealth

Conveners: **Amanda Hoffman-Hall**, University of Maryland College Park; **Moiz Usmani**, University of Alabama at Birmingham; **Azar Abadi**, University of Alabama at Birmingham

1886245 *A decade of progress and challenges in Water, Sanitation and Hygiene (WASH) coverage in Bangladesh: insights from Bangladesh Demographic and Health Survey 2011-2022:* **M H I Jitu**, M Jahan, S S Hossain

1924115 *County-Level Geospatial Disparities in Congenital Abnormality Rates for the United States, 2014–2021:* **O Blanton**, A Abadi, S Acharyya

1916356 *Empowering the Data Ecosystem to Protect Health from Extreme Weather and Natural Disasters:* **A K Miller**, A Liu, D Fargo, K P Messier, A Motsinger-Reif, D Reif, A K Quinn, C Schmitt

1899167 *Geospatial Analysis of New Mexico's Socially Vulnerable: At a Higher Risk for Natech Disasters?:* **O Fentress**, A Hoffman-Hall

1984142 *Human health and wellbeing rely on a resilient and stable Earth system: advancing the synergistic Planetary Health and Planetary Boundaries frameworks:* **S Myers**, M Studer, O Masztalerz, S Ahdoot, S Gabrysch, J Gupta, A Haines, H Kleineberg-Massuthe, N Lambrecht, P Landrigan, J Mahmood, L M Portner, J Rohr, C Traidl-Hoffmann, A Wendt, B Wray, J Rockstrom

252635
The Long Arc of Contamination: How Geological Histories Shape Geogenic Hazards in Modern Aquifers and Impact Human Health *(joint with GC, H, PP)*

Conveners: **Sean Kinney**, ; **Anirban Basu**, Columbia University of New York; **Clara Chang**, Lamont -Doherty Earth Observatory; **David Tibbits**, Rutgers University New Brunswick

2002999 *From Carboniferous cyclothems to modern contaminants: metal transport and fate in anthracite mine pools in Northeastern Pennsylvania:* **S Kinney**, D Tibbits, C Chang, M Hewitt, L A Hinnov, C J Lepre, R Hughes, A Basu

1975637 *High-resolution elemental and isotopic mapping of redox gradients and uranium mineralization, Petrified Forest National Park, Arizona:* **D Tibbits**, S Kinney, C Chang, M DiMaio, A Marsh, P E Olsen, M F Schaller, A Basu

1883045 *Integrated assessment of behavioural and environmental risks for the non-communicable disease burden across urban and rural population subgroups in India:* **S Dey**, D Sarkar, A Das, R Anand, A Kumar, F Imam

1941535 *Machine Learning-Based Assessment of Groundwater Fluoride Contamination and Mobility Across Climatic Zones: A Comparative and Predictive Study:* **R Singh**, D S Tripathy, A K Gupta, A Dutta, N Ghosh

2002188 *Microbial Diversity in Soils Is the Top Predictor of Global Rates of Childhood Allergic Disease:* **J Ladau**, S P Wang, M Pavicic Venegas, J P Shaffer, D McDonald, A Vlot, R Knight, B Brown, M Hess, D A Jacobson, K Abuabara

1851762 *Modeling Spatial Variation in Water, Sanitation, and Hygiene (WASH) access in Low- and Middle-Income Countries Using Georeferenced Survey Data:* **B Fang**, V Ahmedjonova, N Hossain, V Lakshmi, M N Kosek, J M Colston

1958873 *Research on Outdoor Heat and Dementia Risk: Progress and Best Practice Recommendations:* **E Gause**, Z Popp, S Mueller, A James, K Spangler, C Gronlund, T Chakraborty, L Hutyra, K Francois, S Adar, K Lane, G Wellenius

1886006 *Stabilization of sulfate-rich expansive soils with biochar impregnated with magnesium oxide(MgO):* **T T**, G M

1965935 *Where is Blastomyces? An environmental modeling approach to understand fungal presence:* **K A Kaufeld**, S Hepler, D Kline, M Ireland, S Gibbons-Burgener, M E Gorris

1984652 *How Metal Contamination Across Environments and Lifespans Contributes to Chronic Disease:* **K Schilling**

1950467 *Selenium, Aluminum, Lithium, and Uranium Accumulation in Plants from an Abandoned Uranium Mine:* **C Chang**, A Pillai, A Mitra, D Tibbits, S Kinney, A Marsh, G John, T Rock, A Navas-Acien, K Schilling, R Glabonjat, A Basu

1958668 *The Association of Drinking Water and Urinary Lithium Levels in the Strong Heart Study:* **E Bannon**, W Lieberman-Cribbin, A Basu, A Nigra, A Mitra, R Glabonjat, J M Ross, B Bostick, S Chillrud, A Navas-Acien, K Schilling

1929854 *The Colorado Plateau Coring Project as a "Source-to-Sink-to-Source" venue for integrated study of geogenic contaminants, remediation, and resources:* **P E Olsen**, A Basu, L Becenti, C R Bebo, C Chang, C Davis, P G Falkowski, J A Higgins, J C McIntosh, A Nigra, M R Osburn, K Patterson, T Rock, A RoyChowdhury, D Santiago-Ramos, B B Slibeck, C A Suarez, D Tibbits, C Vetriani, J Whiteside, S Kinney

2000564 *Understanding global geogenic groundwater contamination: connecting tectonics to cancer:* **A Mukherjee**

246927
From Source to Tap: Understanding and Enhancing Water Security Across Scales *(joint with GC, IN, NH, SY)*

Conveners: **Anoop Valiya veettil**, Prairie View A & M University; **Goutam Konapala**, NASA Goddard Space Flight Center; **Ali Fares**, Prairie View A & M University; **Sourav Mukherjee**, USDA Forest Service

1960162 *Assessment of Participatory Water Governance in Drinking Water Supply Options in Southwest Costal Bangladesh:* **S Ahammad**, M M Patwary, M Hasan, M R Ali, M F Talukder, D M A Islam

1971384 *Assessment of Water Availability in the United States and Puerto Rico 2010-2020: Regional Perspectives:* **J R Degnan**, M J Cashman, K Powlen, M L Erickson, PhD, PE, A Martinez

1856046 *Enhancing resilience of spring dependent rural water supply and their governance in mid-hill, Western Nepal:* **G Pokhrel**, M Rijal

251688
Quantifying Groundwater Impacts on Inland Lakes, the Great Lakes, and Coastal Oceans: Advances in Modeling and Observations *(joint with B, OS)*

Conveners: **Mantha Phanikumar**, Michigan State University; **Eric Anderson**, Colorado School of Mines; **Saeed Memari**, Colorado School of Mines; **Andrew Gronewold**, NOAA-Great Lakes Environmental Research Laboratory; **Saeed Memari**, Colorado School of Mines

1985945 *Analyzing Groundwater–Lake Interactions and Their Influence on Summer Circulation and Thermal Structure in the Great Lakes:* **M Bilal Zafar**, S Memari, E J Anderson, A Gronewold, M S Phanikumar

1966754 *Beneath The Basin: Advancing Laurentian Great Lakes Groundwater Modeling:* **M Sigler**, A D Kendall, B P Heerspink

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Remote Sensing of Soil Processes *(joint with A, B, GC, NH)*

Conveners: **Vinit Sehgal**, Louisiana State University; **Noemi Vergopolan**, Rice University; **Andrew Feldman**, NASA Goddard Space Flight Center

1915503 *Uranium Isotopes Reveal Redox-Driven Groundwater Uranium Cycling in Northern Plains Aquifers:* **A Mitra**, R Hughes Jr, T Zacher, R O'Leary, R Red Cloud, B Sbardellati, M Stahl, B Bostick, S Chillrud, A N Halliday, A Navas-Acien, K Schilling, A Basu

1892461 *From Definitions to Decisions: How Methodological Choices Shape Global Water Scarcity Estimates:* **M M Mekonnen**, F T Wolkeba

1924456 *Hydroclimate Impacts of Large-Scale Climate Oscillations in South Carolina:* **K Bhardwaj**, P Khedun, A K Mishra

1987073 *Integrated Scenario Analysis of Hydrologic and Water Quality Responses to Land Use and Climate Change in the Occoquan Watershed, Northern VA:* **V Shah**, L Pal, M M A Chowdhury, A Baran, J Post, M Rippy, S B Grant, N Goulet, S Saksena

1918657 *Representing Human Decisions in Coupled Models of Groundwater Futures:* **J Yoon**, S Ferencz, C J A Klassert, T Thurber

1863087 *Understanding Groundwater Quality Challenges in Low Income Settlements of Coastal Ghana:* **C Wheaton**, J Reyman, J Zume

1968829 *Urban Water Security and Flood Risk:* **N Dhakal**, J M J Jeff

1890664 *Groundwater's Role in Modulating Ice Formation and Thermal Stratification in the Laurentian Great Lakes:* **E J Anderson**, S Memari, M S Phanikumar, A Gronewold

1993797 *Predictive Hydrogeological Modeling of Lake Beseka's Expansion Driven by Anthropogenic Activities Using MODFLOW USG:* **F Oseyemi**, W M Seyoum, E Gebremichael, J Awuku, Z Demissie

1891033 *Revealing Groundwater Connectivity and Flux Dynamics in the Laurentian Great Lakes Using SWOT Mission Observations and Multi-Source Data Integration:* **G Singh**, M S Phanikumar, N N Das, K Andreadis

1933869 *The hidden role of groundwater in the functioning and migration of saltmarshes:* **H A Michael**, J Guimond, D Pratt, E Grande

1947506 *Young, fast, and salty: Observations of groundwater age, flow and chemistry in Lake Huron's submerged karst features:* **S A Ruberg**, B A Biddanda, E J Anderson, K K Solomon, W Mace, S Gandualla

1947267 *Advancing the Understanding of Agroecosystem Soil Process with Integrated Earth Observations and Process-based Modeling:* **K Guan**, B Peng, S Wang, Z Ma, Q Zhou, L Ye

1906168 *Assessment of Soil Moisture Relationship with Gross Primary Production Using Remote Sensing:* **P Momenian**, V Sehgal

1933313 *Can we estimate (dynamic) active root zone depth using remote sensing data?:* **D Mishra**, V Sehgal, B Mohanty

1950364 *Dynamic Regulation of Critical Soil Moisture Thresholds and Land-Atmosphere Interactions Across Biomes:* **A Khandare**, V Chandel, K Lanka, S Ghosh

1953961 *Estimation of Rootzone Soil Moisture Dynamics Under Indian Summer Monsoon Conditions:* **A Y Naidu**, S Singh, B Mohanty

1896471 *From soil water to soil water potential: challenges and opportunities across the soil-plant-atmosphere continuum:* **J K Green**, A Ballantyne, K Novick, Z H Hoylman, D Ketchum, D P Beverly, A Crookshanks, M G Schaap

250890
Saline Lakes: From Science to Solutions *(joint with GC, SY)*

Conveners: **Isabella Arzeno-Soltero**, University of California at Los Angeles; **Mara Freilich**, Brown University; **Diego Centeno**, University of California Los Angeles; **Alejandra Lopez**, Brown University

1998087 *Advancing Hypersaline Lake Modeling by Coupling Salt Cycling and Evolving Bathymetry: A Case Study of Lake Urmia:* **A Habibi-Komeni**, A Safaie

253048
System approach and human-water feedbacks: Sustainable Urban-Rural Water and Wastewater Infrastructure in Achieving related Sustainable Development Goals

Conveners: **Kamshat Tussupova**, Kazakh National University of Water management and Irrigation; **Ronny Berndtsson**, Lund University

1932252 *Analysis and Modification of the Drainage System in Dhamrai Municipality, Bangladesh: A Sustainable Approach with LID Implementation:* **M J Ahamed**, F Shahriure, S Dey, M J Islam

1952258 *Antimicrobial Evaluation of La-Doped Li-Mn Ferrite Nanoparticles ($Li_{0.10}$ $Mn_{0.80}$ $Fe_{2.10-x}$ La_xO_4) against Multidrug-Resistant Bacteria in Wastewater:* **A Mahmood**, O R Khan, M Ibrahim

1992021 *Developing a conceptual framework for AI-based decision support tool for managing access to drinking water and sanitation services in rural Kazakhstan:* **K Kaltay**, R Berndtsson, Y Kabiyev Dr

1933783 *Landsat-based Multi-decadal Mapping of SOC Stocks Variability in Salt Marshes of Coastal Georgia:* **R Sharma**, D R Mishra

1876744 *Remote Sensing-based Soil Moisture Estimation in the Irrigation District by Integrating Crop-Specific Differences through a Hybrid Deep Learning-based Approach:* **S Du**, Y Zha, Y Ji, Y Wang, X Xu, Y Liu, M Zheng, Y Zhang, S Wu, T Yang

1937166 *Soil Moisture Estimation Using Hyperspectral Data: A Case Study Using FSSCat Mission:* **F O Omada**, P Biswas Paul, S R Singha

1966348 *Using InSAR to analyze subsidence and sinkage in the Blue & White Golf Course:* **M Marquez**, R Housego, R Bussard, C Wauthier

1933506 *Forecasting Hydrogen Sulfide Emissions Using Satellite-Derived Water Quality Metrics and Machine Learning at the Salton Sea, California:* **A Lopez**, M Freilich, I B Arzeno-Soltero

1892488 *From locals to labs: Community science reveals seasonal phytoplankton patterns in the Salton Sea:* **A Aguayo**, M Freilich, A Lopez, A Palomino, R G Sinclair, I B Arzeno-Soltero, A Krinos, J Taboada

1886942 *Mixing Dynamics in Eutrophic, Hypersaline Mono Lake, CA, during Meromixis:* **S MacIntyre**, J M Melack, R Jellison

1961146 *Ending Inhuman Practices: Transforming Existing Sewerage System into Innovative Rotating Siever Pipe System:* **N T R**, D Sengupta

1988652 *Evaluating the Coherence of Kazakhstan's Rural Water Supply Programs within the Framework of Sustainable Development:* **A Zhupysheva**, R Beisenova, A Mashaeva

1934769 *Evolution of Nature-based Solutions for Livestock Wastewater Treatment:* **I Alababneh**, A Mansaray

1976137 *Household Satisfaction and Drinking Water Quality in Rural Areas: A Comparison with Official Access Data:* **K Tussupova**, R Sharapatova, Z Bolatova, Y Kabiyev Dr, R Berndtsson, K Kaltay

1992787 *Implications of Drinking Water Programs in Rural Areas in Developing Countries:* **Y Kabiyev**, A Taishiyeva, K Tussupova

1937106 *Technical and Economic Feasibility of a Solar-Powered Sludge Drying System:* **A Hadian**, F Khorashadi Zadeh Dr

254726
Urban Ecohydrology in a Changing Climate: People–Plant–Water Dynamics in the Built Environment

Conveners: **Kyle Blount**, Colorado School of Mines; **Yujiu Xiong**, Sun Yat-Sen University; **Cynthia Gerlein-Safdi**, University of Michigan; **Claire Welty**, Center for Urban Environmental Research; **Zhaowu Yu**, Fudan University; **Jinhui Jeanne Huang**, Nankai University; **Elizaveta Litvak**, University of California Irvine; **Guo Qiu**, Peking University; **Zhe Shi**, Peking University; **Kun Zhang**, University of Minnesota Duluth

1971702 *From Groundwater to Garden Beds: VOC Exposure and Attenuation in Urban Residential Landscapes:* **B F O'Leary**, S Black, B Gordon, G R Hood, C J Miller, S Miller, L Palliyil, G Szewc, K Tangen, L Thompson, T Tran, Y Wager, Q Wang, E Wiese, J A Westrick

1961092 *Adaptive Responses and Thresholds of Carbon and Water Fluxes in Urban Forests Under Drought and Heat Stress:* **J J J Huang**, T Chen

1885476 *Beyond Hydrological Control: Assessing the Thermal Performance of Permeable Pavements under Varying Rainfall Conditions:* **B Chen**, T F M Chui

1969289 *Biogenic and Anthropogenic Carbon, Water, and Energy Fluxes in Urban Systems Using COS, SIF, Net Ecosystem Exchange, and Multiscale Ecosystem Observations:* **M A Gonzalez-Meler**, A Cho, M B Berkelhammer, F Rios Bolivar, P Muradyan, B Raut, S Pal, R Matamala, M C Negri

1993113 *Can small-scale green elevation provide significant thermal comfort benefits in space-constrained cities?:* **A Borah**, A Datta, A Kumar, U Bhatia

1861475 *Capturing Pollution Pulses in an Urban Stream Network Using High-Frequency Water Quality Sensors:* **J Noriega Giménez**, A Vincent, A I Packman

1950339 *Cities and Their Cool Roofs:* **R Saher**

1965712 *Decoupling Data Center Growth from Water Stress through Strategic Innovation:* **L Marston**

1970945 *Ecohydrologic Controls on Vegetation Cooling in Arid Urban Environments:* **M C Levy**, Z Fang

1900293 *Enhancing Urban Water Conservation in Inland Southern California Through Smart Plant Selection and Autonomous Irrigation:* **A Verdi**

1985999 *Evaluating the Effectiveness of Low Impact Development Using Legislated Hydrological and Environmental Vulnerability Indices in Korea:* **H Kim**, H Lee

1977515 *Evaluating the Effects of Varying Urban Irrigation Levels on Groundwater Recharge and Surface Runoff at the Parcel Scale:* **Z Amiri**, A Bhaskar, C B Voter

1852868 *Evapotranspiration Could Significantly Slow Down the Regional and Global Warming:* **G Y Qiu**, C Yan, Z Shi

1882548 *From Plots to Cities: Using Multiple Methods to Improve Our Understanding of Heat-Water Interactions Across Scales in the Built Environment:* **K Blount**, G Pignotti, K B Moffett

1874472 *Hot urban green spaces: from heat sink to downwind cooling benefit:* **N E Rojas Robles**, A Neumann, K N Mitu, E R Vivoni

1933275 *Hydraulic Diversity and Infrastructure Inequality Shape Urban Forest Vulnerability:* **D M Ciruzzi**, J G Singley

1922323 *Impacts of Nature-Based Solutions on Hydrology and Extreme Heat within Coupled Land-Atmospheric Simulations:* **A Alexander**, C B Voter, D B Wright, S P Loheide III

1892845 *Large streamflow differences between forested and urbanized watersheds in the eastern United States: The role of evapotranspiration and impervious surfaces:* **G Sun**, Z Bian, K B Khand, P V Caldwell, J Boggs, C Wang, Y Chen, N Liu, Y Zhang, X Chen, G B Senay, S McNulty

1918536 *Modeled Land-Atmospheric Interactions from Widespread Rain Garden Implementation in Contiguous U.S. Cities:* **L Gray**, L Zhao, A S Stillwell

1869710 *Multi-objective optimization of heat-water-carbon trade-off induced by urban irrigation:* **T Xia**, Z Wang, Y Wang

1991805 *Reclaiming Urban Lakes as Blue–Green Assets: A Science-Based Restoration Model for Urban Lakes in Rapidly Urbanizing Regions:* **H B Valleru**, I Nambi, R Sadhasivam

1927721 *Sewers, Streams, and Planning Green: Understanding Sanitary Sewer I&I and Nature-Based Mitigation in Baltimore:* **D Pelletier**, R Zhang, PhD, L E Band

1945327 *Smart diagnostics for sustainable water management: perspectives from the Birmingham Urban River Observatory:* **D M Hannah, PhD**, L Kelleher, K Khamis, I Lynch, J C White, W Buytaert, T Yasmin, B Howard, S Krause

1920952 *Spatial Identification and Characterization of Critical Source Areas in Urban Watersheds Using Process-Based Modeling and Geostatistical Analysis:* **A Ebrahimian**, A Yahyavi Rahimi

1871772 *Spatiotemporal Pattern of Greenspaces Evapotranspiration in major Chinese cities:* **J Jiang**, W Zhao, W Yan, G Y Qiu, Y Xiong

1888906 *Species Co-occurrence and Distribution Probability in Urban Mangrove: A Case Study of Futian Mangrove, Shenzhen Bay:* **H Guo**, R LI, X Shen, M Xu, L Zhang

1884068 *Structured Integration of Runoff Management into Challenging Soil Ecosystems – A Comprehensive Assessment in Southeast Coastal Texas, USA:* **Q Qian**, T Selvaratnam, L Haselbach, Y Zhang, W Shuster

1944175 *Study on Reference Vegetation Temperature Simulation and Evapotranspiration Estimation Using the Three-Temperature Model:* **L Mantik**, N Xuan

INFORMATICS

250220
Making Atmospheric Composition Observations More Open and More Findable, Accessible, Interoperable, and Reusable (FAIR) *(joint with IN)*

Conveners: **Morgan Silverman**, Analytical Mechanics Associates, Inc; **Fan Mei**, Pacific Northwest National Laboratory; **Giri Prakash**, Organization Not Listed; **Sara Lubkin**, NASA Headquarters

251747
Applications of AI/ML in Geodesy *(joint with IN)*

Conveners: **R Steven Nerem**, University of Colorado at Boulder; **Jade Morton**, University of Colorado Boulder; **Benedikt Soja**, Jet Propulsion Laboratory

1937231 *A machine learning framework to map Atmospheric Rivers using space- and ground-based GNSS observations:* **E Shehaj**, S S Leroy, K Cahoy, B Soja

1997278 *A Machine Learning-Based Exploration of Modelling VLBI Station Displacements:* **S Singh**, J Boehm, H Krasna, S Boehm, N B, O Dikshit

1891356 *Bathymetry Prediction with SWOT Gravity Anomaly using Machine Learning Methods:* **D T Sandwell**, B J Phrampus, B Nilsson, Y Yu, F Salajegheh, H Harper, B Liu, O B Andersen, W H F Smith, P Elmore, J Beale, L Altamirano, J Kirby, J Roberts

1981362 *Detecting Millimeter-Scale Offsets in GNSS Time Series: Benchmarking a Two-Stage Statistical Test against XGBoost and Quantifying Velocity Bias:* **Y Rahmani**, T M van Dam

1955302 *Enhancing GGM Coefficients for Precise Geoid Modeling Using PINN:* **J Akutcha**, A Abdalla

1909611 *Evaluation of Temporal Deep Learning Models for Ionospheric Delay Estimation and Their Impact on GNSS Positioning Accuracy:* **S H Lim**, T S Bae

1914859 *Trees as stormwater infrastructure: diverse canopy traits of different species have implications for rainfall partitioning to stemflow, throughfall, and interception:* **K E Mueller**, J van Stan II, S Blair, C Wischmeyer, T Swanson, J Bastock, N Lewis

1876752 *Understanding Urban Park Cooling: Linking Vegetation, Microclimate, and Surface Temperature:* **K N Mitu**, N E Rojas Robles, E R Vivoni

1942957 *Urban ecohydrology, flood risk, and equity along the Pearl River, Mississippi:* **G M Kondolf**, D Shields, B Herbert

1953328 *Advancing Variable Level Metadata: Triumphs and Pitfalls:* **M L Silverman**, E Huffer, J Klausen, G Chen, B Magagna, S Schindler

1991058 *Extreme Weather Tracking and Prediction of Flash Floods using GNSS Troposphere Observations and Machine Learning Models in Near Real Time:* **Y Bock**, B Chandna, R R Rachala, U Rebbapragada, A W Moore, J T Roberts, F J Calef III, Z Liu, I J Small, J L Laber, R Munroe

1961027 *High-Resolution Inland Surface Water Mapping Using GNSS Reflectometry and Deep Learning:* **Z Zhao**, J Morton

1981392 *Machine Learning Based Offset Detection in Vertical GPS Time Series:* **Z Young**, Z H Hoylman, H R Martens, W P Gardner

1916507 *Probabilistic Neural Networks for Atmospheric Delay Modeling: Enhancing GNSS Positioning with Uncertainty-Aware Corrections:* **B Soja**, T Hadaś, R Orus Perez, M A Adil, M Aichinger-Rosenberger, L Crocetti, J Gou, K Kaźmierski, G Marut, S Mao, A Rüegg, M Schartner

1951873 *Subsurface Triggers of Land Subsidence in the Rhineland Coalfield, Western Germany: Insights from Machine Learning and geotechnical modeling:* **M Motagh**, D Ritushree, M Baes

1945744 *Ultra-short-term UT1-UTC predictions: A machine learning approach using VLBI Intensives:* **A Laha**, M Schartner, J Gou, B Soja, O Dikshit

1970778 *Uncertainty Quantification of Satellite-based Essential Climate Variables Derived from Deep Learning: Examples of Snow Cover and Terrestrial Water Storage:* **J Gou**, A B Alberg, M Kiani Shahvandi, M J Tourian, U Meyer, E Boergens, I Velicogna, A U Waldeland, A Jaeggi, K Schindler, B Soja, F Dahl

251834
Actionable Insights from Remote Sensing: Advancing the Integration of Spatial Analytics, AI, and Participatory Approaches with Water Management Planning *(joint with GH)*

Conveners: **Romina Díaz Gómez**, Stockholm Environment Institute; **Antarpreet Jutla**, University of Florida; **Marina Mautner**, Stockholm Environment Institute

1976654 *A Machine Learning Pipeline for Identifying Managed Aquifer Recharge Locations in Satellite Imagery:* **S Yu**, A Visser, I Chakraborty, G J Anderson, J Lerback

1922455 *A Remote Sensing Data Fusion Approach for Automatic Identification of Ancient Subsurface Water Systems:* **D Kumar**, H Kumar, B P Kambhammettu, S K Regonda, U B

2002111 *An interactive framework for quantifying the potential for future water conflicts in Indiana:* **L C Bowling**, K A Cherkauer

1924727 *Bridging Numbers and Narratives: Engineering Diplomacy for Actionable Water Insights:* **S Islam**

1938004 *Dielectric Permittivity Measurement Using a Soil TDR Probe and Vector Network Analyzer Across Multiple Frequency Ranges:* **S Tokuyama**, K Noborio, D Kobayashi

250720
Advances in Real-time Monitoring and Forecasting of Water quality *(joint with GC, IN)*

Conveners: **Noel Aloysius**, University of Missouri; **Neil Fox**, Univ Missouri; **Moussa Yatta**, University of Missouri Columbia

1938568 *A Hysteresis Analysis of Water Salinity Using High Frequency Datasets Under Storm Events in the Upper Red River Basin:* **K Khodkar**, A Mirchi, K Wagner

1873132 *A Multitask LSTM Framework for Estimating Daily Nitrogen, Phosphorus, and Suspended Solids in CONUS Rivers:* **D Feng**, P Ramtel

1884773 *A Spatially Balanced ML Framework for Cost-Efficient PFAS Groundwater Monitoring in New Hampshire:* **F Hanif**, K Asadifakhr, W Mo, F Han

1845937 *Dissolved organic carbon in groundwater: a geospatial analysis in the lower Himalayan industrial region:* **U Rajput**, D Swami, N Joshi

2000153 *Exploring Vegetation Responses in an Amazonian Region Affected by Forest Fires, Based on ECOSTRESS and Satellite-Derived PM2.5:* **F Á Soria**

1986948 *Global Snow Attribute Mapping Tool (Global-SAM):* **N R Pradhan**, S Bhattarai, G Kloss, A M Wagner, R Talchabhadel, E J Deeb, J L Ryder, A Tavakoly, Z Courville, V Lakshmi, M Paquette, D Khona, M Lewis, G Carravone

1978408 *Impact of Hydropower on Flood Risk and Food Production – Insights from Satellite Observations and the new GRAIN Dataset:* **S Suresh**, F Hossain

1987513 *Refining Flood Forecasts with Remote Sensing and Machine Learning: A Case Study of Hurricane Ida in New Jersey:* **Z Rahimi**

1979819 *Remote Sensing and GeoAI-Based Predictive Analysis in Hydrology and Climate Models:* **A Tariq**, D Brian J, M B Junaid, R W Aslam, R Bokhari

1895524 *Remote Sensing Applications in Alfalfa Phenology and Irrigation Estimation:* **S K Sharma**, M M Mekonnen

1897168 *Spatial Identification and Dynamics of Groundwater-Dependent Ecosystems in the North China Plain: An Integrated Random Forest and Multi-Criteria Decision Analysis Approach:* **B Batsuuri**

1878326 *Absorbance-Based Spectral Sensors for Detecting Dissolved Organic Carbon: Can We Improve Their Accuracy in the Field?:* **N Lugg**, S Allen, D M Hannah, PhD, K Khamis, G Watts, S Krause

1917321 *Acoustic Estimation of Suspended Sediment Grain Size in the West Pearl River Using Multi-Frequency Echo Sounders:* **L Altamirano**, M Razaz, B Phrampus, S Dohner, C Pederson

1923805 *Developing Standardized Benchmark Datasets for Testing Quality Control Algorithm Performance for Aquatic Sensor Data:* **E Kahrizi**, J S Horsburgh

1965234 *Development of a Process-Based Nitrogen Cycle Module in the Hillslope-Link Model (HLM) to Forecast Nitrate Concentrations in Tile-Drained Basins:* **V Garcia Munera**, L J Weber, R Molina, N Velásquez

1943202 *Development of Turbidity Estimation Models for Low-Turbidity Conditions in the Tennessee River Using Remote Sensing and Machine Learning:* **A A A Hossain**, N Kuntzman,, H Qin

1958777 *Earth Observation-Based Assessment of Water, Land, and Environmental Resources in Small Transboundary Tributaries of the Syrdarya River Basin: Opportunities for Nexus Policy and Innovation:* **S Kenjabaev**, N Eshboev, Z Gafurov

1950737 *From Sensors to Insights: Real-Time EWQI Forecasting using IoT and Cloud-Based Machine Learning for Sustainable Water Quality Management:* **V V B S Kola**, A Raj, B Yadav

1946576 *Integrated hydrogeochemical assessment and contamination transport modelling in critically stressed region of the Mid-Ganga Basin, India:* **M Kumar**, B Swami, K G Singh, T Pathania

1944609 *Long-term trends in groundwater nitrate-nitrogen concentration associated with changes in agricultural practices in Korea:* **J Jang, PhD**, J Y Lee

247541
Advances in River Morphology Science, Tools and Datasets: Improving Our Understanding of Rivers *(joint with EP, IN)*

Conveners: **Venkatesh Merwade**, Lyles School of Civil Engineering, Purdue University; **Taher Chegini**, Purdue University; **Sayan Dey**, Purdue University; **Marian Muste**, IIHR—Hydroscience and Engineering

1956404 *A CONUS-scale Synthetic River Bathymetry Generation Workflow:* **T Chegini**, V Merwade

1911599 *A Machine Learning Approach to Global Calculation of At-a-Station Hydraulic Geometry (AHG) Parameters:* **J Brooks**, E Beighley, K Pieper, C N Jones

1926599 *Advancing Suspended Sediment Distribution Measurements in River Systems Using Down-looking Acoustic Doppler Current Profilers (ADCPs):* **S A Khan**, J Boldt, L G Dominguez Ruben, R N Szupiany, M Wood, J A Czuba

1967048 *Assessing River Alteration Through High Flow Characteristics:* **S Karthiraj**, S Karthiraj, H Franklin, K Periaswamy, A Aavudai

1941488 *Assessing the accuracy of different Open-source Digital Elevation Models (DEMs) in morphometric analysis of Kanchi River basin:* **V Lakshmi**, A Mondal, S Kundu, A Pandey

1916892 *Multi-Day Ahead Predictions of Harmful Algal Blooms Using Deep Learning Models:* **J Neupane**, D Sahoo, S Waickowski, I Busari, J L Ryder

1888202 *Non-stormwater Discharge Detection and Source Discrimination using Cluster Analysis (CA) with Sensor Captured Data:* **H Tang**, T F M Chui

1871732 *Numerical simulation of saltwater intrusion considering future sea level rise in the Mekong River Estuary:* **R Masuyama**, T Tebakari

1943249 *Physicochemical and microbial characterization of domestic water sources in Mefou and Afamba Division, Centre Region Cameroon:* **N M Felicia**

1975735 *Post-Processing HAB Forecasts: A Bias Correction and Elasticity Assessment Using Ensemble and Machine Learning Methods:* **R Bano**, A Zia, P J Clemins, P D Oikonomou, P D Isles, N Beckage, A W Schroth, M I Morales Velazquez, S Turnbull, D M Rizzo, K Hannoun

1977864 *Watershed Models as Tools for Identifying Causes and Sources of Pollution and for Developing Water Quality Improvement Plans:* **N R Aloysius**, A Balha, M T Yatta, K Fryer, U Abeysinghe, A Dommo, S L Hunt

1880465 *Automated Basin-Scale River Reach Segmentation using Morphologic Attributes Derived from Sentinel-1 SAR and SAM2 Deep Learning Foundation Model:* **T Mandal**, H Liu, S Cohen, D Tian, L Wang

1882341 *Automated Extraction of River Channels and Morphological Attributes from SAR Imagery Using a Fine-Tuned Deep Learning Foundation Model and Computer Vision Post-Processing Algorithms:* **H Liu**, T Mandal, L Wang, D Tian, S Cohen, S Shu

1926064 *Bankfull and Beyond: Identifying persistent reach-scale river corridor features from high-resolution topography:* **N Patterson**, J Castejon Villalobos, A Lee, B A A Lane, R M Diehl, C B Phillips

1999098 *Capturing the short-term evolution of complex river channel morphology with repeat lidar point clouds:* **M D Nelson**, T A Goudge, D C Mohrig

1938806 *Development of a Sine Function-Based Vertical Velocity Profile Model Capable of Representing the Velocity Dip:* **K Inoue**, T Tebakari

1999533 *Entropy-Based and Traditional Velocity Distribution Equations for Open Channel Flows: Adverse Channel Bed Slope Analysis:* **G Singh**, R Khosa

1929914 *Evaluating SWOT Data for Estimating River Bathymetry:* **S Chaulagain**, V Merwade, J T Minear

1986607 *Evolving Bathymetry, Emerging Errors: How Changes in River Bathymetry Impact Uncertainty in Flood Forecasting:* **S Dey**, T Chegini, A Cox, V Merwade, V Sagan

1920226 *Exploring the application of SWOT satellite data for monitoring river dynamics over Bangladesh:* **S Sharma**, N K Biswas, S Sarker

1936771 *Flow-Network Topology and Hydroconditioning for Restoring Managed Wetlands:* **U Ashrani**, Z Hilgendorf, A D Wickert

1957567 *Impacts of DEM resolutions on channel network topology-based hydrological modelling:* **S Rana**, S R Chavan, R S Rehal

1946633 *Leveraging SWOT Data for Improved Avulsion Probability Estimation in the Upper Koshi River:* **C Koppe**, B Wang, J Gearon, D A Edmonds

1969549 *Longitudinal Bed Material Changes on the Atchafalaya River, Louisiana from 1932 to 2020:* **T A Dahl**, K Harris, B Myers

1920328 *RIMORPHIS – A platform for discovering and processing river morphology data:* **V Merwade**, A Cox, I Demir, J T Minear, M Muste

1974847 *Substrate Distribution and Channel Morphology in the Delaware River Before and After USACE Main Channel Deepening Efforts (2013–2020):* **C Hughes**, J Madsen, D Fox

247927
Data-Driven Ecohydrology: Monitoring, Modeling, and Mitigating Seawater Intrusion, Compound Flooding, and Soil Salinization in Coastal Wetlands *(joint with B, EP, IN, NS)*

Conveners: **Yao Hu**, University of Delaware; **Ying Zhao**, JLU Jilin University; **Wenhong Li**, Duke University; **Jingyi Huang**, University of Wisconsin Madison

1966041 *Assessing spectra and potential applications for understanding temporal trends in coastal wetland plant traits:* **G Silva**, D A Roberts, J Y King

1931436 *Coupled Tide–Aquifer Modeling Guides Nature-Based Flood Mitigation in Lewes, Delaware:* **Z Xu**, D Golbaz, C He, Y Hu

1980498 *Designing a Saltwater Intrusion Monitoring Network in Coastal Delaware: Identifying Vulnerable Areas and Addressing Critical Monitoring Gaps:* **R Ibrahim**, R W McQuiggan, K Buell-Fleming, B Scarborough, M Grabowski, L B Ball, B J Minsley, H A Michael, K Brinson

2001532 *Drainage Ditch Mapping for Wetland Restoration and Climate Resilience:* **G Yang**, K Warnell, J Fay, L P Olander

1880974 *Estimating groundwater salinity using global remote sensing products and random forest modeling in a restored coastal floodplain:* **E Heberlein**, N D Ward, P Regier, E Fluet-Chouinard

1987431 *SWOT Discharge performance, error budget, timeline and science use cases:* **M T Durand**, C J Gleason, K Larnier, P O Malaterre, S P Coss, Y Zhang, H Oubanas, T Pavelsky

1875200 *Terrain-Based Tools to Represent River Corridors Across Scales:* **B A A Lane**, C B Phillips, G B Pasternack

1916743 *The Evolving Structure of Landscapes: Linking Basin Morphology and Energy Efficiency:* **S Raina**, D Borse, PhD Candidate, B Biswal

1940772 *Toward a Transferable Framework for Analyzing Flood-Driven River Morpho-dynamics Using Remote Sensing, Hydraulic Modeling, and Machine Learning: A Case Study from the Padma River, Bangladesh:* **A F Aishi, MS**

1856225 *Toward an Open-Source Toolkit for ADCP-Based Hydrodynamics and Sediment Transport Analysis: From Field Data to Reproducible Insight:* **M T H Tuhin**, C Mudersbach, R Hinkelmann

1900544 *What controls river pothole formation? A global analysis reveals the role of geometry and lithology:* **M N Singh**, S Tooth, H Griffiths

1972675 *Hydroclimatic factors affecting salt marsh survival and carbon burial during sea level rise in Eastern North Carolina, USA.:* **C Hoeun**, D C Barber, S Nicholson

1870451 *Hydrologic Insights from SPRUCE Warming for Data-Driven Wetland Modeling:* **X Shi**, D M Ricciuto, J Warren, T O'Meara, J Mao

1963099 *Mapping Climate-Driven Septic System Vulnerability on Virginia's Eastern Shore:* **F Hesamfar**, T Culver

1951031 *Mapping Inundation Frequency using Sentinel-1 as a Potential Driver of Coastal Freshwater Forest Mortality:* **I Arauz**, T Pavelsky, C Wang, A Sebastian

1974231 *Projecting Soil Salinity Dynamics in the Southwest Coastal Bangladesh:* **M J Hossain**, E A B Eltahir

1939359 *Quantifying Seawater-Retreat Dynamics under Declining Permeability in Reclaimed Coastal Aquifers:* **J Zhang**, C Lu, Y Hu

1915928 *Revealing the Seawater-freshwater Interface Dynamics from Estuary Water Column Temperature Observations:* **I Matić**, V Srzic, J Čarija, M Milin

1972707 *Salinity Dominates Moisture Content in Soil Water Potential at Marsh-Forest Boundaries:* **T R Junayed**, D Pratt, R Leff, K Gedan, H A Michael

1975137 *The Role of Coastal Wetlands Vegetation in Mitigating Hurricane-Induced Storm Surge Flooding in South Carolina: A SCHISM Model Analysis:* **S Bao**, H Wang, M Tarullo, L J Pietrafesa

1911296 *Untangling Dynamic Drivers of Salt Marsh Migration:* **D Pratt**, J Guimond, T Messerschmidt, J G D Jobe IV, M L Kirwan, K Gedan, S Fagherazzi, H A Michael

251260
Digital Solutions for Hydrological Process Observations and Water Resource Management *(joint with A, C, EP, IN)*

Conveners: **Petteri Alho**, University of Turku; **Hannu Marttila**, University of Oulu; **Bjørn Kløve**, University of Oulu

1889552 *Climate Change and River Regime Alterations in Arctic Region: Trends, Impacts, and Hydrological Implications:* **A Tehseen**, P Alho, E Kasvi

1993564 *Enabling Water Resource Management Through a Cloud Based Platform for Modeling and Monitoring of Hydrogeological Processes using Time Lapse Electrical Resistivity:* **R J Versteeg**, R Soltanian, S Kacur, G Partridge, D V Johnson, T Turner, M van der Werf, M de Kleine

249289
From Data to Decisions: Shaping Asia's Future through Smart Food and Water Solutions *(joint with B, IN)*

Conveners: **Alok Sikka**, International Water Management Institute; **Naga Manohar Velpuri**, ASRC Federal

1942839 *An AI-driven River Salinity Forecast and Advisory System for Climate Resilient Agriculture in Coastal Bangladesh:* **K Matheswaran**, A Behera, D R Sena, M Jampani, M R Hasib, M K Mondal

1943696 *Assessment of Antimicrobial Resistance in Urban and Peri-Urban Rivers for Informed Decision Making:* **S Yadav**

1963987 *Deriving Similitudes from Remote Sensing-based Turbidity and Observed Salinity Trends in Coastal Bangladesh for Agricultural Development:* **M Jampani**, K Matheswaran

1895682 *Development of a Smart Irrigation Scheduling System Using a Crop Growth Model for Wheat Cultivation in North-Western Indian Region:* **D Garg**, H Kumar

1986825 *Enhancing Sustainable Groundwater Governance through the Groundwater Management Information System (GMIS): A Case Study of Punjab, Pakistan:* **K Ullah**, M Hafeez, N Iqbal, M J Cheema, S Siddiqui, H Aeman, H Zafar, H Bodla, M Ashraf

1845613 *Environmental impacts of peat extraction site rewetting – Can we make a digital replicate from the restored peatland?:* **H Marttila**, A Lohila, M Liimatainen, A K Ronkanen, H Postila, M Aurela, X Lu, T Aalto, J Rinne, O Peltola, H Aaltonen, T Liedes, J Kinnunen, A Isoaho, M Niiranen, A Räsänen, K R Mustonen, T Muotka

1941705 *Hydrodiversity: Advancing a Framework to Understand River System Resilience in a Changing Climate:* **P Alho**, V Kankare, H Marttila, E Kasvi

1990165 *The Inverse Predictor-Corrector Data Assimilation method for discharge estimation in rivers (IPCDA): development, sensitivity analysis and application:* **D Poblete**, R Meneses, V Madrid

1951021 *VR and AR-Based Visualization of Water Table Dynamics:* **S Woo**, M Kim

1946534 *Estimation of Water Ponding Depth in Paddy-Dominated Landscape: A Remote Sensing-based Approach:* **S Pandey**, S Mahapatra, N M Velpuri, L Arenas Calle, P Schmitter, A K Sikka, A J McDonald, L Maduskanka, P Thilina-Prabhath

1883975 *Improvising Flood Risk Assessment Using Coupled Machine Learning- Hydrodynamic Approach:* **S Duwal**, Y Bhattarai, D Liu, P M Pradhan

1944264 *Multi-Product Water-Balance Assessment in the Arabian Peninsula and Downstream Reservoir Environmental Flows:* **N M Velpuri**, K Akpoti, R Bakuri, M D Leh, P Thilina-Prabhath, N Mizukami, S Kagone, M Khalifa, K Mekonnen, A Owusu, L Maduskanka, K Matheswaran, T Perera, G B Senay, Y Brouziyne

1890400 *SukhaRakshak AI: Harnessing Anticipatory Intelligence for Proactive Drought Risk Management in India:* **G Amarnath**, S Kapoor, D Bhatpuria, S K Padhee, K V Rao, P Schmitter, M Garcia, A K Sikka

1903313 *Towards Sustainable Water Resources Infrastructure and Management in South Asia:* **B Rajagopalan**

1963719 *Unlocking Farmer-Driven Irrigation in Southeast Asia: A Geospatial Assessment in Cambodia and Laos:* **M D Leh**, D Wickramasinghe, N M Velpuri, T Minh, P Pavelic, M Kamal, T J Krupnik

1861023 *Water-Energy-Food Nexus Tradeoffs in Managed Asian Landscapes:* **Y Pokhrel**, J Qi

252647
Harmonizing Water Quantity, Quality, and Infrastructure Data for Water Resource Management *(joint with GC, IN)*

Conveners: **Carly Hansen**, Oak Ridge National Laboratory; **Michael Meyer**, USGS WMA Observing Systems Division; **Kyle Onda**, Organization Not Listed

2002351 *Extended Hydrofabric: A Standardized Geospatial Database Integrating Water Management Infrastructure Data for Reproducible Water Management Modeling:* **P Shuai**, E Ebrahimi, S Bakar, E Triana

1918694 *Arizona Water Observatory: Scaling Up Water Data Access to Power Sustainable Water Management in Arizona:* **V Hobbins**, F Sternlieb, E R Vivoni, K Onda, C Stormer, D Storey

1882188 *Constructing geospatial database to support licensing and permitting for non-powered dams:* **H Wan**, K Tamaddun, S Barrows, J Gallego-Calderon

250712
Integrative Approaches to Urban Flooding: Modeling, Monitoring, and Mitigation Strategies *(joint with A, NH, SY)*

Conveners: **Ahmad Payab**, Drexel University; **Franco Montalto**, Drexel University; **William Solecki**, City University of New York - Hunter College

1944893 *Climate-Proofing Urban Drainage through Stress Testing and Decision Spaces: A Case Study in Vilnius, Lithuania:* **A Reder**, L A Gomez Mogollon, L Napolitano, K Viršilaitė, G Rianna

1995128 *Integrated Stormwater and Shallow Recharge Modeling for Urban Flood Mitigation in West Tennessee:* **P Reyes-Garcia**, X Su, B A Waldron

1856959 *A Deep Learning Approach for Real-Time Urban Flood Inundation Forecasting at Metropolitan Scale:* **A Samadi**, H Moradkhani

1932697 *A Temporal Graph Convolutional Network Approach for Leveraging Spatial and Temporal Features for Street-Scale Urban Flood Forecasting:* **J Jeong**, J L Goodall

1949136 *AI-Driven Camera Monitoring and PCSWMM Modeling of Current and Future Urban Flood Risk in Marlton, Camden, NJ:* **N Adhikari**, A H Payab, M Tedesco, F A Montalto

1964032 *An Interactive GIS-Based 3D Flood Simulation Tool to Support Resilient Community Design:* **D Pisut**, D Djokic, N Shephard

1991521 *Multi-Criteria Geo-Spatial Evaluation System for Managed Aquifer Recharge Site Selection Using Subsurface Dams: From Screening to Site-Specific Assessment:* **M S Bae**, S Lee

2003102 *Scalable Water and Sanitation Monitoring Across Africa via AI-Driven Satellite and Survey Data Integration:* **A Lahlou**, O Echchabi, N Talty, J M Manto, K L Lam

1914364 *Sedimentation impacts to United States water storage and water resiliency:* **M A Foster**, A Eckland, A Hurst

1938328 *SWAT-Salt Calibration for the Upper Red River Basin Aided by Transfer Learning and Continuous Water Salinity Observations:* **K Khodkar**, A Mirchi, R T Bailey, K Wagner

1921829 *Synthesizing Infrastructure and Environmental Data for U.S. Reservoirs to Identify Innovations and Gaps in Sediment Management:* **A Chu**, C Hansen, J Lee, M Musa

1907532 *Assessing Ecosystem Service Delivery of Nature-Based Solutions in Urban Water Management:* **M G Di Chiano**, G Becciu

1944144 *Assessing Flood Risk Inequality in Global Railway Systems under Climate Change and Demographic Transitions:* **C Liang**, M Guan

1882855 *Assessment of Threshold Rainfall and Urban Flood Tolerance Index in India's Smart Cities:* **A Kumar**, A Rashiq

1957706 *Deep Learning-Based Urban Flood Hazard Mapping Using Multivariate Geospatial Data:* **S Saumya**, S S R, S K Regonda

1877658 *Development of an Optimal Monitoring and Operational Framework for a Deep Stormwater Drainage Tunnel in Seoul, South Korea:* **S Yoon**, S H Hwang, H Choi Dr, M S Kim, J D Kang

1877545 *Development of Climate-Responsive Maintenance Standards for Rainwater Gutter Systems in Seoul, South Korea:* **H Choi**, S Yoon, S H Hwang, M S Kim, J D Kang

1941792 *Enhancing the Efficiency of Refined Urban Flood Simulation Based on the Combination of Finite Volume Method and Cellular Automata:* **B WANG**, Y Yu, X Cao, H Qin

1945915 *Enhancing Urban Flood Monitoring with Machine Learning: River Stage Estimation Using Surveillance Camera Imagery:* **Y Shibuo**

1983705 *Evaluating a Multivariate Data Assimilation Framework for Urban Flood Forecasting : From Synthetic Tests to Real-World Application:* **B Kim**, Y Lee, S Lee, S J Noh

1956117 *From rainfall to risk: An integrated hydrologic-hydraulic modeling approach in a data-scarce Himalayan city:* **N S Basnet**, P Upreti

1900595 *From Space to Street: Satellite-Driven Urban Flood Intensity Mapping:* **A Haider**, R Khanbilvardi, A Mondal, N Devineni

1925748 *From Stormwater Management to Flood Mitigation: A Decade of Flood Susceptibility Trends in Tianjin Under China's Sponge City Initiative:* **H Tian**

1982304 *Hydrologic Modeling Meets Community Voices: Advancing GSI in Northeast Wilmington:* **R Zobel**, E Rodden, V Tripuraneni, V Perez, C B Voter

1887348 *Importance of High-Resolution Wind Gust Modeling to Improve Urban Flood Risk Assessment:* **N A Srivastava**, M Chester, G Mascaro

1858851 *Improving Urban Flood Detection with a New Remotely-sensed Index Developed on Canal Cities:* **Q Euler**, C Gerlein-Safdi

1990453 *Informing Compound Flood Mitigation Strategies Across Scales: Blurring the Lines Between Hydrologic and Hydraulic Models.:* **E Coon**, S S Rathore, M K Wang, S Barbosa, K Lieberknecht, P Passalacqua

1948874 *Insights on the Value of Nature-Based Solutions for Pluvial Flood Mitigation from a Case Study in New York City:* **S Annis**, M G Badas, G Mascaro

1900075 *Integrating Hydrodynamic Modeling, Remote Sensing, and Machine Learning for Urban Flood Simulation and Prediction in New York City:* **S Kamali**, R Khanbilvardi

1953464 *Investigating near future flood risk in Harris County, Texas:* **N Choi**, K Powlen, N Pasley

1886211 *Machine Learning Surrogate Modeling to Improve Urban Flood Predictions:* **A Bhandari**, Y Bhattarai, S Sharma, R Talchabhadel

1859757 *Mitigate Urban Floods Caused by Extreme Rainfall Using Green Stormwater Infrastructures Integrated with the Existing Drainage System at City Scale:* **N She**

1851148 *Modeling Coastal Flooding and Assessing the Effectiveness of Nature-Based Solutions for Improved Urban Flood Resilience:* **M S Rahman**, P Biber

1955086 *Modeling Compound Flood Risks in New York City: Insights for Resilience Planning under Future Storm Scenarios:* **M Benetti**, G Nolde, M Pilotti, Y Miura

1956212 *Modeling the Hydrologic Impact of Technosol Rain Garden Design on an Urban Watershed in Houston, TX Using the Soil Water Assessment Tool (SWAT):* **D Williams**, B M Wyatt

1997462 *Optimizing Green Infrastructure and Nature-based Solutions for Urban Flood Mitigation:* **S Nam**, M Kim

1873484 *Physically-Informed Deep Learning Model for Floodwater Depth Estimation in Urban Areas using Remote Sensing:* **J Blay**, T Gebre, L H Beni

1966546 *Physics-Informed Deep Learning Urban Flood Forecasting Under Climate Change and Urbanization across the Dallas–Fort Worth Metroplex:* **A Tamadoni**, H Qiu, D Hyndman

1977753 *Process-Based Hydrologic Modeling of Urban Runoff Dynamics under Climate and Land-Use Change: Application to the Dallas–Fort Worth Metroplex:* **H Qiu**, A Tamadoni, D Hyndman

1920271 *Prototyping a Vision-Based Flood Extent Sensor with On-Device Image Processing:* **V L Sobral**, Y Wang, J L Goodall

1895474 *Quantifying Sensitivity and Uncertainty in 1D/2D Urban Flood Models: A Case Study from Harrison Avenue, Camden, NJ:* **A H Payab**, T Feeney, L Bivona, S Schreiber, F A Montalto

1930884 *Rapid Evaluation of Nature-Based Solutions for Urban Drainage System Resilience Using Machine Learning Surrogates:* **S Xi**, Y Hu

1899756 *Scaling Effects of Prairie Restoration as a Flood Mitigation Strategy in Fort Bend County:* **E Siemens**, T Furrh, P B Bedient

1945573 *Simulating Urban Floods in Data-Scarce Regions Using a Minimalist Approach:* **R Singh**, R Das Bhowmik

1959761 *Spatio-temporal evolution of extreme rainfall and urban flooding in Indian Cities:* **P A Laksman**, H Solanki, K Gaurav, V Mishra

1933226 *The Eco-Economic Effects of Perennial Coastal Flooding in Lagos State, Nigeria.:* **P E E Ndimele**, A E Ojewole, O T Ayodele, F C Ndimele, J A Shittu, K M Ositimehin

1881323 *Transitions in Urban Flash Flooding: A Multi-factor Analysis of Changing Climate and Human Impacts on Flood-Prone U.S. Inland Cities (1996-2023):* **Y Y Wu**, A Madson

1888545 *Transportation and Stormwater Infrastructure (TSI) Planning Integration in an Urbanizing Region near the Dallas-Fort Worth Metroplex:* **K Greenwood**, S Mahat, A Paudel, D Li, S Abolmaali, J Cotter, M Lepinski, N Fang, Y Zhang, F H Jaber, E Rophael, J Neal, K Zielke, S Alvarez

1938994 *U-RNN high-resolution spatiotemporal nowcasting of urban flooding:* **X Cao**, B Wang, Y Yao, H Qin

249314

Intelligent River Basin Management: Advances in Monitoring, Modeling, and Managing Water Resources

Conveners: **Manabendra Saharia**, Organization Not Listed; **Bhagu Chahar**, Indian Institute of Technology Delhi; **Balaji Rajagopalan**, University of Colorado Boulder; **Rajib Bhattacharjya**, Indian Institute of Technology Guwahati; **Ishita Afreen Ahmed**, Department of Civil Engineering, Indian Institute of Technology Delhi

1848253 *Open-Source Water Systems Modeling Coupled with Deep Learning to Advance Water Availability Assessments in the Delaware River Basin:* **P M Reed**, T Amestoy, C Y Lin

1941687 *A framework for operational medium-range flood inundation forecast for India.:* **P Deka**, V Prakash, N K Kondapalli, M Saharia

1941545 *A Gauge-based Adaptive Localization Approach for Improved Ensemble Data Assimilation in Hydrologi-Hydrodynamic Models:* **V Prakash**, M Saharia

1870125 *Applying Computer Vision Approaches to Stream Gauging and Hydrological Monitoring:* **D Ritter**, N Hutley

1955429 *Assessing the Impact of Climate Change on Brahmaputra River Streamflow Using GCMs and Machine Learning:* **S Shukla**, V Kumar, K Luxmi, R K Bhattacharjya

1944249 *Causal Attribution of Flood-Generating Mechanisms behind Severe Floods in India:* **I A Ahmed**, M Saharia

1885379 *Flood Inundation Mapping Using Multi-Temporal SAR Data and Sequential Nature-Inspired Optimization of XGBoost for Intelligent River Basin Management:* **I Ansari**, A Rahman

1935457 *Graph Neural Network-based Post- Processor for Ensemble Streamflow Over the Narmada River Basin:* **A P**, M Saharia

1939107 *High-Resolution CMIP6 Downscaled Precipitation And Temperature Dataset Over South Asia:* **N Bhattarai**, M P Clark, M Saharia

1945116 *High-Resolution Flood Event Database for Fluvial Floods Across the Indian Subcontinent.:* **T Parashar**, S Chakma, M Saharia

1925046 *Integrated Riverine Flood Warning System Coupling River Stage Predictions with Hydraulic Modeling:* **N Rastogi**, B Rajagopalan, T M Hopson, J T Minear

1964789 *Integrating Aquatic Drone, Autonomous Surface Vehicle, and Unmanned Aerial Vehicle Platforms for 3D Flow and Water Quality Mapping in Riverine Systems:* **J Seo**, E Miliutina, B Akinade, B Alexander, J Balthasar, M C Gyves, A Song, H Liu, R R Lotspeich

1940127 *Locally Relevant Streamflow from Large Hydrological Ensembles: A Deep Learning Based Post-Processing Approach:* **B Magotra**, M Saharia

1939257 *Modeling Future Streamflow Dynamics Under Climate Change Scenarios Using SWAT in the Western Himalayas: Implications for Adaptive Water Resource Management:* **A Rahman**, I Ansari

1939405 *Quantifying Riverbed Clogging in Recharge Systems: Parameter Sensitivity and Model Comparison:* **M Tripathi**, A M Tahir, A R Khan, P K Yadav, B R Chahar, T Grischek

1937257 *Rapid Flood Inundation Mapping and Flood Hazard Zonation using Sentinel-1 SAR data, a Case Study of Kopili River in Assam, India:* **K S**, D J Sarmah, R K Bhattacharjya

249442

Machine Learning, Physics, and Generative AI for Hydrologic and River Modeling

Conveners: **Hernan Moreno**, University of Wyoming; **Chaopeng Shen**, Pennsylvania State University Main Campus; **Praveen Kumar**, University of Illinois at Urbana Champaign; **Laura Alvarez**, University of Texas at El Paso; **Leila Hernandez Rodriguez**, Lawrence Berkeley National Laboratory

1887074 *A Comparative Study of Physics-Informed and Data-Driven Neural Networks for Compound Flood Simulation at River-Ocean Interfaces: A Case Study of Hurricane Irene:* **D Feng**, Z Tan, H Du, D Xu, C W Yu, Q He

1876789 *A hybrid Approach for River Flood Forecasting by Combining a Hydrodynamic Flow Simulation Model and Deep Learning Networks:* **K S Jun**, J G Lee

1927926 *A Hybrid SWAT–Machine Learning Framework for Streamflow and Sediment Simulation in the Big Sandy River Basin, Kentucky:* **D Oli**, B Gyawali

1963066 *A Modular Physics-Inspired Hybrid Machine Learning HBV Model with Dynamic Parameter Selection for Streamflow Prediction:* **R Madathi Parambath**, J Rajasekharan

1930875 *Accurate and Efficient Hourly Streamflow Downscaling or Prediction with Diffusion Model:* **W Yang**, H Ji, C Shen

1850765 *Autonomous Scientific Reasoning for Hydrological Model Configuration: An AI Agent Approach to Iterative SUMMA Optimization:* **D Eythorsson**, M P Clark

1940418 *Enhancing Parameter Calibration in Land Surface Models Using a Multi-Task Surrogate Model within a Differentiable Parameter Learning Framework:* **W Xie**, H Li, K Yoshimura

1932419 *Estimation of Saturated Hydraulic Conductivity from Environmental Covariates: Machine Learning Approach:* **B Sinshaw**, S Nandi, T A Ghezzehei, J H Viers, M Safeeq

1971049 *Forecasting Hydrological Extremes in the Fraser River Basin using a Hybrid LSTM-GRU Deep Learning Model:* **M Ucun**, S Bakar, V Lakshmi

1923131 *Hybrid Deep Learning Models for Streamflow Prediction and Hydrologic Understanding in Small Watersheds: A Case Study of the Rivanna River, Virginia:* **A Aryal**, V Lakshmi

1953366 *Indirect Parameter Optimization of Hybrid Flood prediction Models Using SHAP-Based Explainable AI:* **F Darroudi**, M Danesh-Yazdi

1974043 *Interpretable Equations for Reservoir Temperature Prediction Using Symbolic Machine Learning:* **I Suaza Sierra**, H A Moreno

1875924 *Introducing Knowledge Distillation for Deep Learning-Based Hydrological Prediction:* **M S Jahangir**, J Quilty, S Steinschneider, J F Adamowski

1865067 *KAN-Matrix: Visualizing Nonlinear Pairwise and Multivariate Contributions for Physical Insight:* **L De la Fuente**, H A Moreno, L Alvarez, H Gupta

1947219 *Leveraging Large-Scale Meteorological Geospatial Information to Predict Snow Water Equivalent with Machine Learning:* **S Naser Neisary**, J M Frame

252257
Optimizing Natural Resources for Agricultural Sustainability: Technological Advances and Applications *(joint with B, GC, IN, SY)*

Conveners: **Racha Elkadiri**, Western Michigan Univ; **Henrique Momm**, Organization Not Listed

1929755 *Advancing Revised Universal Soil Loss Equation, Version 2 (RUSLE2) Development: Integrating Cutting-Edge Science and Cloud-Based Innovations for Transformative Soil Erosion Modeling and Land Management:* **C J G Darnault**, M Ghorbani, G Genc Kildirgici, B Ghimire, C Sisk, K Cunningham, J Calhoun, H Momm, D C Yoder, D Vieira, R Bingner, M Locke, R Wells, G Ferruzzi

1973603 *Long Short-Term Memory Model to Forecast River Ice Breakup Throughout Alaska USA:* **J Kumar**, R Limber, F Hoffman, J P Schwenk

1928124 *Machine Learning-Based Streamflow Simulation for Large-Scale River Networks: Enhancing Data-Driven Channel Routing with Physics-Based Data Augmentation:* **X Zheng**, A Basu, K Chinnayakanahalli, K A Sawicz, H Chowdhary

1888429 *Modeling Groundwater Levels by Latent Space Gaussian Process Regression with Physics-Informed Constraints from InSAR Data:* **A Pradhan**, Z Liu

1883749 *Physical-informed Graph Learning for Networked Water Systems Flow Monitoring:* **X Fan**, L Luo

1865106 *Scoring Rule-Based LSTM Models for Flow Forecasting:* **M Farmani**, A Oliazadeh, PhD, H Tamiru, F Yavari, A Amanambu, J M Frame

1864395 *Soil Moisture as an Alternative Approach Towards Better Water Management in Scarce Data Regions:* **K Ait Naceur**, E M El Khalki, L Brocca, A Hadri, O Jaffar, M E Saidi, V Simonneaux, S Gascoin, M Rachdane, A Chehbouni

1940166 *Spatiotemporal Super-Resolution of Urban Flood Predictions using Multimodal Deep Learning:* **H Choi, Integrated Master's and PhD Program**, H Woo, D Rhee, H Ryu, S J Noh

1866236 *Sub-Pixel Soil Moisture in Arid Ecosystems: From Data-Driven Models to Interpretable Equations:* **S N Marquez**, H A Moreno

1985791 *The power of many: machine learning ensembles to improve hydrologic predictions:* **C Varadharajan**, J Willard, Y H Wang, F Ciulla, P Ren, M Mahoney

1911315 *Assessing the Impacts of Agricultural Practices on Soil Water Dynamics in Occitanie (France) Using Eddy Covariance Data and a Land Surface Model:* **M Tauveron**, A A Boone, J P Sarthou, T Tallec, A BRUT

1928427 *Forecasting Future Soil Erosion Risk in Agricultural Landscapes of the Southern United States: Integrating Machine Learning, Environmental Change Scenarios, and Biophysical and Chemical Predictors for Sustainable Land Management:* **M Ghorbani**, C J G Darnault, S Shojaeezadeh, M Al-Wardy, M Nikoo, S Campbell, M Parlange, H Momm, D C Yoder, G Ferruzzi

1888598 *HEC-RAS 2D Sensitivity Analysis of DEM, Mesh Resolutions, and Breaklines for the Roundaway Bayou-Quiver River Watershed in the Mississippi Delta:* **K Greenwood**, B Devkota, A Paudel, S Mahat, D Li, E Langendoen, L Heintzman, M A Locke, M T Moore, R Bingner, N Fang

1928882 *Identifying Threshold Conditions for Ephemeral Gully Formation in Agricultural Watersheds:* **K Moore-Freeman**, H Momm, T Seever, R Wells, R Elkadiri, R Bingner

1984044 *Impacts of Cropping Systems and Cover Crops on Soil Water Dynamics and Crop Water-Use Efficiency:* **M Soni**, A Y Sheshukov, J Aguilar

1948076 *Integration and optimizaion of urban water resources in agricultural systems:* **J Tamás**, A Nagy, A Szabó

1963237 *LIMITATIONS OF IMPROVED AGRICULTURAL TECHNOLOGIES ADOPTION IN UGANDA:* **D Kisitu**

1926685 *Modeling Ephemeral Gully Susceptibility in Agricultural Watersheds:* **G Hosford**, R Elkadiri, H Momm, T Seever, R Wells, K Moore, R Bingner

248221
Practical AI Solutions for Hydrological Forecasting *(joint with C, GC, IN, NH)*

Conveners: **Ziheng Sun**, George Mason University Fairfax; **Nicoleta Cristea**, University of Washington Seattle Campus; **Annie Burgess**, Earth Science Information Partners; **Justin Pflug**, University of Colorado

2001256 *Assessing the Accuracy of AI Models in SWE Prediction:* **B Huang**, J Sun, R Gao, Z Sun

1993316 *A Machine learning Approach for CMIP6-based Streamflow projections in Peruvian Andean Basins:* **N Velasquez**, J Guerrero-Gallego, L Villaordoña

1891421 *Advancing Seasonal-to-Subseasonal Predictions of Net Basin Supply Components in the North American Great Lakes Using Machine Learning:* **L Fitzpatrick**, D Jones, M McAnear, Y Hong, L M Fry

1928605 *Democratizing Weather Prediction: A Blueprint for Operational AI-based Forecasting to Address Real World Challenges:* **A Marchakitus**, K Kowal, C Aitken, M Gupta, R Masiwal, W R Boos, A Jina, P Hassanzadeh

1857190 *Generative postprocessing of HRRR QPF for improved flash-flood forecasting:* **N Karki**, N Samal, H Moradkhani

1982324 *Hybrid Model for Rainfall-Runoff Prediction: A Combination of Time Series and Non-Time Series Architectures:* **M Chen**

1932084 *Improving Deep Learning Streamflow Forecasts by Explicitly Training with Real-world Precipitation Forecasting:* **W Ouyang**, Y Luo, L Ye, S Xu, Y Chai

1958068 *NeuralFAO56: Leveraging Neural Network for data driven FAO56-Based Irrigation Demand Estimation:* **A Neupane**, N Zafarmomen, V Samadi

1951985 *Quantifying Spatio-temporal Soil Erosion using RUSLE model: A Case Study in the Meghna River Basin:* **M S Hossain**, S Khadem, S A Toufiq, G M S A Helal

1855681 *Systematization of agricultural information for rational crop monitoring in a context of sustainable agriculture:* **L R E Asie**, P Celicourt, PhD, A N Rousseau

1921799 *The Annualized AGricultural Non-Point Source (AnnAGNPS) watershed pollution model:* **H Momm**, R Bingner, R Elkadiri, K Moore

1914333 *The Water Footprint of a Growing Livestock Industry:* **M Bairouti**, A Mansaray

1922105 *Incremental Learning for Probabilistic Forecasts of Water Levels at Virginia Beach, Virginia:* **D McSpadden**, C Kumar, A H Mohammed, M Schram, A Udomvisawakul, S Katragadda, A Kasparian, K Rajput, M Hasan, B Roy, Y Wang, J L Goodall, H Richter

1998602 *Integration and Evaluation of Operational Machine Learning Hydrological Forecasts in Reclamation Regions:* **L K Read**, C Frans, L A Bearup, M Feen, M Elkurdy

1982287 *LSTM-Enhanced Streamflow Forecasting for California-Nevada Region: a Post-Processing Framework for CHPS and WRF-Hydro:* **M Xiao**, M Pan, Y Yang, Q Cao, T Dixon, G Lewis, L Su, R Hartman, M J Deflorio, J Kalansky, L Delle Monache, M Ralph

1867574 *Machine Learning Generated Streamflow Drought Forecasts for the Conterminous United States (CONUS): Developing and Evaluating an Operational Tool to Enhance Sub-seasonal to Seasonal Streamflow Drought Early Warning for Gaged Locations:* **P Goodling**, J C Hammond, J Diaz, H Corson-Dosch, A Heldmyer, S D Hamshaw, R McShane, J Ross, R R Sando, C Simeone, L Staub, W D Watkins, M Wieczorek, K Wnuk, J A Zwart, J Marshall

1988005 *Machine-Learning Approach to Predict the timing of Spring Breakup of River Ice:* **M Ayyad**, M Temimi, B Cherif

1989676 *Physics-Informed Graph Neural Network for SWE Forecasting:* **Z Sun**, K Zhou, B Cui, N C Cristea, A B Burgess, M Liu

1872653 *Temporal Super-Resolution for Flood Forecasting using Deep Learning in Norfolk, Virginia:* **C Kumar**, D McSpadden, M Schram, H Richter, Y Wang, B Roy, J L Goodall

248317
Quantifying Uncertainty in Hydrologic Models

Conveners: **Lijing Wang**, Stanford University; **Juliane Mai**, Helmholtz Centre for Environmental Research-UFZ; **Peishi Jiang**, University of Illinois at Urbana Champaign; **Niklas Linde**, University of Lausanne; **Lijing Wang**, Stanford University

1865550 *A Solution for Ensemble Mean and Variance of Drawdown for Radial Flow in a Heterogeneous Confined Aquifer:* **B Malama**

1918795 *Advancing a fine-resolution global lake-river modeling framework:* **Y Ma**, M S Sikder, J Wang

1998032 *Applications of Analytical AI in Geosciences:* **A Koshulko**, O Koshulko

1867149 *Assessment and Uncertainty Quantification of Terrestrial Water Storage Projections Under Climate Change Using Large Ensemble Simulations of Global Hydrologic Models:* **J Kim**, K H Ahn

1856870 *Baseflow Data Assimilation to Improve Hydrologic Modeling through Enhanced Representation of Groundwater–Surface-Water Interactions:* **P Ghaneei**, E Foroumandi, H Moradkhani

1976619 *Calibrating Geologic Texture Fields in a GW–SW Model with AEM Data Using PEST-IES:* **L Scantlebury**, T Harter

1847360 *Differentiable Physics-Informed Machine Learning Enhances High-resolution Hydrologic Modeling:* **Y Song**, C Shen, H Ji, T Bindas, L Lonzarich, J Liu, N J Frazier

1850247 *Get your monies worth: Systematic targeting of hydrologic model uncertainty reduction:* **J D Smith**, S Foks, J Dickinson, J Marshall

1957818 *Incorporating Empirical Hazard Uncertainty into HEC-FDA:* **D Ho**, R Nugent Jr I, E Heisman

1977876 *Numerical Modeling and Uncertainty Quantification of Groundwater Pumping Tests in a Heterogeneous Subsurface to Guide Field Campaigns:* **J Im**, K F Walker, S Mishra, D Dwivedi, L M Lui, M De Raad, H Lesea, D Joyner, J Marquis, Y Wang, J Zhou, T Northen, M W Fields, A P Arkin, T Hazen, M E Newcomer

1847494 *Process-oriented Global Hydrological Assessment: Leaf-Area-Index Impact on Terrestrial Water Balance:* **C Ardilouze**, G Narváez

1943878 *Quantifying Key Parameter Sensitivities for Water Table Depth in Hydrological Schemes of CoLM-PSUADE:* **T Wu**, S Zhang, C Yang, Z Wei, H Yuan, W Dong, X Yang, Y Dai

1932562 *Quantifying Pesticide Transport Pathways Using a PWC Model and Global Sensitivity Analysis: A Case Study of Chlorothalonil in South Florida:* **W Mao**, M Cecil, E Ahmed S Sr, M A Bremedhinb, P Babushkin, M Ye

1884181 *Satellite-based Precipitation and Model Uncertainty Quantification for Deep Learning-based Streamflow Prediction:* **K Peng**, D B Wright, L Yan, A Alexander, Y Derin

1939157 *Toward Accurate and Scalable Riverine and Coastal System Characterization:* **J H Lee**, P Rivera Casillas, Z Zody, S Dutta, M Farthing

1922329 *Uncertainty Modeling and Detection of Dynamic Shifts in Rating Curves to Improve the Reliability of Streamflow Records:* **S V Kona**, R Das Bhowmik, M C Peel, A W Western

1857090 *Understanding Simulation Uncertainty in Compound Floods: Sensitivity to Forcing and Model Parameters:* **C Wang**, F J Gomez, S M Mosavat, S Radfar, H Moftakhari, H Moradkhani

247656
The MacGyver Session: Novel, Exciting, Self-Made, Hacked, and/or Improvised Sensors, Data Acquisition, and Data Transmission Solutions to Understand the Geosphere (Poster) *(joint with IN, NH, NS, SA)*

Conveners: **Chet Udell**, Oregon State University; **Austin Madson**, University of Wyoming; **Rolf Hut**, Department of Water Management, Faculty of Civil Engineering and Geosciences, Delft University of Technology, Delft, the Netherlands; **Andrew Wickert**, University of Minnesota

1977678 *A Low-Cost and Rapid Deployment Flood Level Observation System:* **I Gul**, S Diaz, P Udenze, J Balthasar, L Davis, D Li, C Wilson, R R Lotspeich

1974431 *An Affordable and Open-Source PIV System for River Velocimetry Enabled for IoT and Designed for Citizen Science:* **S K Do**, K Corcoran, B Poudyal, R Johnson, L Pu, A Stokes, C Wilson, R R Lotspeich, V Lakshmi

1998706 *Colocated Testing of Low-Cost Open-Source and High-Cost Proprietary Environmental Sensing Systems:* **P Marchetto, PhD**, K Kuehl, S Selbe

1894210 *Development of an Integrated Underwater Imaging System for Real-Time Bubble Characterization and Flow Measurement:* **B Wang**, X Ying

1874403 *Evaporometer: A Low-Cost, Open-Source, Load-Cell-Based Device for Collecting Rainfall and Evaporation Data:* **D Nguyen**, E Hockert, M Muzaffarov, Z Vania, C Udell, J S Selker

2002353 *From Breadboard to Product: The Journey of an Environmental Sensing System from Finding Need to Purchasable Product:* **S Selbe**, J Lewallen, B Gawthrop, P Marchetto, PhD, L Starke, S Allen, K Kuehl, P Gupta

1857755 *High Precision Zero-friction Magnetic Dendrometer:* **N Le**, L Rasmussen, M Zamora Re, D Zheleva, J L M Van Haren, J S Selker, C Udell

1862671 *Open Source Arduino Weather Station; Meet WeatherChimes:* **E Zimmer**, C Jacklyn, R Graham, S Thiruppathi Ahila, W Richards, A C Johnson, J S Selker, C Udell

1856827 *Openly Published Environmental Sensing (OPEnS) | Advancing Open Environmental Instrumentation:* **C Udell**, J S Selker

1891809 *Scalable Surface Water Monitoring Using a Low-cost Stilling Well with Embedded Sensors and LoRaWAN Integration:* **C Finney**, A K Manda, S M Moysey, B Dessimond

1874709 *SmartRock - Accurate and Low Cost Water Quality Monitoring Sensor Suite:* **T Slaght**, C Milford, B Truong, C Udell, J S Selker

250048
Water and Society: Translating new digital solutions and modeling advancements into improved water management and decision making (cosponsored by EGU: European Geosciences Union) *(joint with IN, SY)*

Conveners: **Julie Shortridge**, Virginia Polytechnic Institute and State University; **Hannu Marttila**, University of Oulu; **Marko Keskinen**, Aalto University

1938625 *An Integrated Remote Sensing and Computer Vision Techniques for Automatic Detection of Ancient Subsurface Water Systems:* **D Kumar**, D Tikare, P Kbvn, U B, S K Regonda

1983577 *Bridging Human Perception and Disaster Risk Management: The Role of City-Scale Digital Twins in Urban Resilience:* **M Haraguchi**

2004033 *Climate-adjusted probability of default model: A framework for integrating physical climate risk for residential mortgage:* **S Ma**, Z He, C Craig, J Porter

1975997 *Developing a Climate-Smart Decision Support System for Water Allocation in the Upper Syr Darya Basin under Climate Change:* **J Huang**, I Rocabado, J Coma, B D'Haeyer, L Alcamo, T Schaffhauser, G Baviskar, P K Rai, R J Hogeboom, H Paeth, M Disse

1942462 *Hydroclimatic Extremes in a Warmer World: A Storyline-Based Assessment of the 2024 Valencia Flash Floods:* **J J Leal Rojas**, A Chandrasekar, S Muller, M Kelbling, V S Lüdke, A Marx, S Thober

1944153 *The Güralp Rapid Deployment Kit ("RDK") and Güralp Data Centre ("GDC") – a turnkey solution for seismic and geophysical data acquisition:* **N Watkiss**, J Lindsey, P Hill, F Restelli

1944479 *The Open Digital Environmental Lab:* **E Levintal**, T T Nguyan, E Freiman, D S Orozco, T Norman, R A Kahsu, A Altman

1895585 *The Portable Common Sensor Platform Prototype:* **C M Calvelage**, D Mann, M Staats, C Pyatt, A Scire, K Arnell, G Chavez, W W Gallaher, N Bayou, W Johnson, G Karslioglu, G S Mattioli, E Makarewicz

1968389 *Think Differently: Exploring Non-Proprietary Hardware Solutions for Remote Data Collection:* **E Morse**, S Cowan, A Vlahgiannis, M Evans, M O'Leary, R Lieblappen

1889106 *Three-globe thermometer for accurate air temperature measurements without radiation shield:* **A Maruyama**, K Kimura

1865643 *Wisp: Smoke Taint Sensor:* **S Emmons**, A Hosford, D Crocker Jr, A Chebrolu, J S Selker, C Udell, E Tomasino

1866840 *Leveraging Digital Tools for Inclusive and Sustainable Rural Water Management: Lessons from Kerala's Jalanidhi Initiative:* **S Babu**

1955047 *Linking Parametric Uncertainty to Ecosystem Service Outcomes in a Decision-Support Groundwater Model:* **L Swenson**, S C Zipper, C Wardropper, N Afzal, A Zwickle

1845641 *Modelling nature-based solutions for nitrogen and phosphorus reduction in northern agricultural catchment: SWAT+ model and digital tools to help decision making:* **H Marttila**, J Bhattacharjee, N Aga, M H Taki, P Valkama, J Aroviita, K Rankinen

1954158 *National-scale modeling tools support the United States National Integrated Water Availability Assessment:* **E Stets**, A Archer, M L Erickson, PhD, PE, G Gorski, A Martinez, L Medalie, M A Scholl, J Marshall

1861075 *Progress toward regular National Integrated Water Availability Assessments for the Nation: Trends in water supply components from 1983–2021:* **G Gorski**, O Miller, E Stets, A Archer, M A Scholl, A Martinez, B Linhoff, M F Meyer, S A Archfield, J Marshall

1847531 *Sustainable Water Governance and Digitalization: Status and Needs of Public Sector Actors in Finland:* **A Malmström**, M Lantto Klein, M Pihlajamäki, M Keskinen

1878744 *The Chesapeake Global Collaboratory: Implementation and Case Studies:* **V Coles**, R R Hood, K Rose, J M Testa, R J Woodland

1870687 *Water Scarcity Attribution in the Western U.S. using Interpretable Machine Learning Emulators of Process-Based Hydrologic Models:* **Y Luo**, D S Grogan, S Zuidema, R B Lammers, J Zheng, M Lisk, K Fisher-Vanden, S Olmstead, V Srikrishnan

250043
Wireless Data Networking for Distributed Sensing in the Earth Sciences: Connecting the Sciences *(joint with B, IN, NH, NS)*

Conveners: **Cian Dawson**, US Geological Survey; **Vinit Sehgal**, Louisiana State University; **Stijn Wielandt**, Lawrence Berkeley National Laboratory; **Peng Fu**, Louisiana State University; **Vinit Sehgal**, Louisiana State University

1977321 *Data Mobility for Field Science: Towards a future where science users are first class customers supported by research and engineering networks:* **A Wiedlea**, S Wielandt, C Dawson

1933303 *Design Methods for Remote Solar-Powered LoRaWAN-based Sensor Network Infrastructure:* **S Selbe**, J Lewallen, S Allen, V Zaunbrecher, V Deblauwe

249677
≥3D: Virtual Reality, MR/AR/XR, and Sonification Tools to Showcase and Explore Multidimensional Data in Earth and Space Science *(joint with ED, GC, H, SY)*

Conveners: **Kristina Collins**, HamSCI Community; **Alexandra Boghosian**, Organization Not Listed; **Jaime Aguilar Guerrero**, Embry-Riddle Aeronautical University

1861854 *Virtual Reality Field Trip: Ireland Storms and Interactive 3D Coastal Boulder Deposits:* **H Spero**, K Miller, M Bourke, A Heet, K Quardokus Fisher

1941605 *Expanding Earth Mission Control Through Immersive 3D Visualization of Sea Level Rise and Planetary Analogs Using Earth Observation and Real-World Terrain Data:* **L Bensch**, R Connolly, PhD, M Rathnasabapathy, C Paige, L De Bonet, D Newman

1944994 *Data Sonification Tools to Advance, Accelerate, and Verify Scientific Research:* **J Cooke**, J Hannam, G Foran

248365
Actionable AI Datasets, Tooling, and Workflows for Earth Informatics *(joint with GC, SY)*

Conveners: **Ziheng Sun**, George Mason University Fairfax; **Douglas Newman**, Raytheon Company Riverdale; **Stephen Olding**, NASA Goddard Space Flight Center; **Xiaogang Ma**, Rensselaer Polytechnic Institute

1905878 *Empowering Undergraduate Research Through LoRaWAN-Enabled Sensor Networks: A Coastal Salt Marsh Case Study from the FS3 Critical Zone Summer Program:* **M Field**, A K Manda, M Sirianni

1962848 *Expanding access to environmental monitoring through a distributed sensing approach using LoRaWAN:* **B Dessimond**, A K Manda, S M Moysey, R Howard, C Finney

1895783 *LaCADIAN: An Integrated Architecture for Field-Scale Environmental Sensing and Telemetry in Louisiana:* **M N A Agyiri**, V Sehgal, S D Conger

1948032 *Many Hands Make Light Work: a Mathematical Justification for Distributed Sensing Systems in Environmental Measurement:* **P Marchetto, PhD**, A Kroo, S Selbe

1953197 *Making Image Analysis Accessible to BLV: IDATA and the Afterglow Access Software:* **T Spuck**

1961235 *Toward Smarter Buildings: XR-Enabled Digital Twins with Structured Component:* **A Banjo**, J Etuke, A Dunmoye, O Owolabi

1962329 *From Digital Design to Dental Delivery: 3D Printing's Impact on Oral Health Innovation:* **S Monalisa**, E H Apu, R B Mostafiz

1962905 *Exploring Building Systems and Environmental Design through Digital Twin Models:* **A Dunmoye**, A Banjo, O Owolabi, J Etuke

1967651 *The Metaverse as a tool for Space Learning and Data Visualization:* **J L Green**, W Ahmed, S Nambiar, T Hoogenboom, E Tasker

2003149 *Immersive ≥3D Representations of Atmospheric Gravity Waves: Bridging Data Complexity and Scientific Insight in Geosciences:* **J Aguilar Guerrero, PhD**, B Bergsson, P Inchin, J B Snively, M D Zettergren, L Scherliess, Y Zhao, P D Pautet

1845919 *Explainable Deep Learning for Neutron Porosity Prediction: Advancing Reservoir Characterization:* **M S Islam, PhD**, M Uddin

1849706 *An Unsupervised Multi-temporal SAR Gap-filling Approach for Wideband Interference Regions:* **Y Youn**, Y Lee

1878016 *An Enhanced Spectral Library Providing Tools for Spectra Pre-Processing:* **M Solinas**, M Musacchio, M F Buongiorno, M Silvestri, A Scalabrini, S Falcone, L Modanesi

1896262 *Lossy Data Compression for the Energy Exascale Earth System Model:* **P M Caldwell**, R L Jacob, F Rebassoo, J Lee, A S Donahue, D Wu, J Krishna, A H Baker

1902711 *Urban Heat MiniCubes: An AI-Ready Dataset for Urban Heat Research and Applications:* **J Starfeldt**, M J Molina, A Kerr, A Yang, C Hain

1904624 *Laser or Lens? A Comparative Study of TLS and Video-Based 3D Gaussian Splatting for Tree Reconstruction:* **A Co**, F Zhang, R O Chancia, J V Aardt

1935618 *CRYSTRACT: A Comprehensive R Package for Batch Processing and Analysis of CIF Data:* **D Ngo**, J Maria-Hubner, A Prabhu

1949773 *HABITAT: High-resolution Arctic Built Infrastructure and Terran Analysis Tool:* **C Witharana**, E Manos, A Perera, M Pimenta, A K Liljedahl

1950386 *California-wide High-Resolution Building Footprint Mapping Using Scalable Deep Learning:* **A Awasthi**, K K Kabasares, H Hashimoto, K H Tran, P Khatri-Chhetri, S Horner, W Yip, I G Brosnan, T Park

251893
Advancements in Earth Science Data Access and Visualization through Emerging Technologies *(joint with A, EP, H, NH)*

Conveners: **Lorraine Tighe**, Environmental Systems Research Institute; **Xan Fredericks**, US Geological Survey; **Colleen Rosales**, Openaq; **David Soller**, USGS Headquarters; **Walid Ouaret**, University of Maryland College Park

1849115 *Visualization interfaces for web-based viewer applications and GIS users to explore FAIR bathymetry data publications in PANGAEA:* **D Damaske**, N Selke, P Konopatzky, M Rehage, F O Glöckner, G Wiemer

1864293 *Interactive, Steerable Climate Simulations with NVIDIA Earth 2 and Omniverse:* **D Hall**, N Robinson, M Hummel, P Hadorn, F Yang, P Manhausen, R Cherukuri, M Pritchard, P Messmer

1866257 *A Voice-Enabled AI Agent for Interactive Visualization and Analysis of NASA's Downscaled Dataset:* **A Panta**, H Lee, V Pascucci

1964324 *MOSAIC: Metadata Optimization and Statistical Anomaly Detection using Unsupervised Clustering for Geospatial Temperature Data:* **N Kansara**, J Tran, D Tang

1978941 *AI-Powered Air Quality Monitoring Using ESP32 and BME280 Sensors for Incense Smoke Classification:* **R Premanand**, Z Sun

1984011 *AmeriFlux Data Services: Advancing flux science through high-quality data processing and data management practices:* **Y W Cheah**, D S Christianson, H Chu, G Pastorello, F O'Brien, S T Ngo, B Wang, S Dengel, S Chan, S Biraud, M S Torn

1987988 *Transforming Ozone Forecasting: A Deep Learning Approach Using Temporal Fusion Transformers:* **M P D Ormeño Vasquez**, S Sunilraj, Z Sun, D Amin

1990287 *The A-KBS Arctic Knowledge Based System: Science Gateway Integration for Exascale Arctic Data Processing and Geospatial Feature Prediction:* **M Shayeghmoradi**, A Wilcox, S Parker, A Bergstrom, I Nesbitt, N Kaabouch, T Pasch

1990535 *Spatiotemporal Modeling of Human Cancer and Avian Influenza Using Air Quality Predictor:* **A Deng**, A Xing, Z Sun

1997756 *HydroRAG: A Prototype Knowledge-Based Research Assistant for Intelligent Querying, Gap Analysis, and Hypothesis Generation in Hydrological Science:* **M U Ullah**, A Sharma, J Gong, S J Burian, T Loof

1880473 *QGreenland-Net: Open source tools to standardize, visualize, and integrate geospatial data using a Greenland-focused test case:* **T A Moon**, M B Jones, A Garcia, A Kosobokova, R Nenuji, R Marowitz, T Stafford, A Thurber, I Nesbitt

1881431 *Advancing Remote Sensing and GIS Through Development of Hyperspectral Imaging Open-Source Ecosystem:* **B Xue**, Y Liu, D Messinger, H Rushmeier

1893304 *The NASA Prediction of Worldwide Energy Resources Project: EmPOWERing Users to Make Efficient and Impactful Decisions with Expansive, Real-Time Earth Observation Data:* **N Aluru**, B Macpherson, V Green, C Higham, P W Stackhouse Jr, F P

1899883 *PO.DAAC's First Batch Release of Virtual Datasets for Rapid Access and Analysis:* **D Henze**, E M Armstrong, M Gangl, D E Kaufman, C Ou

1900401 *NASA's Earthdata GIS (EGIS) Enhances Data Visualization of and Access to NASA Earthdata's Collections; Through the Creation and Curation of Web: Services, Maps, and Apps in a Cloud-Based Enterprise.:* **G Studer-Ellis**, A Alcott, D Babson, M Ochrym, L Schwizer, B Tisdale, P Zhao

1904599 *TaiPI Data Repository: An Asia-Based, Community-Driven Platform Leveraging Emerging Technologies for Open Polar Science:* **I A Panuntun**, W Zheng, C F Ni

1905335 *A Web-Based Dashboard for Real-Time Visualization of Soil and Weather Data in Agricultural Settings:* **S Kim**

1934173 *OpenForest4D-GEE Mapper: A Google Earth Engine web-based application for global forest structure mapping:* **C I Alvites Diaz**, C A Silva, I Bueno, C Scott, V Nandigam, S Krishnamari

1940546 *The Palaeo Data Cube: Introducing Next Generation Sharing of Geological Data:* **F Franziskakis**, C Vérard, S Castelltort, G Giuliani

1952358 *Applying AI Technologies to Democratize Digital Twin-Based Visualization of Scientific and Technological Data:* **H Choi**, W Lee, H Lee

1952749 *Communicating and Visualizing Fire Event Evolution in Near-Real-Time:* **T D McCabe**, E Orland, Z Becker, S Coffield, Y Chen, J T Randerson, O Olsina, R Field, D Davies, R Scholten, B Tisdale, L Schwizer, P R Rea, G Milevsk, A Kirk, T Liu, S Mohiuddin, A Boyd, Z Armstrong, H N Kostis, D C Morton, M B Follette-Cook

1964358 *Optimizing the Visualization and Querying of Time Series Data from Deep Stacks of OPERA Surface Displacement from Sentinel-1 (DISP-S1) netCDF files:* **K D Fairbanks**, H Kristenson, F F Williams, T Chase, R A Anderson, C Fleming, J Herrmann, W B Horn, A Johnston, M R Perry, G Short, Y Villafenez, C Wagner, R Wheeden, D Sorensen, J Smale, A Player, K Kristenson, C Showalter, G Clark, K Robinson, M Harbin

1965171 *High-resolution visualisations of aerial laser scanning data - discovering hidden remains of man-made structures:* **A Bucha Rasova**, B Bucha, T Lieskovsky

251678
Advancements in Hydrologic Tools and Technologies (cosponsored by ASA: American Society of Agronomy,CSSA: Crop Science Society of America,ESA: Ecological Society of America,SSSA: Soil Science Society of America) *(joint with ED, H, SY)*

Conveners: **Sushant Mehan**, South Dakota State University; **Daniel Ames**, Brigham Young University

1846385 *Spatial Attention layer for rainfall spatial interpolation:* **J Y Shin**, J Park, S Jang

1847570 *Hydrology Tool Set (HTS): A Suite of Online Tools and Models for Open Science:* **S Danielescu**

1860270 *Streamlining Satellite-Based Water Quality Assessment: The RS-WaterQuality Mapper Toolbox for QGIS:* **H Su**, H Liu, L Wang, E Miliutina, J Men, D Tian, Y Lu, S Shu, R A Beck, A Premsagar

1866266 *A National Model for Predicting Submerged Hydraulic Jumps at Low-Head Dams Using Open-Access Remote Sensing Data:* **K Quintana**, R H Hotchkiss

1873051 *Coastwise: A Gamified Approach to Coastal Watershed Planning Through the Stormwater Management Model:* **S Lynn**, V L Sobral, L Schneider, J L Goodall

1873332 *Introducing the Next Generation of USGS Water Data APIs:* **M Mahoney**, A Viedma

1883736 *FIMserv v.1.0: A Tool for Streamlining Flood Inundation Mapping (FIM) Using the United States Operational Hydrological Forecasting Framework:* **A Baruah**, S Dhital, S Cohen, T N D Tran, H Elhaddad, C L Watts, D Devi, Y Chen, C Pruitt

1885833 *A Framework for the Evaluation of Flood Inundation Predictions Over Extensive Benchmark Databases:* **D Devi**, S Dhital, D Munasinghe, S Cohen, A Baruah, Y Chen, D Tian, C Pruitt

1975033 *Tethys Platform - Advancing Earth Science Decision Support Through Open-Source Web Application Frameworks:* **K M Moore Powell**, N R Swain, D P Ames, S Crawley, S D Christensen, M Souffront

1977671 *Physics-Informed Digital Twin Architecture: Real-World Fire Model Integration for High-Fidelity 3D Wildfire Simulation and Virtual Reality Visualization:* **M H Raha**, A Tavakkoli, M Habibpour, F Afghah, C Webb, J Coen, N D Beres

1978259 *How NASA's Fire Information for Resource Management System (FIRMS) employs a range of access points to maximize the usability of the system by its global user base.:* **O Olsina**, J Hewson, B Quayle, D Davies, D Mendes, A Radov

1979512 *Expanding Global Water Access Through GIS and Surface Water Observations from the SWOT Mission:* **N Tarpinian**, C M Oaida Taglialatela

1982347 *A Coincident Data Discovery Engine and Web-Portal for Global-Scale Cross-Platform Data Search:* **Y Xie**, R Wang, L Du, K Duncan, S L L Farrell

1990639 *Freely available tools for immersive 3D visualization of Earth science data in real-world contexts:* **M Hasan**

1997684 *An Intelligent National Map for Earth Science: Agent-Based Automation Using Authoritative Data:* **S T Arundel**, W Li, K McKeehan, J K Liu

2003178 *Enhancing Earth System Science Workflows with eViz: Interactive Visualization, Live Data Integration, and Expanded Functionality:* **C Cruz**, D Raghunandan, V Valenti

1902306 *Artificial intelligence-guided iterations between observations and models significantly improve continental-scale predictions of sediment respiration:* **A Malhotra**, B K Forbes, S F Gary, MS, PhD, A E Goldman, B Rivera Waterman, V A Garayburu-Caruso, M P Bruen, E Fluet-Chouinard, S Mehan, M Taylor, M Ardon, M B Cardenas, W K Dodds, C Lønborg, W H McDowell, M Moustapha, A Myers-Pigg, P Regier, T Rubin, H S Song, R D Stewart, J Villa, N D Ward, T D Scheibe, J Stegen

1923976 *Bankfull and Mean-Flow Channel Geometry Estimation Through Machine Learning Algorithms Across the CONtiguous United States (CONUS):* **R Zarrabi**, R McDermott, M Erfani, S Cohen

1947802 *Demonstrating new tools and frameworks to facilitate continental-scale hydrologic data access and evaluation:* **S Lamont**, M Denno, K van Werkhoven, S Landsteiner

1959358 *Modernizing HydroShare: Using a Cloud-Native Architecture to Accelerate Water Science Innovation:* **A M Castronova**, I Garousi Nejad, S Black, A Bogan

1965986 *Operationalizing Hydrologic Research: Building Web-Based Forecast and Visualization Tools with Tethys Platform:* **J Shi**, D P Ames, N R Swain, T Mahjarin

1966682 *MoltenFAC: A Tiled Flow Accumulation Algorithm for Large-Scale, Massively Parallel, and Memory-Efficient CPU/GPU Processing:* **B Alexander**, H Cho, J Song, J Halgren

251125
Advancing Artificial Intelligence for Remote Sensing: Overcoming Data Scarcity and Domain Shift *(joint with B, EP, SY)*

Conveners: **Yuchi Ma**, Stanford University; **Sherrie Wang**, Stanford University; **Hannah Kerner**, University of Maryland College Park; **Siddharth Sachdeva**, Organization Not Listed

1847904 *Deep learning-based gap-filling and agricultural field boundary delineation empowers early-season rice paddy mapping in smallholder farming system:* **R Kwon**, Y Ryu, C Choi, P Tang, S Jo, K Lee

1852689 *A GAN-Enhanced Deep Learning Framework for Rooftop Detection from Historical Aerial Imagery:* **P Chen**, S Wang, C Wang

1859424 *Mapping Mining Footprints with Spatiotemporal CNNs and Multi-Head Self-Attention Mechanism: A Satellite Remote Sensing and Deep Learning Approach.:* **I Hasan**, D Liu

1967182 *Tethys Dash: A Modular Framework for Low-Code Hydrologic Dashboards, Integrated Data Visualization, and Decision Support:* **T Mahjarin**, C Krewson, D P Ames, J Shi, N R Swain

1968335 *A Neural Network-Based Integration of HEC-RAS, LISFLOOD-FP, and OWP-HAND FIM for Enhanced Flood Inundation Mapping:* **S Seyvani**, P Nikrou, S Cohen, D Tian

1968518 *Democratizing National Water Model Data: A Mobile App for National Water Model River Discharge Monitoring and Flood Warning:* **J Jaramillo Garcia**, D P Ames, M Womble

1968891 *MIDAS: A Memory-Efficient, Multi-Interface Toolkit for Scalable High-Performance Hydrologic Flow and Drainage Analysis Using OpenMP Parallelism:* **H Cho**

1995596 *Streamlining Community Modeling through Automated Data Processing for the Next Generation Water Resources Modeling Framework:* **J Halgren**, J Cunningham, C Perry, Q Lee, S Lama, A Patel, S Naser Neisary, S A Koriche, M Singh, N Minor

2003385 *Advancing Hazard Resilience with SPHERE (Spatial Platform for Hazard Evaluation and Risk Estimation): A Modular Open-Source Framework for Flood Risk Analysis:* **A Hoke**, T Schmidt, D Bausch

2003393 *WaterSoftHack: Machine Learning, Data Analytics and Cyberinfrastructure Training for Water Science and Engineering:* **V Samadi**, B Adhikari, D M Boyer, A Castronova, I Demir, K Panthi, A Neupane, M Saberian, N Zafarmomen

1863801 *Multi-Modal Remote Sensing Segmentation of Geomorphological Structures with Deep Learning and Self-Supervision:* **F Faure**, L Rosell-Guevara, C Bencheikh El Amira, S Zerathe, A Laurence, J Hollingsworth, S Giffard-Roisin

1864758 *Lightweight Semantic Segmentation for Co-seismic Landslide Identification Using Transfer Learning:* **S Meng**, Z Shi, T Glade

1868809 *Corn Yield Prediction Using Phenology-Informed Remote Sensing Data and Deep Learning Methods:* **M Wu**, X Wang, Z Zhang

1872132 *Towards Multi-Sensor and Multi-Task Generative Foundation Model for Earth Observation:* **J PAN**, X Huang

1877727 *A Deep Learning Framework for Tree Detection in Forest Point Clouds Using Multi-Layered Forest Structure:* **Y Tan**, X Yang, J Zhang, X Xu, M Shigeno

1878597 *Urban-Trained, Forest-Ready: A Source-Mix Domain-Adaptation Pipeline for Large-Scale Forest Point Cloud Segmentation:* **F Zhang**, R O Chancia, A Hassanzadeh, J V Aardt

1881689 *Mapping Crop Field Size Change in Conflict Hotspots of Sub-Saharan Africa Using Very-High-Resolution Images and Limited Reference Data:* **A Wasik**, P Rufin, E Ibrahim Dr, L D Estes, T Chakraborty, F Cottier Dr, H Yin

1885246 *Scalable Early-Season Soybean Mapping Without Ground Truth Labels: Unsupervised Integration of Physiological Traits and Spectral-Temporal Dynamics:* **H Jo**, Y Ryu, R Kwon, P Tang, W Yu, C Choi

1888890 *Developing a Neighborhood-Relation Poverty Mapping Method Using Household Survey and Satellite Imagery:* **T Chang**, A Kawasaki

1904822 *SpectraScope: Spectral-Conditioned Foundation Models for Label-Efficient, Domain-Robust Remote-Sensing Analytics:* **J Park**, D Kwon

1907092 *Improving Small Vessel Detection in Satellite Imagery via Pretraining and Architecture Refinement under Multispectral Data Scarcity:* **S H Kim**, Y KIM, H Sim, M H Jeong, D Chung

1915139 *Global Agricultural Field Boundaries Based on the Segment Anything Model:* **J de Abreu Araujo**, V Martins, L Borges Ferreira, U R V Aires

1916296 *Learning with less: label-efficient land cover classification at very high spatial resolution using semantic stratification and self-supervised deep learning:* **D Hester**, V Martins, L Borges Ferreira, T Lima

1918584 *A Physics-Informed, AI-Driven System for Traffic Estimation:* **T Gebre**, L H Beni

1926202 *On the Foundations of Earth and Climate Foundation Models:* **X X Zhu**

1933044 *A Reproducible Open-Source Machine Learning Framework for Sentinel-2 Land Use and Land Cover Classification: Comparative Analysis of Random Forest and Support Vector Machine Methods:* **P Kumar Sarker**, M J Ahamed, S Dey

1936359 *Parameter-Efficient Fine-Tuning of Vision-Language Models for High-Performance Earth Observation Tasks:* **W Wang**, J Fang, W Luo

1936433 *WildSAT: Learning Satellite Image Representations from Wildlife Observations:* **R Daroya**, E Cole, O Mac Aodha, G Van Horn, S Maji

1936692 *Assessing Performance of Remote-Sensing Based Machine Learning Approaches for Soil Moisture Retrieval Across Agricultural Landscapes Using ISMN:* **V Sunkara**, S Sachdeva, D B Lobell, A G Konings

1947957 *Multi-Polarization SAR Super-Resolution with a Spatially Aware Hybrid GAN-U-Net Architecture:* **J Talreja**, L H Beni

1948213 *Characterization of Strike-Slip Fault Offsets Using Deep Learning and Simulated Topographic Data:* **J Bourcier**, S Visage, S Goncalves, M Mouchené, L Pousse Beltran, S Giffard-Roisin

1952671 *Combining open labeled datasets with varying domains to improve large-scale agricultural field boundary delineation:* **R O Balogun**, T Chakraborty, G Muhawenayo, H R Kerner, A M Tarano, Z Fang, N Jacobs, S Khanal, R Abedi, L D Estes

1959244 *Deep Learning-Based Prediction of Soil Organic Carbon Using Remote Sensing Data in an Intensively Farmed Agroecosystem: A Hindon Basin Case Study:* **S B Reddy**, V R

1959597 *Mapping Fallow Fields from Sparse and Fuzzy Positive-Only Labels: Implications for Food-Water Nexus:* **S M Asif**, O Aydin

1963985 *Toward Reliable Global Monitoring of Vegetation Cover Using Spatial-Temporal Adjustment of Machine Learning Models:* **B Zhou**, G S Okin

1964082 *An Interface for Data Curation and Mapping of Irrigated Areas Using Active Learning:* **K NG**, J Marquez, G Laboy, E A Kebede, H A Michael, K F Davis, M Taufer

1971356 *Bayesian Deep Learning for High-Resolution Bathymetry Retrieval in Data-Scarce Harbors and Uncertainty-Driven Coastal Wave Modeling:* **N Chakir**, A El Kacimi, M Seaid, N El Mocayd

1971569 *Bridging Spatial Gaps in Crop Yield Mapping to Support Climate-Resilient Agriculture via Knowledge-Guided Graph Neural Networks:* **J Yang**, L LIU, Q Yang, X Jia, B Peng, K Guan, Z Jin

1974419 *Peruvian Land Cover Characterization using Machine Learning and Remote Sensing:* **D I Radu**, H Lepage, E Barnes, M Villar, M Huisa, J Forrest, C H W Barnes

1976746 *Spatially Adaptive GeoAI Framework for Multi-Scale Environmental Exposure Assessment by using Satellite and Street View Imagery:* **A A Kafy**, K Crews

1977573 *Empowering Wildfire Intelligence: Automated Segmentation, Instance Tracking, and Benchmarking with SIT-FUSE and Multi-Sensor Observations:* **N LaHaye**, L McKenna, A Easley, A Zagvozdkin, I Yanovsky, R DeMilt, M Truong, N Giebink, H Lee, K Yun, Y Chen, Y Gel, O V Kalashnikova, D S Saah

1981374 *Remote Sensing-Based Multi-Temporal Landslide Inventory Mapping: Comparing GIS Thresholding and Random Forest Classification on LiDAR DEMs in Baltimore County, Maryland.:* **R Olamijulo**, M Okegbola, O Owolabi, S Fakolade

1983087 *Enhancing Climate Literacy in Engineering, Integrating Climate Resilience into Education and Practice.:* **S Fakolade**, O Owolabi, M Okegbola, R Olamijulo

1985487 *Benchmarking Vision Foundation Models for Automated Landslide Inventory Mapping:* **W Zhan**, C Chen

251792
Advancing Global Insights Through Nighttime Light Observations *(joint with A, GC, NH, SY)*

Conveners: **Ranjay Shrestha**, NASA Goddard Space Flight Center; **Zhuosen Wang**, University of Maryland; **Miguel O Román**, Universities Space Research Association; **Eleanor Stokes**, NASA Goddard Space Flight Center; **Peter Boucher**, University of Massachusetts Boston

1925256 *Advancing Global Applications with the New Collections of NASA's Black Marble Nighttime Lights Product:* **R M Shrestha**, Z Wang, M O O Román, V L Kalb

1934983 *Shedding Light on Energy Resilience in Puerto Rico with NASA's Nighttime Lights Data:* **P Boucher**, H Tarrido Picart, A Erb, I Paynter, E Tucker, L Bracero Marrero, N Alvarez-Berrios, W A Gould

1940749 *A Fast Disaster Event Detection Method Based on a Series of Nighttime Light Images: Optimization and Validation for the Zhengzhou Flood Case of July 2021:* **R LIU**, T Machimura

1956004 *Spectral Intensity of Artificial Light at Night: Insights from TEMPO Observations, Background Noise Correction, and Circadian Stimulus Applications:* **Z M Xue**, M Zhou, PhD, J Wang, J L Carr, X Liu

252751
Advancing Hydroinformatics with Artificial Intelligence: Transforming Data into Action for Integrated Water Resource Management *(joint with GC, H, SY)*

Conveners: **Debjani Singh**, Oak Ridge National Laboratory; **Debjani Singh**, Oak Ridge National Laboratory

1939299 *WaterCopilot: An AI-Driven Intelligent Agent for Sustainable Water Management:* **H Retief**, K Vickneswaran, M Garcia, R Padilha, P Silva, C Dickens, S Ghosh

1988735 *Modeling drought-based extreme events using a grounded N-shot learning approach:* **S Gupta**, Y Ming, G Mohler

2002041 *Invariant Features for Global Crop Type Classification:* **X Tong**, S Wang

1966608 *FORM, FUNCTION AND ILLUMINATION: SPATIAL PATTERN ANALYSIS OF NIGHT TIME LIGHT AND URBAN MORPHOLOGY IN NATIONAL CAPITAL TERRITORY(NCT) OF DELHI,INDIA USING SDGSAT-1 NIGHT LIGHT SATELLITE DATA AND BUILDING MORPHOMETRICS:* **R Neelam**, P K Gupta, M Kuffer, A Abascal

1977543 *Glow Watch: Exploring Urban Growth and Light Pollution in Tennessee:* **G Shinkareva**, D Jean

1980283 *TEMPO at Night:* **J L Carr**, H Chong, X Liu, J Houck, V L Kalb, Z Wang, H Madani, D Lindsey, S D Miller, S V Marchenko, Z M Xue, J Wang, D L Wu, D E Flittner, K Chance

1986726 *Exploring Residential Light Emissions: Correlating Remotely Sensed Nighttime Observations with Demographic and Environmental Factors:* **K Walczak**, C Tarr, G Gyuk, L Wisbrock

1993365 *Night-Time Lights as a Proxy for Urban Energy Demand: Spatial and Temporal Patterns in India's Rapidly Growing Cities:* **V Parmar**, A Sarkar, A Jana

1996422 *Analyzing the Interplay Between Urban Heat Island, Nighttime Lights, and Biophysical Indices Using Remote Sensing and GEE Techniques in Los Angeles and San Diego:* **M R Hasan**, M T Islam

1985781 *From YOLO to VLMs: Advancing Zero-Shot and Few-Shot Detection of Wastewater Treatment Plants Using Satellite Imagery in MENA Region:* **M Garcia**, A Premarathna, K Hewageegana, D Botelheiro

1986036 *Emphasizing Reproducibility During Workflow Development: A Decision-Support Framework for User Validation of AI/ML Outputs:* **T A Ruggles**, H J Yoon, A Bhattacharya, D Singh

1999772 *HydroSource: A National-Scale Digital Infrastructure for Hydropower Data, Research, and Decision Support:* **D Singh**, M Foley, T A Ruggles

250586
Advancing Reproducible and FAIR Science: Tools, Practices, and Incentives

Conveners: **Deborah Khider**, University of Southern California; **Julien Emile-Geay**, University of Southern California; **Nicholas McKay**, University of Arizona; **David Edge**, Northern Arizona University

1854969 *leafwaxtools: A New Python Package for Applying Streamlined Workflows and FAIR Principles to Leaf Wax Biomarker Datasets:* **K Lindberg**, E K Thomas, G Otiniano, J M N Aguilar

1860899 *Earth System Model Dockerfile and Container Creation Built Into a Workflow for FAIR Science:* **T E Robinson Jr, PhD**, D Singh, B Chang, R Mulhall

1883655 *Using FAIR Principles to Build a Workflow with Lower Barriers to Geoscience for Everyone:* **Y Pan**, W Li

1896676 *PaleoBooks: A Community Gallery for Transparent and Reusable Paleoclimate Workflows:* **J Landers**, J Emile-Geay, D Khider, A James, T Gondhalekar, N McKay, S Cropper

1901208 *Implementing FAIR Data Management for Large-Scale Environmental Field Campaigns: Lessons from the Colorado River Ecological Spectroscopy Study:* **D O'Ryan**, N Falco, M Worsham, I Breckheimer, A Henderson, M Burrus, E Brodie, D Chadwick, C Ulrich, K H Williams, Y Wu, C Varadharajan

1901388 *pyclimproj: Enabling FAIR and Reproducible Access to Climate Projections Across Multiple Scales:* **S Upadhyay**

1913288 *xxxxxxxxxxxxx:* **N Qulizada**

1914441 *Enabling open cryosphere research with Ghub: case studies and example applications:* **J P Tulenko**, J P Briner, R Jones-Ivey, S Nowicki, A K Patra, N Khan, A Narkevic, K Poinar, B M Csatho, R Creel, A R Halberstadt, J Quinn

1919103 *FAIR Data Practices and Integrative Software Initiatives at NOAA's World Data Service for Paleoclimatology:* **C Guiterman**, C Morrill, E Gille

1919419 *Exploring ways to share large-scale satellite data products for natural hazard assessments and monitoring:* **J H Chong**, E O Lindsey

1922563 *NASA's push for open, reproducible science:* **C L Gentemann**, K J Murphy, A E Mitchell, S Crawford, L Carrington

1927575 *Integrating Idealized WRF Models into FAIR Workflows: Lessons from Single-Column and Sea Breeze Simulations:* **S Puthiyamadam Vasu**, P K Ray

1929482 *A Modular Open-Source Package for the Detection of Land-Sea Breeze Circulations.:* **N Alex**, P Ray

1938062 *StraboSpot Reports: Linking individual and group workflows in digital data systems:* **B Tikoff**, T F Shipley, E M Nelson, S F Trevino, J Newman, C Martin, Y Ibrahim, J D Walker, D Davidson, C B Condit, C Regalla

1938703 *Accelerated Domain-Specific Repository Development with FIESTA:* **R Minnett**, N Jarboe, A A P Koppers, L Tauxe, C Constable

1961275 *Advancing Reproducible Methods for Multi-Hazard Risk Assessment and Landscape Evolution Modeling in a Rapidly Changing Refugee Landscape in Bangladesh:* **D M E Haque**, S Karunatillake, J M Lorenzo

1961415 *Archiving, Transparency, Automation, and Collaboration in Coral-Band and Tree-Ring Image Analyses:* **T DeCarlo**, O Jasnos, A Strange, B Black, B Hedger

1963817 *A Metadata-Driven Evaluation Framework to Advance FAIR Software Practices in Earth Science Research:* **A Bogan**, I Garousi Nejad, A Castronova

1967576 *Interoperability in geoinformatics: technical choices, social consequences:* **A Thomer**, N H Raia, S J Goring

1970883 *What It Takes to Make Your Numerical Model FAIR and Community-Ready:* **A Kettner**, I Overeem

1972775 *Datasheets for Earth Science Datasets:* **D M Hueholt**, C Connolly, M A Burt

1973037 *Enabling efficient and FAIR reuse of education and training material for computationally intensive geosciences:* **B E J Rose**, R Cockett

1974307 *Icefabric: A Lakehouse Architecture Supporting Reproducible Hydrologic Modeling at Continental Scales in Support of NWMv4:* **T Bindas**, Q F Hamlin, S Chin, D Cumpton, B Hinkson, F Rahmani, K Spurrier

1977095 *ChromatoPy: An open-source tool for chromatographic peak deconvolution and integration applied to glycerol dialkyl glycerol tetraethers (GDGTs):* **G Otiniano**, E K Thomas, I Castañeda, S Acharya, S Mark, Y Sharma

1979454 *Global Flood Mapper v2: An Open-source Browser-based Platform for Flood Mapping and Impact Assessment Using Sentinel-1 SAR:* **P Tripathy**, A Agrawal

1983808 *Enhancing Reproducibility of geologic field data through Automated Quality Assessment and Quality Control:* **J D Walker**, B Tikoff, E M Nelson, D Davidson, A Möller, E Wyss

1984534 *Re-curating Metadata to Advance FAIR Practices Across the NSF GAGE and SAGE Facilities operated by EarthScope Consortium:* **J Riley**, T Habermann, A Clark, R Bendick, R E Casey, D J Charlevoix, J Carter

1984641 *Put it all out there! Effective and Low-cost Practices for Sample-based FAIR Science:* **M Tuite**, J Lima-Zaloumis

2000468 *Leveraging Crowdsourced and Sensor-Based Bicycle Data to Advance Reproducible Urban Mobility Analytics:* **N Qulizada**

250407
Advancing Urban Risk Modeling: From Physics Foundations to AI Innovations

Conveners: **Ahmed Mustafa**, Urban Systems Lab, The New School University; **Timon McPhearson**, Eugene Lang College, The New School; **Ashish Shrestha**, Urban Systems Lab, The New School University, New York; **Madhavi Jain**, New York University; **Sally El Hajjar**, New York University

1855451 *Towards a multi-sensor satellite AI database of observed U.S. flood extents 2001–2024:* **S Bryant**, S Kaushik, PhD, J Sullivan, B Tellman

1859624 *Synthetic drainage solutions for data-scarce urban environments:* **C Iliadis**, L Vasiliades

1869642 *AI for Urban Floods: Real-World Scaling of a ConvLSTM-based Framework:* **S El Hajjar**, A Mustafa, R Jain, A Shrestha, M Jain, C Iliadis, V Glenis, T McPhearson

1877997 *The EMERGENCIES Project or a Forward-Looking High-Resolution Modeling and Decision-Support System in Case of Hazardous Atmospheric Releases:* **P P Armand**, C Duchenne, O Oldrini, S Perdriel

1880661 *uMORPH: A High Resolution Global Urban Morphology Dataset for Urban Numerical Weather Prediction:* **M Jain**, L E Ortiz, T McPhearson

1883464 *Enhanced Forecasting Methods for Extreme Weather Events and Vulnerable Populations:* **N Ahmad**, T Kandakji, L Sanford, D Esty, G Torres, Z Zhu, K J Mach

1888578 *Statistical Characterization and Modeling of Climate Data in a Desert Urban Environment in Phoenix, AZ:* **A Aryal**, G Mascaro

1890727 *From Weeks to Seconds: ClimateIQ's ML Engine Redefines Flood and Heat Modeling:* **A Mustafa**, C Kenedy, A Kramer, L E Ortiz, S El Hajjar, M Jain, A Shrestha, R Jain, J Steele, T McPhearson

1896188 *Architecting ClimateIQ's Frontend: Delivering High-Resolution Hazard Data Through Scalable, User-Centered Interfaces:* **R Jain**, J Steele, A Mustafa, S El Hajjar, M Jain, A Shrestha, C Kenedy, T McPhearson

1896366 *Towards high-fidelity, interoperable and scalable urban flood modeling:* **A Shrestha**, A Mustafa, T McPhearson

1946098 *Integrating Floating Debris into Urban Flood Models: A Coupled Hydrodynamic–DEM Modelling System:* **P Ayebare**, V Glenis, J Mckenna

1947152 *Risk Assessment of Air Pollution Based on a New Clustering Approach: A Scalable and Low-Emission Framework for Urban Climate Hazard Modeling:* **H Kassem**, S El Hajjar, A Mustafa, T McPhearson, H Omrani

1965533 *Modeling the Wind-Driven Transport of Irregularly-Shaped Firebrands at the Wildland-Urban Interface using Coupled CFD-DEM:* **D Das**, F E Garcia, A Jeffers

1968781 *Connectivity-Informed Siting of Urban Stormwater Control Measures: The HydroDisconnect Approach:* **F Dell'Aira**, N Kafle, J Hathaway, C I Meier

252587
AI Foundation Models for Earth, Space and Planetary Sciences *(joint with B, H, P, SH)*

Conveners: **Hamed Alemohammad**, Massachusetts Institute of Technology; **Wenwen Li**, Arizona State University; **Ankur Kumar**, University of Alabama in Huntsville; **Rufai Balogun**, Clark University

1988603 *Accelerating Earth System Simulations: Creating an AI-Powered Emulator for the E3SM Land Model:* **D Wang**, P E Thornton, D M Ricciuto, X Yang, X Wang, D Lu, D Gao, Y Feng, Q Cao, Z Gu, Z Liu

1909269 *Active Region Emergence Prediction Using the HelioFM Model:* **S Kasapis**, A Muñoz-Jaramillo, R Lal, D da Silva, I Kitiashvili, A G Kosovichev, S Roy

1968987 *AI Foundation Models for Observational and Gridded Data Across Scales:* **J Schmude**, J Jakubik, D Salles Civitarese, S Singh, S Roy, M Maskey, C Watson, R Ramachandran, J Bernabe-Moreno, B Lütjens

2000003 *Automated Detection of Intermittent Streams Using SAM2 and High-Resolution Satellite Imagery:* **J Vicino**, A Akbari Asanjan, P Claggett, D Bell

1963743 *Earth Index Toolkit: Human-in-the-Loop Classification with Foundation-Model Embeddings:* **A Durieux**, B Strong, E Boyda, H Ingold, M Maron, C Ren

1995775 *Exploring Prithvi WXC Adaptation from MERRA2 to ERA5:* **V Nascimento Ribeiro**, J L L G Guevara Diaz, A Jones, C Lucas, J S Moraga, N Lord, A Taylor, W Trojak, E Lockhart

1957403 *Extending INDUS Models for Low-Latency, High-Context Scientific Sentence Embeddings:* **V Kuruvanthodi**, B Bhattacharjee, M Elkaref, G De Mel, N Pantha, S Awale, M Ramasubra

1993439 *Fine-Tuning Prithvi-EO-2.0 foundation Model for High-Resolution Irrigation Mapping with Limited Labeled Data:* **E Jalilvand, PhD**, S V Kumar, H Alemohammad, PhD, S Khallaghi, N Bhalla, N Nair, S Vinay

1986256 *From Data to Discovery: Visualizing Inputs, Reconstructions, and Artifacts in Spatiotemporal Foundation Models with SatVision-Pix4D:* **S Oehrle**, J Caraballo-Vega, J Gong, S Zhang, S Jaddu, M Carroll, J Li, G Elsaesser, L Ding

1999318 *From Gaps to Storms: Leveraging GAIA Representations for Global Precipitation Estimation and Extreme Weather Segmentation:* **O M Alexander**, J Makki, A Akbari Asanjan, T Berg, M Yang, C Crawford, D Shidham, C Zhang, S Chakraborty, S Peng, A Ravindran, O Raiman, D Potere, D Bell

1930954 *From Orbits to Insights: A Foundation Model for Lunar Science:* **M K Barker**, A Annex, Z Morse, V Viswanathan, S Roy, D Szwarcman, V Gaur, A Kumar, H Patil, G Nyirjesy, R Slank, P Fraccaro, C Watson, J Bernabe-Moreno, R Ramachandran

1974699 *From Pixels to Patterns: TerraMind at Meter Resolution with Weather Context:* **C Watson**, J Jakubik, B Blumenstiel, T Brunschwiler, P Fraccaro, J Bernabe-Moreno, N Longepe

1992659 *Guard-railing Geospatial Foundation Models:* **R Bryant**, R Lickorish, A Jones, P Fraccaro, F Otieno, C Wachira, B Edwards

1930254 *HydroGem: A Domain-Informed Foundation Model for Hydrological Anomaly Detection, Imputation, and Forecasting:* **I U Haq**, B S Lee, D M Rizzo, K Underwood, J N Perdrial

1927935 *Insights from Comparing Prithvi-EO Transformer Embeddings and NASA Harmonized Landsat-Sentinel (HLS) Spectral Profiles for Land-Use Classification:* **K M A Islam**, R E Kennedy

1949883 *Integrating Prototype-based Channel-specific Reasoning in Explainable Neural Networks for Geospatial Learning Tasks:* **A Narayanan**, K J Bergen

1969421 *Investigating the Benefits of the Foundation Model for Mars Science Applications:* **M Purohit**, B Tokas, S Lu, J B Adler, S Dickenshied, S Diniega, U Rebbapragada, H R Kerner

1910036 *Leveraging AI multimodal geospatial foundation models for improved flood extent mapping:* **M G Tulbure**, J Caineta, M Broich, H Alemohammad, PhD, P Rufin Dr, M Gaines, L Thomas, P Hostert, J Hemmerling

1982532 *Leveraging Geospatial Foundation Models for Guided Super-Resolution in Earth Observation:* **M Purohit**, H Ushijima Mwesigwa, Z Gu, A Kulshrestha

1925935 *Neural Emulator for Forecasting PFSS Coronal Field Extrapolation with HelioFM:* **D da Silva**, A Muñoz-Jaramillo, V Gaur, S Roy

1872095 *OceanRep: A Foundation Model for Ocean Dynamics:* **K Nowak**, C Lessig, T Jung, N Koldunov, S Danilov, I Luise

1884718 *Opportunities and challenges in moderate resolution annual change detection with Prithvi 2.0:* **M Truong**, R E Kennedy, R Ramachandran, S Roy, A Kirschbaum

2001441 *Performance and Generalizability Impacts of Fusing Location Encoder Foundation Models for Dynamic $PM_{2.5}$ Estimation:* **Z Wang**, M Karimzadeh, J Crooks

1900219 *Pretrain Here: How the Spatial Distribution of Pretraining Data Shapes Remote Sensing Transferability:* **A Kaur**, E Rolf, H R Kerner

1883124 *Prompt2DEM: High-Resolution DEMs for Urban and Open Environments from Global Prompts Using a Monocular Foundation Model:* **O Rafaeli**, T Svoray, A Nahlieli

1874846 *Quantitative Evaluation of Foundation Models for Weather Forecasting:* **K Breen**, J Caraballo-Vega, J Li, G Tamkin, A daSilva, D Barahona, K Lamb, N Arnold, M Hendrickson, M J Kim, A Molod, M J Frost, W Putman, M Carroll

1906887 *Sequential Dynamics-aware Foundation Model for Vision-based Space Navigation:* **W Cho**, J Park, D Kwon

1999363 *Soma: Foundation Model for Multi-Modal Lunar Science using LRO Datasets:* **D Szwarcman**, S Roy, V Gaur, A Kumar, H Patil, G Nyirjesy, R Slank, A Lin, P Fraccaro, M K Barker, A Annex, Z Morse, V Viswanathan, C Watson, R Dawson-Rigas, M Maskey, J Bernabe-Moreno, R Ramachandran

1953531 *Surya: Foundation Model for Heliophysics using SDO Data:* **S Roy**, J Schmude, R Lal, V Gaur, M Freitag, J Kuehnert, T van Kessel, J Jakubik, E Eben Vos, K Mandal, J L Sousa Almeida, D V Hegde, A Muñoz-Jaramillo, A Lin, T Singh, K Yang, C Pandey, J Hong, B Aydin, R M McGranaghan, S Kasapis, V Upendran, S Bahauddin, D da Silva, N V Pogorelov, C Watson, M Maskey, J Bernabe-Moreno, R Ramachandran

1912882 *Training-Free Scale Adaptation of LVLMs for Remote Sensing Imagery:* **J Heo**, Y Ko, D Kwon

1890482 *Uncertainty quantification for foundation models:* **P J van Leeuwen**, C Chiu, C K Yang

1882087 *Unlocking the Potential of Satellite Embedding Fields for Landscape Change Attribution:* **M Burns**, R E Kennedy, V Pasquarella, A Kirschbaum

1870650 *Weak Supervision for Mapping Rice Irrigation Practices in South India, Using Diffusion-Based Remote Sensing Foundation Model:* **R Abedi**, N Torbick, P Konkathi, I Ajmera, A B Ramalingam, A Saini, L D Estes

247690
AI/ML for Wetlands: Remote Sensing-Driven Solutions for Climate-Resilient Ecosystem Management *(joint with EP, G, H)*

Conveners: **Zhenghong Tang**, University of Nebraska Lincoln; **Jahangeer Jahangeer**, University of Nebraska Lincoln; **Aditya Kapoor**, USDA ARS; **Rimsha Hasan**, University of Nebraska Lincoln

1848196 *Wetland Mapping with Multi-temporal Aerial Imagery and GeoAI:* **Q Wu**, C R Lane, J Christensen, H E Golden, J Prenger, A Rajib

1850014 *Simulation of Water Table Depths in a Forested Wetland System in the Carolinas using data-driven approaches:* **S Mehan**, A Manna, D M Amatya

1882312 *Forecasting Declines in Global Mangrove Ecosystems Using an Attention-Enhanced Conditional U-Net:* **A Agrawal**, S Vishen

1885013 *Scale effects in mangrove mapping from ultra-high-resolution remote sensing imagery:* **H Zhang**, H Zhang

252516
Analytics, Informatics, and Data (AID) for Advancing Sustainability: Innovations and Applications

Conveners: **Mir Matin**, Organization Not Listed; **Prof. Kaveh Madani**, United Nations University Institute for Water, Environment and Health (UNU-INWEH); **Azin Zarei**, United Nations University

1848206 *Decoupling Wildfire Exposure from Disaster: A Global Analysis of 2002–2021 Trends:* **M Sadegh**, S T Seydi, J T Abatzoglou

1855967 *Analyzing Expert Decisions: A Multivariate Framework for Sustainable Small Hydropower (SSHP) Criteria Prioritization.:* **O Fasipe**, E A Variano

1859740 *From Exposure to Action: An Equity-Centered Framework for Stormwater Nitrogen Mitigation across the United States:* **M Ketabchy**, F Vahedifard, K L Brubaker

1869977 *An Integrated Modelling Framework to Determine the Carbon Credit for Farmers to Produce Sustainable Aviation Fuel from Oilseed Cover Crops.:* **K Ullah**, G Oladosu, P Dwivedi

1898742 *Zero-Shot Multi-Spectral Remote Sensing: Repurposing Generalist Multimodal Model Gemini 2.5 for Multi-Spectral Remote Sensing Applications:* **G Satish Mallya**, Y Gigi, D Kim, M Neumann, G Beryozkin, T Shekel, A Angelova

1891535 *Advanced Multisensor Approach for Wetland Dynamics Monitoring using ML Classifiers in Sambhar Lake Ramsar Site (India):* **B Bijarniya**, P L K K Sharma, S Kumar, PhD

1900406 *Assessing Inundation and Ecosystem Benefits in CRP Lands Using AI and ML:* **J Jahangeer**, A Kapoor, Z Tang

1914704 *Biodiversity and Carbon Sequestration Potential of India's Ramsar Wetlands: Implications for Conservation and Climate Mitigation:* **R Rehman**

1934333 *Ecological and Hydrological Significance of Uttarakhand's Wetlands: Conservation Challenges in a Himalayan Context:* **F Baby**

1999327 *Enabling Strategic Wetland Management for Climate Resilience and Carbon Neutrality: A Decision Support System Approach:* **S Myeong**

2000949 *Leveraging Machine Learning for Coastal Freshwater Floodplain Wetland Identification and Habitat Suitability:* **E White Jr**, L Tadjpour, M Masson-Forsythe, N R DEEP, A Hirsh

2003377 *Assessing Deep Learning Robustness for Phragmites australis Classification Using Multi-Year Integrated Sentinel-2 Time Series in the Mississippi River Delta:* **M K C**, X Meng, B Awasthi

1875453 *SINISA and the Evolution of Sanitation in Brazil: Data-Driven Insights on Investments, Performance, and Policy:* **C H Ribeiro Lima**, M Borges

1884033 *Sustainability Nexus AID Groundwater Module:* **R Soltanian**, F Moeini, Z Dai, A H Sawyer, J H Fleckenstein, Z Curtis, A Chaudhuri, J Doherty, G Chiogna, M Fahs, W S Han, H S Moon, L Zhu, Z Hussein Mseli, C Zhan, F Lotti, H Hoteit, M A Matin, A Zarei, D Al-Masri, K C Carroll, S G Evans, R J Versteeg, K Madani

1896026 *THE REGULATED PLANTS DATABASE: A COMPREHENSIVE PLATFORM FOR CROSS-JURISDICTIONAL INVASIVE SPECIES REGULATION:* **P Robeck**, M Mesgaran, G Lindley, M A Matin, F Kordbacheh

1906373 *Innovative Dual-Phase Optimization Approach for Precision Photovoltaic Forecasting in Campus Microgrids:* **A M Reta**

1910397 *Open Data and Analytics Tools to Support the Nexus Approach for Managing Land Subsidence and Landslides:* **M Motagh**, S Garg, F Cigna, P Teatini, A Bhardwaj, F Canaslan Comut

1919744 *Impact-based monitoring of droughts and their cascading hazards:* **A AghaKouchak**

1930492 *DIPLOMAT-WEF: Diplomatic Intelligence Platform for Observations, Management, and Assessment of Transboundary Water-Energy-Food Nexus:* **Y Khajavigodellou**, J Qi

1932121 *Integrating Crop Modelling and Producer Insights to Enhance Canola Sustainability in the Canadian Prairies:* **Y Gavasso Rita**, Y Li, A A Elshorbagy, C Schuster-Wallace, S M Papalexiou

1938515 *Spatiotemporal Dynamics and Machine Learning-Based Hotspot Classification of Artificial Light at Night in Nigeria (2014-2024): An AI-Assisted Geospatial Analysis:* **S O Ajoniloju**, P Biswas Paul, W King, A S M Alhassan, K O Yusuf

247090
Application of Data Science And Artificial Intelligence for Climate Change: Fostering Sustainable Solutions and Informed Decision-Making in Global Climate Change. (cosponsored by GSA: Geological Society of America) *(joint with A, GC, H, NH)*

Conveners: **Somita Chaudhari**, Japan Geoscience Union; **Pasquale De Toro**, Proferssor and Former Director, Interdepartmental Research Center in Urban Planning 'Alberto Calza Bini', The University of Naples 'Federico II',Italy; **Francesca Nocca**, Researcher, Department of Architecture of the University of Naples Federico II,Italy

252054
Building with Science Foundation Models: From Data to Impact

Conveners: **Iksha Gurung**, University of Alabama in Huntsville; **Campbell Watson**, Organization Not Listed; **Andrew Molthan**, NASA Marshall Space Flight Center

1903305 *Evaluation of Prithvi EO-2.0 on High Resolution Damage Assessment:* **D Shidham**, B Mujeci, A Akbari Asanjan, D Bell, R Ramachandran, S Roy

1924455 *Evaluation of Surya, a heliophysics foundation model, using a wide range of downstream applications:* **A Muñoz-Jaramillo**, S Bahauddin, D da Silva, D V Hegde, J Hong, S Kasapis, R M McGranaghan, C Pandey, S Roy, J Schmude, V Upendran, K Yang, A Lin, V Gaur, R Lal, M Freitag, J Jakubik, B Aydin, N V Pogorelov, T Singh, A Spalding, C Watson, M Maskey, J Bernabe-Moreno, R Ramachandran, M Guhathakurta

1938945 *Flood Risk Assessment in Bangladesh Using Remote Sensing, Hydrological Modeling, and Large Language Model Web Based Technologies:* **P Biswas Paul**, S O Ajoniloju, A S M Alhassan, A G F Edson, S Islam, M Aldophe

1977118 *Is technology addressing the groundwater challenges? Remote Sensing and Artificial Intelligence for Groundwater Assessment and Governance in the MENA:* **G Al Khawand**, J Nicolas, P Robeck

1999737 *Exposing the Nation's Most Vulnerable Dams: A Remote Sensing and Socio-Spatial Risk Framework:* **M Khorrami**, I Isiaka, C Becker, A Oleski, S Wilson, M Shirzaei, S Werth, F Vahedifard, A AghaKouchak

2001641 *Understanding the Role of Data in AID-Driven Flood Modeling Frameworks:* **A Naseri**, M Alobaidi, M Shaheen, O Seidou

1870948 *A Climatology-specific Large Language Model using Ensemble Projection Data toward Regional Climate Service:* **D Matsuoka**, S Kawahara, K Murakami, R Matsumoto, R Ito, S Sugimoto, D Sugiyama, M Hayashida, K Nguyen, A Peng, T Abe, I Sugiyama

1964087 *Neural Operators for High Resolution, Topography Aware Wind Downscaling:* **R DeMilt**, N LaHaye

1925983 *Context Injection via Vision-based Adapter for Finetuning Geospatial Foundation Model:* **B Mujeci**, W J Leong, D Shidham, D Bell, R Ramachandran, A Akbari Asanjan, S Roy

1938348 *Leveraging Embeddings from Geospatial Foundation Models for Annual Global Mangrove Monitoring:* **P Sherman**, M Grimshaw, L Chen, A Cohn

1954572 *Efficient Fine-Tuning of Atmospheric Foundation Models for High-Impact Weather Events:* **S Roy**, W J Leong, A Kumar, J Schmude, M Maskey, R Ramachandran

1959992 *Detecting Key Land Surface Phenometrics with the Prithvi Foundation Model and Harmonized Landsat Sentinel-2 Data:* **P A Arevalo**, M Qraitem, S Roy

1961863 *TerraKit: An End-to-end Library for Preparation of AI-ready Geospatial Datasets:* **B Edwards**, R Lickorish, B Blumenstiel, P Fraccaro, F Otieno, T Luo

1966789 *Leveraging QGen Studio for Scientific NLP: Dataset Creation to Training:* **M Moses**, M Elkaref, S Tanaka, J Barry, V Kuruvanthodi, C Watson, G De Mel

1968162 *Assessing and monitoring forest biodiversity factors using multimodal geospatial foundation models:* **Z Gaffoor**, C Mahlasi, G Dawson, G Baloyi, C Watson, A Jones, L Klein, M Muszynski, E Eben Vos

1975483 *Data-Information-Knowledge-Action Cycles: Developing an Ontology for Social-Scientific Practice in Earth Systems Modeling:* **A Bennett**, V A Alexeev, N Parlato, P Bieniek, N Fresco, R Thoman

1979539 *Operationalizing Prithvi EO 2.0 Foundation Model for Near Real-Time Earth Observation:* **V Kolluru**, S Chakraborty, R Shinde, A Marouane, C Helbling, I Gurung, L Goodman, M Maskey, R Ramachandran

1985216 *Compress Once, Decode Anywhere: Embedding Workflows with TerraTorch:* **J L Sousa Almeida**, B Zadrozny, I Wittmann, J Jakubik, T Brunschwiler, R Kienzler

250434
Commercial Earth Observation Data: Research and Applications

Conveners: **Frederick Policelli**, NASA Goddard Space Flight Center; **Dana Ostregna**, NASA Goddard Space Flight Center; **Aaron Kaulfus**, NASA Marshall Space Flight Center

1857570 *High Resolution Commercial and Historic Low to No-Cost Satellite Imagery – Access and Multidisciplinary Applications:* **P G Rinkleff**

1862772 *Mapping Crop Type and Land Cover at High Resolution Without Labels Using Variational Bayesian Gaussian Mixture Model and Multi-Temporal PlanetScope Imagery:* **M T T Le**, K H Tran, P Dao, H M El-Askary, T Ha, T Park

1876730 *Detection of Species-specific Plant Phenology from PlanetScope Data in Arid and Semiarid Rangelands:* **Y Liu**, X Zhang, Y Ye, Y Shen, A Shuai

1952913 *Analysis of Commercial GNSS-R Level-1 and Level-2 Data:* **D S McKague**, M Al-Khaldi, D Twigg, J T Johnson

1957198 *Surface Precipitation Retrieval Validation for the Tomorrow.io Pathfinder Radars over the Contiguous U.S.:* **D Watters**, P E Kirstetter, A Matland-Dixon, S Ringerud

1961354 *Characterizing new thermal features in Yellowstone with high-resolution commercial satellite images:* **R G Vaughan**, D P Mayer, C J Phillips, J Hungerford

1969556 *Advances in NASA's Commercial Satellite Data Acquisition Program:* **S A Klene**, F S Policelli, J R Bell, J E Nickeson, J Brennan, A S Kaulfus, D Ostregna

1975722 *Commercial Satellites Aid Monitoring of Los Angeles Wildfires:* **S Goldberger**

1987138 *On the Promise and Challenges of Geospatial Foundation Models for Earth Science:* **W Li**, C Y Hsu, S Wang, H Lee, C Lu, S Roy, R Ramachandran

1992037 *Building a Scalable Platform for Geospatial AI Model Inference and Fine-Tuning:* **F Otieno**, B Ogolla, P Burrows, R Lickorish, B Moturi, C Wanjiru, T Luo, R Bryant, C Wachira, P Fraccaro, B Edwards

1994557 *Precipitation Downscaling with Diffusion Models Conditioned on the Prithvi Weather Foundation Model:* **V Nascimento Ribeiro**, J L L G Guevara Diaz, A Jones, C Lucas, J S Moraga, N Lord, A Taylor, W Trojak, E Lockhart

1976162 *Evaluation of True Spatial Resolution for Earth-Observing Visible-Near-Infrared Sensors:* **A Semple**, B Tan, G Lin

1977867 *Large area 2 m land cover mapping and change analysis of Amhara Ethiopia using convolutional neural network ensembles on WorldView imagery for 2009 – 2024:* **W G Alemu**, C S R Neigh, J Caraballo-Vega, M Wooten, E Muluken, G M Maru, M E Brown, K J Wessels

1978394 *Using Commercial Earth Observation Data to Monitor Grassland Biodiversity:* **H Gholizadeh**, M N A Rakotoarivony, B Bachelot

1978723 *Stakeholder-Informed Use of Commercial GHGSat Data To Monitor Methane Emissions Over a Solid Waste Landfill in Rio de Janeiro:* **F Ajisafe**, M S Islam, F Mandarino, P Carvalho, D Wood

1983874 *Using Commercial Spaceborne SAR data for Ice Sheet Research:* **B Scheuchl**, E J Rignot, S Herreid, J B Barré, M Poinelli, R Gadi, S Shamsian

1986387 *Characterizing Vegetation in Agricultural and Forest Sites with Harmonized Landsat and Sentinel-2 LS and Commercial Satellite Data:* **W Wagner**, P K E Campbell, C S R Neigh, M Wooten, K F Huemmrich

1990821 *From Pixels to Processes: Advancing Earth Science with Persistent Commercial Hyperspectral Data from Pixxel Satellites:* **J Kravitz**, S Yeggina, S Ambudkar, C Jalluri, S Banerjee, P Sivaraj, A Joshi, B Bohra, L Baburajan, A Upadhyaya

1995116 *Large-scale High-Resolution Topography of Earth's Surface from Maxar Imagery: Production Updates and Distribution Plans for the EarthDEM Project:* **C C Porter**, D Power, I M Howat, M J Noh, J Klassen, J Bakker, J Dickson

1996025 *MTF as an indicator of image quality, data efficiency and user friendliness:* **G Lin**, A Semple, B Tan

1996953 *Forecasting Urban Flood Extents Utilizing High-resolution Commercial Satellite Images and Innovative Regional Urban Hydrologic Modeling Framework:* **Y Li**, Z S Chen, T L T Du, H Lee, H Li

1997066 *Limited Sample Domain Adaptation for Shrub- and Tree-Crown Delineation in New Mexico Rangelands Using 0.5 m Maxar Imagery:* **J Anchang**, L Boucheron, N N Kahiu, N P Hanan

249603
Connecting Data through Governance and Stewardship

Conveners: **Ge Peng**, The University of Alabama in Huntsville; **Sara Lubkin**, NASA Headquarters; **Nancy Ritchey**, NOAA National Centers for Environmental Information; **Hampapuram Ramapriyan**, NASA Goddard Space Flight Center

1850848 *Aligning NASA Earth Science Data Stewardship with FAIR Principles:* **G Peng**, Y Wei, B Ramachandran, G Chen, E M Armstrong, H Ramapriyan, Z Liu, R Gens, D F Moroni

1868825 *EarthScope's Evolution in Global Data Stewardship:* **T Ronan**, J Swiatlowski, A Stansberry, C Trabant, J Carter

1930808 *Curation for Earth observation satellite catalog at JAXA:* **Y Ikehata**, M Natsuisaka Dr, T Kitayama, T Nio

1957593 *LLM-Powered Natural Language Question Answering over Critical Mineral Data Using Knowledge Graphs and Hybrid Retrieval-Augmented Generation (RAG):* **A Davarpanah**, H A Babaie

251252
Connecting Data to Science: Innovations bridging disparate samples, field-based data, and satellite observations to advance discovery
(joint with A, B, GC, H)

Conveners: **Stephanie Wingo**, University of Alabama in Huntsville; **Natalie Raia**, University of Minnesota Twin Cities; **Lindsay Parker**, Science Systems and Applications, Inc. Hampton; **Sara Lubkin**, NASA Headquarters

1898047 *"Alive Data": Improving Data Visibility and Transparency through Collaborative Data Tools:* **M DeLue, MSc**, B Crevensten, K Redilla, N Fresco, S T Rupp, C Parr, J Paul, C Stephenson, B Torgerson

1921101 *Calibration and Validation of High-Resolution Satellite Vegetation Data Products:* **S Pinkey**, C Carter

1997705 *From Sensors to Science: The Critical Role of Cal/Val in the Commercial Remote Sensing Landscape:* **Z Jelenak**, P Chang, G Peltzer, N Laudier

1999467 *Preliminary study of the commercial polarimetric radio occultations: Spire data and simulation:* **H Zhang**, D Hunt, J Braun, Y H Kuo, J Weiss

1969253 *Earth System Data Stewardship in Practice: Building an Integrated, Collaborative, and Creditable Ecosystem:* **A Radhakrishnan**, L Koellermeier, W Cowles, C Blanton, K Rand, C Wilson, W Anderson, K Schepel

1970425 *When Citation Isn't Easy: Gaps in Infrastructure Supporting Data and Software Citation:* **K T Vrouwenvelder**, N H Raia, A Thomer

1975279 *Into the Void: Bridging Data Silos with Interoperable Repositories:* **R Rossi**, D LeBel, J C Gibeaut

1982613 *Data Curation through Governance and Stewardship in Intergovernmental Panel on Climate Change (IPCC) Seventh Assessment Report (AR7):* **X Xing**, G Delgado, A Alikadic, A Lamb, L E Sitz, A Milward, M Stockhause, C Pascoe, S Vicuna, A Niamir

1984004 *Communities in Relation: SEEKCommons in the entanglements of knowledge-sharing:* **M Milia**, L F R Murillo, A S Lippolis, D Howard, E Waisanen, L Rasberry, G Heber

1956678 *Data Puzzles: Bridging Research Data and Science Classrooms to Broaden Impact and Build Data Literacy:* **A U Gold**, J Griffith, J R Bean, K Wingert, A Thurber, K Hunter-Thomson, C Okochi, A Brickley, K Lemus, J Rosenberg, K Jones

1962773 *A NASA Data Steward's Experience on Evolving Curation Practices of Airborne and Field Data:* **M Thornton**, S Pearson, R Shrestha, J S Lowndes

1963461 *Irreconcilable Differences? Challenges to Validating Gridded Land Models with Flux Tower Measurements:* **H Zafar**, B Weir, A N Shiklomanov, L Ott

1976587 *CRISP: Compiling In Situ Temperature Data on Coral Reefs:* **A Strange**, J Blas, P Colin, A Heck, O Jasnos, E Johnson, M Sison, T DeCarlo

1977902 *Advancing NASA's Earth Science Metadata Quality Through Collaborative Enterprise Stewardship:* **S R Leslie**, B Wilson, T Stevens, S Ritz, V Dixon, D J Newman

1990962 *TERN Data Infrastructure: Supporting Australia's Continental-Scale Ecological Research:* **G Siddeswara**, A S Ramesh, G Weis, A Chandra, E Luo, G Huang, J Yu, K Larsen, M Eliyahu, M Edward, J S Gonzalez, T Lan, W Karsdorp, Y Liaw

250823
Cross-Disciplinary Approaches to Science Data Systems Designs and Implementations

Conveners: **Matthew Bourque**, University of Colorado at Boulder; **Veronica Martinez**, Cooperative Institute for Research in Environmental Sciences; **Kyle Westfall**, University of California Observatories; **Julius Busecke**, LDEO/Columbia University

1849648 *Growing science with ACORN: At the intersection of research and communications, we have developed an initiative to capture, standardize, and analyze research at the project level, one organization at a time, powered by open source software called ACORN.:* **J Wohlgemuth**, A Carson

1856627 *The TRACERS ACI Data System and Cusp Analysis Tool:* **J Mukherjee**, G Ajaykumar, S A Fuselier, M Cartwright, R G Gomez, D Miles, J Furman, U Salman, S Ybarra

1862217 *Adapting Open-Source Tools for Commercial Applications: Developing the SET Space Weather Forecast Dashboard:* **K Wahl**, K Drumm, A Sosnov, W K Tobiska

1871156 *Advancing Water Quality Intelligence with the Aqua Watch Data System (ADS) - Implementation details, adoption challenges and success stories.:* **T Dhar, BEng (Hons)**, B Melville, G Squire, M Paget, R Woodcock, T Sotiropoulos

1874236 *Data Weaver: A Scalable Science Pipeline Execution Engine for the Dragonfly Mission:* **J Strang**, R C Espiritu, Y Itoh, K Hancoock, J Turner, E Winter, L Knowles

1881489 *CUDEM+IVERT: An Open-Source Framework for Rapid Development and Validation of High-Accuracy Digital Elevation Models:* **M J MacFerrin**, C Amante, M R Love, E Lim, K S Carignan

1909343 *NVIDIA Data Federation Mesh: Programmable Service Pipelines for Earth Science Data and More:* **K Paul**, C Angerer, J Zielinski, S Duthaler, O Kononova, D Fransos, A Hota

1910471 *Standardizing and validating Solar Datasets, the SOLARNET project:* **A Robbertz**, S Haugan, T Fredvik, S Christe

2000596 *From Field to Laboratory to Science: Advancing the Application of Samples and Sample Data for Data-Driven Discovery:* **K Lehnert**, A Thomer, N H Raia, J Mays, L Profeta, P Ji

2001723 *Bridging Forecasting and Impact: A New Framework for Hurricane Risk Analysis:* **A Serre**, U Nair, B Freitag, A S Kaulfus, A Blackford, G Priftis

1923747 *Josh: Inclusive Cross-Disciplinary Vegetation Modeling via Domain-Specific Language, Scaling from No-Install Prototyping to Distributed Cloud:* **A Pottinger**, N Gondek, L S Layritz, M Zomer, N Graver, A Anderson-You, M Weltman-Fahs

1924209 *Automatically Archiving, Cleaning, Processing, and Distributing Energy Data For Public Accessibility:* **D Xia**

1925195 *Tracking Geoscience Data and Model Usage through Science Explorer (SciX):* **A Kelbert**, S Jarmak, A Accomazzi, E A Henneken, D Chivvis, C Grant, J Pomerantz, J Koch

1926815 *A Multi-Layered IoT Architecture for Urban Microclimatology:* **V Kanwar**, V K Nippulapalli, O Aydin

1927357 *From Design to Impact: NCEI's Cross-Disciplinary Approach with Polars, CI/CD, and Open Data:* **S Purpura**, B Smith, L McBride, K Fischer

1958604 *Enhancing SWxSOC through Open Collaboration for Multi-Mission Data Processing and Expedited Release:* **S Kreisler**, S Christe, D Barrous-Dume, A Robbertz, D Skeberdis, W R Paterson

1961564 *Event-Driven Cloud Architecture and Open Science: The Interstellar Mapping and Acceleration Probe (IMAP) Science Data Center (SDC) Approach to Data Processing and Dissemination:* **M Bourque**, T Choedon, B Harter, M Hartnett, S Hoyt, G Lucas, A Manica, L Coakley, T Marbois, V Martinez, T Plummer, D Rhode, L Sandoval

1963892 *NetCDF: Strengthening core technologies while embracing a changing scientific and computation landscape:* **W I Fisher**

1979855 *Standardizing SnowEx data discovery and access through a central database and open-source client library:* **J Meyer**, A A Arendt, M J Johnson, M Sandusky

1982216 *Cloud-native platforms as the natural evolution of atmosphere-ocean open-data practice:* **D Cherian**

1989155 *Leveraging the Power of Data Catalogs in Data Publication Workflows:* **A Radick**, A Radhakrishnan, A Chiachi, H Murakami, J W Baldwin, R R McCrary, C Wilson, D O Benson

1995639 *Neptoon: An extensible software tool for data processing of cosmic-ray neutron sensors to serve environmental research, education, and applications:* **M Schrön**, D Power, R Rosolem, T Francke, F Erxleben, S Zacharias

2003526 *Lessons Learned in a Community of Practice for Multi-mission Collaboration of Large-Scale Science Data Processing Capabilities from Research to Missions to Analysis Platforms:* **H Hua**, S Shah, S Algermissen, S C Niemoeller, L B Dang

250287
Data and Information Services and Research for interdisciplinary Research and Applications in Earth Science *(joint with A, ED, NH, SY)*

Conveners: **Vasco Mantas**, University of Coimbra, Portugal; **Zhong Liu**, George Mason University Fairfax; **Karyn M. Tabor**, US Agency for International Development; **Binita KC**, Oak Ridge National Laboratory

1865460 *The Thematic Observation Search, Segmentation, Collation and Analysis (TOS^{2}CA) System: Using Interdisciplinary Data and Visualization Tools to Define Physical Phenomena:* **B Knosp**, Z S Haddad, I Fenni, R Fuller, S M Hristova-Veleva, F Platt, F Polverari, S Prasanth, R Sawaya, Q A Vu

1894540 *Developing Metrics for Earth Science to Action:* **Z Liu**, C L Shie, M Hegde

1895210 *Implementing Scalable Cloud Computing and Data Analytics and Cloud Native Analysis-Ready-Cloud-Optimized (ARCO) Data:* **S R Shrestha**, C Cao, I A Csiszar, P M DiGiacomo

1930518 *Building Bridges Across the Hydrosphere - PO.DAAC's Transition to Increasingly Unified Data and Services:* **C Ou**, N Tarpinian, D Henze, E M Armstrong, C M Oaida Taglialatela, S Cosic

251276
Democratizing Data: The Future of Air Quality Monitoring *(joint with GH)*

Conveners: **Darren Riley**, JustAir; **Kelly Crawford**, DC Department of Energy and Environment

1874488 *Development of an Open-Source Harmonized Low-Cost Sensor Data Archive to Maximize Scientific Return from Existing Networks:* **K Okorn**, N Golla, M Harjamaki, V Ramirez

1897542 *A Community-Engaged Approach to Air Quality Monitoring in South Baltimore:* **L Neftaliem**, R Rich, R Mady, D Brown Jr, L LaGorga, T Smith, V Onyango, A Felix, C B Field, R B Jackson, A Cawood

1921579 *Biosurveillance for the Future: Rapid Detection of Pathogens in Our Environment:* **S Frazier**, D Marshall, F Bhinderwala, K Klaus

1956721 *Spikes in Near-Railway Black Carbon and Particulate Matter:* **C Rosa Rivera**, S Hsieh, E Flores, N Ivatury

1931148 *Discovering the Trend and Patterns of Wildland Fires in USA and the Role of Climate Change:* **T Chen**, X Hao, J J Qu

1946838 *Importance of Suborbital Metadata Standardization for Search, Discovery, and Reuse:* **S M Wingo**, D J Newman, S R Leslie, M Thornton, S H Lubkin, R Abbott, K Saad, T Stevens, A S Kaulfus, M Maskey

1963776 *Integrating Disparate Data and Models to Project the Extent of Seasonal Flooding in South Sudan:* **J P Verdin**, K Slinski, M S Pervez, L Harrison, A McNally, M E Budde, C Shitote, A Hoell, K M Tabor

1986053 *Accelerating Science using Virtualized Data:* **E M Armstrong**, D Henze, I G Fenty, M Gangl, C Ou

1991125 *Enabling Open Science Across Multiple Levels of Processing and Scales over Heterogeneous Earth and Environmental Science Repositories: a Case Study from AuScope:* **R Farrington**, L A Wyborn, A Hunt, J F Klump, A Devaraju, V Fazio, A Robinson, J Croucher, H Hollmann, Y Liu, B Ware, A Nixon, S Polanco, T Rawling

1995225 *Using Post Processing Job Metadata to Optimize HPC Node Configuration at NOAA's GFDL:* **A Kiihne**, I Laflotte, C Blanton, B Tejerina, R Benson

1957727 *Local Surface Wind Sensors Complementing Radio-Networked Smoke Sensors for Public Air Quality Insights at Prescribed Burns:* **M Rand**, V Huynh, D Neamati, A Raigosa, E Twarog, Q Vo, H Watkins, P Mahowald, J Yu

1978204 *Community-Led Air Quality Monitoring in East Oakland, California:* **C Preble**, A Watts, S Taylor, N Tisdell, G Gutierrez, A Scott, K Hoag, D Alrick, J Lapka, J Ofodile

1978211 *Establishing the Air Quality and Green Workforce Development Program (AQ - GWDP) in South Los Angeles, California:* **R Patterson**, E Mendie

1995036 *CAMPing in Harlem: Environmental Justice Through Community Air Quality Monitoring.:* **V Rojas Posada**, C M Jusino, K J Koritz, M Yoshida, M Salgado, M E Martinez

1995112 *CAMPing in Harlem: Environmental Justice Through Community Air Quality Monitoring:* **V Rojas Posada**

1997977 *Disparities in Urban–Rural air quality levels: Insights from the AMRIT Sensor Network in the Indo-Gangetic Plains:* **S N Tripathi**, A Kumar, N Godhani, A PC, N Agrawal

248157
Earth Observations (EO) for Sustainable Environmental Development *(joint with A, H, NH, SY)*

Conveners: **Sushel Unninayar**, NASA Goddard Space Flight Center; **Corena Pincham**, Booz Allen Hamilton DC; **Danielle Wood**, Massachusetts Institute of Technology; **Jared Entin**, NASA Headquarters

1861489 *Sea Level Rise and Coastal Inundation: Evidence from Copernicus Data and Time Series Satellite Imageries:* **A Akinwumiju**, O Oluawfemi

1995629 *SDGs-EYES: Leveraging Earth Observation for Advancing the Monitoring of Land-, Water-, and Climate-related Sustainable Development Goals:* **M Balzarolo**

248281
Earth Science data stewardship in the cloud

Conveners: **Douglas Newman**, Raytheon Company Riverdale; **Tom Sohre**, USGS Earth Resources Observation and Science (EROS) Center Sioux Falls; **Kenneth Casey**, NOAA National Centers for Environmental Information

1878580 *The Open Information Stewardship Service (OISS): NOAA's New Cloud Archive and Stewardship System:* **K S Casey**

1897097 *Stewarding NASA's Earth Science Data in the Cloud:* **J Burnett**, D J Newman

1958958 *Migrating Marine Trackline Geophysical Data to the Cloud: A Paradigm Shift for Data Management:* **R Peterson**, B Meyer, J Schweizer, T Mitroi, M Royer, R Klucik

1975094 *Sidecars in the Cloud: Metadata Stewardship for Large-Scale Scientific Archives:* **J H R Gallagher**, M Jimenez-Urias

1989126 *Updated approaches for efficient and scalable stewardship in the Earthdata Cloud:* **T D Goff**, B Williams

1996551 *Modernizing Earth Science Data Stewardship: NASA NSIDC DAAC's Transition to NASA Earthdata Cloud:* **A Leon**, A E Steiker, C Bond, S R Leslie, K L Gergely

1998583 *Improving Exploration of the Storm Events Database leveraging NOAA's Open Information Stewardship Service:* **A Bergeron**, D Aguilar

2000557 *Taming Fire or How We Learned To Stop Worrying and Love Cloud Cost Management:* **B Williams**, T D Goff

251602
Earth System Digital Twins : space data and models for understanding and action *(joint with A, EP, H, NH)*

Conveners: **Chaowei Phil Yang**, George Mason University Fairfax; **Benjamin Smith**, NASA Jet Propulsion Laboratory; **Vincent Lonjou**, CNES French National Center for Space Studies; **Laura Rogers**, NASA Langley Research Center

1849082 *Building an EO-Driven Digital Twin for Ice Sheets in Support of EU DestinE:* **S B Simonsen**

1849102 *A digital twin for the Nokoué lagoon (Benin):* **Y Morel**, A Chaigneau, T Duhaut, S Biancamaria, J Mora-Mussio, P van Beek, N Ferdinand, P Marsaleix, A Kouraev, Z Sohou, L Ntangyong, F Rétif, V Okpeitcha

1868990 *An Earth System Digital Twin for Wildfire: Forecasting Wildfire Dynamics and Downstream Air Quality Impacts:* **M Pourhomayoun**, D Krum, T Huang, J T Roberts, C P Yang, D Comer, S Hasheminassab, O V Kalashnikova, G Llewellyn, C Hagerbaumer, J Holm

1901385 *Building a Computing Infrastructure Digital Twin (CIDT) for Real-Time Monitoring, Log Analytics, and AI-Driven Anomaly Detection:* **Y Masri**, J Rogers, E Ma, Y Lan, Z Wang, C P Yang

1910692 *Wetland Segmentation and Mapping with Independent Block Using Enhanced U-Net Variants:* **Q Liu**, Y Song, S Bao, Y Zhang, R Guo

1961047 *Engaging the community: a digital twin center of excellence practice:* **C P Yang**, A S Malarvizhi, T Huang, M Pourhomayoun, L Liu, Q Huang, M Yu, M M Little, J Kim, J T Roberts, R Chidananda, Z Wang

1979097 *Resilience in 4D: AI-Driven Geospatial Digital Twins for Urban Flood Simulation and Management:* **L Zou**, D Mandal, B Zhou, Y Yang, M Yang

1980948 *GeoSync-ERA: A Geo-Synchronized Digital Twin Advancing Dynamic 3D Modeling, Interactive Analytics for Tactical Wildfire Response:* **M H Raha**, A Tavakkoli, M Habibpour, C Webb, F Afghah, J Coen, N D Beres

1986419 *TERRAHydro: Toward an Interactive, Real-Time Terrestrial Digital Twin:* **C Pelissier**, G S Nearing, PHD, D Raghunandan, M Saeedimoghaddam, A Saranathan, B Smith

1987709 *Chesapeake Bay Digital Twin:* **S Ahmed**, M M Little, C P Yang, A S Malarvizhi, R Chidananda

252362
From Data to Discovery: Infrastructure Driving Earth Science

Conveners: **Siddharth Chaudhary**, University of Alabama in Huntsville; **Brian Freitag**, University of Alabama in Huntsville

1853573 *Building the Next Generation of USGS Water Data APIs:* **M Mahoney**, A Viedma

1870883 *DEEP: DDE Enabling and Empowering Platform:* **S Wu**, L Hu, Z Du

250290
General Informatic Session

Conveners: **Ranjay Shrestha**, NASA Goddard Space Flight Center; **Debjani Singh**, Oak Ridge National Laboratory; **Weiming Hu**, University of Georgia; **Rebecca Farrington**, AuScope

1871833 *Revealing Patterns of Atmospheric Deep Convection through Formal Concept Analysis:* **J Richard**, J P Chaboureau

1888542 *AMIDER: Advancing a Multidisciplinary Research Database and Its Applications:* **M Kozai**, Y Tanaka, S Abe, Y Minamiyama, A Shinbori, A Kadokura

1916282 *Building an Operational Cyberinfrastructure for Marine Biology: Edge-to-Cloud Integration in the ANERIS Project:* **I Rodero**, J Piera, R Díez, K Soacha, V S Salvo, PhD, N Medina, S Liñan, J Queral, R Bardaji, O Osychenko, E Bonfill, X Salvador, S Zaragoza, B Companys

1989114 *Digital Twin Approach Using Machine Learning to Fill Satellite Data Gaps in Chlorophyll-a Monitoring in the Chesapeake Bay:* **R Chidananda**, C P Yang, A S Malarvizhi, S Ahmed, E Zhang, J Aronow

1998368 *Designing for Preparedness: An Earth System Digital Twin Architecture for Coastal Zones:* **T Grubb**, V Ly, T Allen, S Schollaert Uz, H Hua, P Grogan, S V Kumar, S K Ahmad, M Subbarao, A Gurvich, PhD, N Chung, B Huffman, B Terry, L Nguyen, T Chee, R Kuttruff, S Katragadda, S Shah, J T Roberts, P Marbley

2001739 *Generative Deep Learning for High-Resolution Land Surface Evolution Modeling Using Satellite and Climate Data:* **J Pigeon**, F Khomh, P Maghoul

1928615 *Moving the EarthScope MUSTANG Quality Assurance System Into the Cloud:* **L Keyson**, R Gaffney, D Stoner, G Sharer, D Chen, S Smith, C Trabant, D Mencin, J Carter

1942567 *Advancing Earth Science through AI: UAV-equipped Wildlife Detection Process using Computer Vision and Large Language Model:* **R Tripathi**, N Sharma, V Tripathi, R Badola, S A Hussain

1973155 *Enabling Cryo Science at Scale: How ITS_LIVE is Providing a Serverless Analysis Ready Archive of the Future:* **J H Kennedy**, L A Lopez, A S Gardner, C Greene, M A Fahnestock, M Liukis, A Player, M Angarita, P Gadomski

1934267 *AI-Powered Data Extraction, Integration and Analysis on the Geochemistry of Returned Lunar Samples:* **P Wang**, D Pelaia, Z Zou, S Xiao, A He, N He, F Zhu, N Mao, J Wu, Y Chen, J Wu, M Jiang, C R Neal, S Huang

1972858 *Graph-Based Contaminant Identification in Mixture of Analytes Relevant to Soil Studies:* **T Biswas**, A Sengupta, P Matute, J Stephens, L Basirico, K Armbrust

1974352 *How HDF5 2.0 Improves Data Access in the Cloud:* **A Jelenak**

1992685 *SAR-to-Multispectral Optical Image Translation for Enhanced Vegetation Monitoring in Remote Sensing:* **M Kim**, S Park

1994344 *FLASH: An AI Chatbot for Real-Time Flash Flood Risk Detection and Information Dissemination:* **D Pelaia**, N He, P Wang

2003494 *CI/CD Pipeline for Multi-Language Geophysical Models: A Case Study to Enhance Code Quality and Scientific Reproducibility:* **M Hirsch**, M D Zettergren

2003854 *GeoAI Advances in Specific Landform Mapping:* **M von Pohle**, S T Arundel, A Akbari Asanjan, N Oza, A Lott

251374
Geospatial Data, Models, and Decision Support Systems, Meeting the Needs of Today's Federal Agencies

Conveners: **Stephen Ambrose**, Organization Not Listed; **Morgan York**, Alpha Omega, LLC

1849293 *Geo-AI and IoT Networks for Real-Time Mission Support. Fusing Geo-Spatial AI with IoT networks enables agencies to generate real-time, location-aware insights across infrastructure, public safety, and the environment—accelerating decisions with telemetry, digital twins, edge-derived intelligence, and predictive analytics.:* **V Venkateswaran**

250398
Geospatial Foundations Models – Applications for Terrestrial Weather and Space Weather
(joint with A, NH, SH)

Conveners: **David Bell**, Universities Space Research Association (USRA); **Tsengdar Lee**, NASA

1871182 *Climate Downscaling with Geospatial Foundation Models:* **W Wang**, H Hashimoto, T Park, I G Brosnan, H Chen

1863403 *The PermitAI Application Suite and GeoAI Testbed for Accelerating Permitting:* **A Bernat**, H Wan, C Davis, A Devulapally, B Chauhan, M Taylor, A Reed, S Wagle, A Harrison, S Spare, M Gupta, R Raab, S Chaturvedi, M Parker, D Nally, S Montgomery, A Buchko, T Edwards, T Vega, S Munikoti, S Horawalavithana

1892541 *Informing NASA Earth Science Priorities: Findings from the Satellite Needs Working Group Federal Agency Surveys:* **K Virts**, E Raphael, B C Ray, R Bridgeland, P Olofsson, PhD, N Sadoff

1919849 *The Applied Earth Observations Innovation Partnership (AEOIP): Highlighting A Continuing Framework to Address Stakeholder Data Needs & Broaden the Use of NASA's Geospatial Products:* **A H Armstrong**, E Hinkley, S Delgado Arias, T Assal, J Burnett, J Hewson, E E Hoy, A Lister, A R Neeley, B Peterson

1934547 *Data Stewardship in the Cloud: Navigating the NCCF and OISS to Get Your Data in a Cloud Archive:* **T Hanke**

1925693 *Climate in a Bottle: A Multi-Modal Generative Foundation Model for On-Demand Kilometer-Scale Climate States:* **D Hall**, N Brenowitz, T Ge, A Subramaniam, P Manhausen, M Mardani, A Gupta, A Vahdat, K Kashinath, M Pritchard

1968477 *Learning Global Geostationary Representations with DINO-MAE: A Self-Supervised Foundation Model for Longwave IR Imagery:* **D Shidham**, O M Alexander, T Berg, J Makki, A Akbari Asanjan, C Crawford, S Chakraborty, S Peng, A Ravindran, O Raiman, D Potere, D Bell

1999005 *Predicting Persistent Contrail Formation with Satellite Sounding Fusion Data:* **S Gutierrez-Nolasco**, E Cook, D Bell, B Sridhar, W L Smith Jr, D P Duda

253380
Greg Leptoukh Lecture for the Earth and Space Science Informatics Section

Conveners: **Krisa Arzayus**, National Weather Service Silver Spring; **Krisa Arzayus**, National Weather Service Silver Spring; **Sudhir Shrestha**, NOAA NWS Office of Water Prediction

252486
Open Source Geospatial Workflows in the Cloud: Tools and Techniques for Data Access, Analysis, Visualization, Storytelling, and Sharing in the Python and Jupyter ecosystem *(joint with ED, SY)*

Conveners: **Qiusheng Wu**, Binghamton University, State University of New York; **Chelle Gentemann**, NASA Headquarters; **Max Jones**, Development Seed; **Tyler Erickson**, Google, Inc.; **Wilson Sauthoff**, Colorado School of Mines

1847020 *Decoding Climate Science with Open Data Resources: What AI's Energy Needs Mean for Our Planet:* **B McClain**

1854723 *GNNWR: an open-source package of spatiotemporal intelligent regression methods for modeling spatial and temporal nonstationarity:* **Z Du**, S Wu

1880938 *GeoJupyter and JupyterGIS: Exploring More Approachable Geospatial Data Workflows as an Open Source Software Community:* **M Fisher**, F Perez, M Renou, A Verma, N Brichet, M Ben Ismail, D Brochart, G Mooney, S Corlay, A Fouilloux, E Filiz, C Martinez

1902613 *The extensible social infrastructure enabling NASA Earthdata science in the cloud:* **J S Lowndes**, A E Steiker, A Teucher, Y Panda, M Jami, E E Holmes

1920247 *SnowPit: Using Snow Science to Develop a Set of Best Practices for Effective Collaboration in a Cloud Environment:* **Z Fair**, C Vuyovich, A A Arendt, M Studinger

1921254 *Open-Source Geospatial Modelling Framework for Urban Heat Vulnerability in Dhaka: Sentinel-1-Based Soil Moisture Retrieval Using Modified WCM with SMAP Calibration and Vegetation Index Integration:* **M A Islam**, A F Aishi, MS

1935037 *Planetary-scale geospatial computing tool for GRACE-derived terrestrial and groundwater monitoring:* **A Arshad**, A Mirchi, F U Haq, F Jazaei, T N D Tran, M Shafeeque

1957436 *A Study on the Quality of OpenStreetMap Road Data at the County Level in the Contiguous United States:* **D Li**, M Maha Gamage

1960726 *Co-Designing Cloud-Enabled Geospatial Workflows: Building Earth Data Science Capacity with Tribal Communities through Sovereignty-Aligned Open Science Infrastructure:* **L Jones**, J Sanovia, V Iglesias

1967602 *SAR Foundations to NISAR: Self-Guided Education with ASF Notebooks:* **A Lewandowski**, M Angarita, K Arnoult, B Buechler, S Gallagher, J H Kennedy, Z Hoppinen, E Lundell, F J Meyer, D Palmieri, A Player, C Showalter, S Shriver

1971552 *Cloud-based Workflows for Antarctic Atmospheric Rivers: Successes and Challenges:* **J Butler**, M Maclennan, F Perez, J McAuliffe

1972814 *Virtual dataset integration into earthaccess: Community contributions to enable Earth science at scale:* **D E Kaufman**, A E Steiker, J H Kennedy, C Battisto, L A Lopez, D Henze, A Nag, M Jimenez-Urias, T Nicholas, J J M Busecke, J S Lowndes

1973441 *Portable and Reproducible Data Discovery & Harmonization:* **S Grigsby**, T Teisberg

1973734 *Building the Cal-Adapt: Analytics Engine, a Cloud-Native Open Source Climate Platform for California:* **N Thomas**, B Galey, E Lehmer

1974792 *GeoJupyter: streamlining the lifecycle of geospatial research with the Jupyter ecosystem:* **F Perez**, M Fisher, C Martinez, M Renou, S Corlay, A Verma, M Ben Ismail, D Brochart, N Brichet, G Mooney, A Fouilloux, E Filiz

1975781 *Design and Validation of a Grid-based Home Detection via Stay-Time (GHOST) Software for Mobile Location Data:* **A Recalde**, M Sameen, X Zhang, X Zhao

1978783 *Building interoperable research communities with Jupyter: Lessons from CryoCloud and beyond:* **T Snow**, J Millstein, C Holdgraf, Y Panda, J Colliander, PhD

1984433 *OPeNDAP in the Cloud: Metadata Driving Performant, Interoperable, and Sustainable Geospatial Workflows:* **M Jimenez-Urias**, J H R Gallagher, H Robertson

1985268 *Accessible, online guidebooks for open source geospatial workflows on the cloud:* **M Jones**, A Barciauskas, K Barron, L Thomas, Z Deziel, A Mandel, J Signell, R Hagen

1999192 *A Cloud-Ready Software Ecosystem for Natural Hazard Research, Education, and Outreach:* **M Wallner**, B Freitag, A Blackford, J Bonucchi, A S Kaulfus, M Maskey, J Cook, I Montgomery, U Nair, G Priftis, A Serre, R Minor, T Parkes

2002734 *Pan3D: A Python-Native Toolkit for Interactive, Scalable, and Reproducible 3D Geoscientific Data Visualization:* **D Dwivedi**, S Jourdain, J Tourtellott, A Yenpure, A Chaudhary

249833
Increasing Resilience of Global Earth and Environmental Science Data Supply Chains *(joint with SY)*

Conveners: **Steve Diggs**, University of California Office of the President; **Lesley Wyborn**, Australian National University; **Ruth Duerr**, Ronin Institute for Independent Scholarship; **Reyna Jenkyns**, Organization Not Listed; **Jaycee Choi**, Tufts University

1860313 *Repository Crisis Scorecards - An Assessment of Organizational Resiliency to the Unexpected:* **J Gum**, R Duerr, R E Blake, L A Wyborn, J Choi, A Garretson, R Jenkins, G Koren, A Nurnberger

1966205 *AuScope Enabled Collaborative Infrastructure for a Sustainable Geochemical Data Ecosystem:* **B Ware**, B I A McInnes, B Lodhia, H Ananuer, S C Boone, H Dalton, Y Gréau, M McMillan, A Nixon, A Savelkouls, O Alard, A Gleadow, S Glorie, B Kohn, R Zhou, F Kohlmann, W Noble, M Theile, T Rawling, R Farrington, J Condon

1993218 *Sustaining a Data Facility in Uncertain Times: Measures Taken at IEDA2:* **K Lehnert**, A Thomer, N H Raia, G K Ustunisik, R L Nielsen, K A Block, L Profeta, P Ji, S Cao, J D Walker

252574
Integrating Immersive Technologies with Human-Robot Interaction for Extraterrestrial Construction (cosponsored by AAS: American Astronomical Society,EGU: European Geosciences Union,GSA: Geological Society of America,NSPS: The National Society of Professional Surveyors) *(joint with P, SY)*

Conveners: **Carlos Gary Bicas**, Louisiana State University; **Suniti Karunatillake**, Louisiana State University; **Amirhosein Jafari**, Louisiana State University

1879646 *Pioneering work in human-robot interaction for lunar construction with NASA: Developing robot-operated systems to build habitats on the Moon:* **P Suermann**

2002419 *Ground & Strong Motion Estimation for the Largest Recorded Marsquake and Moonquake Events:* **D M E Haque**, S Karunatillake, J M Lorenzo, D Samuel, C E Gary Bicas

248283
Machine learning and the art of data discovery

Conveners: **Douglas Newman**, Raytheon Company Riverdale; **Brian Freitag**, University of Alabama in Huntsville; **Muthukumaran Ramasubramanian**, University of Alabama in Huntsville

1867725 *Using Generative AI to Support Discovery in Geoscience Education Resource Collections:* **S Fox**, J R McDaris, M Mohamed

1928408 *Machine Learning for Planetary Data Discovery: Lava Flow Classification in Daedalia Planum, Mars:* **N Nieścior**

1944819 *PANGAEA-GPT: A Hierarchical Multi-Agent System for Autonomous Discovery in Geoscientific Data Archives:* **D Pantiukhin**, B Shapkin, I Kuznetsov, A A Jost, T Jung, N Koldunov

1974924 *Progress Report on AI-Astrobiology Initiative from NASA Ames Research Center:* **R Felton**, C Scharf

1980928 *Enhancing Earth Mission Control With Agentic Data Retrieval for Contextual Decision Support:* **L De Bonet**, R Connolly, PhD, M Rathnasabapathy, L Bensch, L Jones, D Newman

1987785 *Automated Systematic Literature Reviews using Large Language Models:* **J Rising**

1988142 *INDUS-SDE: A Language Model for Scientific Content Curation and Discovery:* **N Pantha**, S Awale, V Kuruvanthodi, M Ramasubramanian, C Davis, B Praveen, S KC, B Bhattacharjee, R Ramachandran

1998969 *Past, Present, and Future Use of Natural Language Processing:* **R Abbott**

2000243 *The Signal Through the Noise: Turning Raw Metrics into Stories:* **J Blake**

2000736 *Reducing Human-in-the-Loop Burden: Strategic AI Implementation for Scientific Data Curation at Scale in NASA's SDE:* **B Praveen**, N Pantha, C Davis, S KC, S Awale, E Foshee, A Goldstein, C Fletcher, K Bugbee, B Benson, M Ramasubramanian, R Ramachandran, P Krishnappa, O Roberts

2001335 *LLMs, Encoders, and Agentic Workflows for Curation and Discovery in NASA's Science Discovery Engine:* **C Davis**, B Praveen, E Foshee, K Bugbee, N Pantha, D Sharma, S Awale, S KC, K Dawadi, S Khan, B Benson, M Ramasubramanian, P Krishnappa, P R Kumbam, A Goldstein, C Fletcher, O Roberts

2003679 *Enabling Semantic Search for the NASA Planetary Data System:* **T Yu**, T Loubrieu, J Padams

251386
Methodologies and Applications of Damage Assessment Related to Natural Disasters and Armed Conflict

Conveners: **Chad Melton**, Oak Ridge National Laboratory; **Sarah Walters**, Oak Ridge National Laboratory; **Daniel Adams**, Oak Ridge National Laboratory; **Nathaniel Raymond**, Yale School of Public Health's Humanitarian Research Lab

1873971 *Estimating Flood Damage to California's Agricultural Lands Using Remote Sensing:* **S Kishore**, L Wu, B Zhang, A Escriva-Bou, E L Hestir, J Medellin-Azuara

1936796 *Evaluating the Impact of the 2023–2025 Gaza Conflict Using VIIRS Nighttime Light Data:* **J Yang**, W Song, Z Ye, H Ma, Z Xiang, J Yu, R Shin, J Sun, C Zhu

1943231 *Advancing Post-Earthquake Damage Detection: Ground Validation and Deep Learning Approach from the 2023 M_w6.8 Morocco Earthquake:* **R Vitale**, P Milillo, S Loos, PhD, G Giardina, V Novelli, F Freddi, G Castellano, G Vessio, P De Marinis, M Whithworth, K Adams, D S C Chian, R Gentile, M Redaelli, K Amrouch, A Albuerne, M A Belfoul, M Stokes, S Esper, Z Khalil, M Feldbrugge, J Black, A Maaroufi, H Shaimed, D Loudyi, H Skikra, A Aghraz, R A Babahmad, F Foroughnia, V Putrino, E Spacone, N Fernando, S J Boulton, J Jones

1954153 *Monitoring the 2023 Türkiye–Syria earthquakes' impacts on agricultural land use:* **H Yin**, J Wong, S S Yamac, A Genç, E Adrah, J Tyner, A Ward, L Genc

1956466 *Automatic Post Earthquake Building Survey Using Semantic Segmentation and Geospatial Interpolation:* **B Fishbain**, L Yehezkel, O Lavan

2002774 *The Impact of the Systematic Razing of Villages in North Darfur on Agricultural Activity: A Remote Sensing Study Highlighting Gaps in Food Security Assessments:* **D Andersen**, R Chausse, D Poole, N Raymond

251103
Open Earth System Science Data and Artificial Intelligence (AI) / Machine Learning (ML) Advance Scientific Discovery *(joint with A, B, H, OS)*

Conveners: **Forrest Hoffman**, Computational Earth Sciences Group and Climate Change Science Institute; **Maxwell Grover**, Argonne National Laboratory; **Charuleka Varadharajan**, Organization Not Listed; **Justin Hnilo**, US Department of Energy; **Maxwell Grover**, Argonne National Laboratory

1848031 *A novel workflow and reporting format for processing environmental sensor outputs into AI/ML-ready data and metadata:* **S C Pennington**, B P Bond-Lamberty

1874239 *Achieving AI-Readiness Through Modular Workflows for Data Generation, Management, and Publishing:* **V A Garayburu-Caruso**, A E Goldman, B K Forbes, C R Vernon, X Chen, Y Chen, P Regier, J Bao, S Niroula, J Zheng, J Stegen

1884916 *A Large-Scale Multi-modal Foundation Model for Fusing Complex Earth Observation Data:* **T Vandal**

1929138 *Revisiting Controls on Hyporheic Zone Respiration: Integrating Mechanistic and Deep-Learning Models with Continental-Scale Observations:* **J Zheng**, V A Garayburu-Caruso, T D Scheibe, J Stegen

1931773 *Revealing the Butterfly Effect in Deep Learning Weather Prediction Model via Kinetic Energy Spectra Change:* **H Kim**, J Yoon

1950419 *A large-scale dataset for training deep learning segmentation and tracking of extreme weather:* **S Kim**, A Graubner, L Kapp-Schwoerer, K Kashinath, K Schindler

1954131 *Navigating ESGF with AI: Domain-Specific LLM for Earth System Data:* **D Saedi Nia**, E Massoud, B Sharma, F Hoffman, J Kumar, N Collier, S Arya

1960293 *Data-driven Modelling of Global Belowground Productivity:* **B Wang**, M Xu, E Massoud, Z Shi, X Zhang, F M Hoffman

2002949 *Estimating Large Population Displacement in Near-real Time: A Study in North Darfur, Sudan:* **R Lau**, R Chausse, D Anderson, D Poole, N Raymond

2003015 *Monitoring Conflict-related Arson Attacks in Near-real Time: A Study in Zamzam IDP Camp, North Darfur:* **D Anderson**, R Chausse, R Lau, N Raymond

1963489 *Revolutionizing Atmospheric Data Discovery and Access Through AI-Driven Innovations at the ARM Data Center:* **C Shah**, W Darnell, A Aguilar, H Collier, E Enright, D Rapp, V Garbulet, F Parry, Z Medley, F Almeida, M Giansiracusa, G Prakash

1966294 *Accelerating AI development in environmental science through a community-driven learning journey approach:* **Y Rao**, R J Redmon, C Slocum

1968543 *Bridging Earth System Modeling and Societal Impact: A Scalable SPEAR Data Delivery System for Informed Decision-Making:* **A Radhakrishnan**, S A Bhuiyan, A Radick, J Zappala, W Anderson, D Barrie, K L Findell, M Harrison, A McCarty, H Murakami, H Teng, R S Vose, C Wilson

1969502 *Towards Globally Harmonized Environmental Data: Data Harmonization Methodology and Lessons from GERI:* **K Deshpande**, B L Ruddell, C Hagen, H W Loescher, M SanClements, C M Laney, T G Bornman, G T Feig, L Chiloane, E Girola, G Siddeswara, B Morris, P Mabee, M Mirtl, P L Sullivan, E Salmon, M D Smith, W L Kutsch, S Zacharias, J K Back, T L Swetnam, N Merchant, X Yu

1973259 *AMOVALIH: Hybrid Intelligence for Marine Biodiversity Assessment Integration with MINKA:* **I Rodero**, A Fornós, J Piera

1985743 *Leveraging AI Standards on Synthesized Data Gathered from Across the pan-Arctic:* **M Thornton**, T Velliquette, N Griffiths, J Kumar

1987962 *Guiding Responsible Use of Geoscience Data in AI/ML Contexts: Reducing Risks from Lack of Data Fitness-for-Purpose:* **M A A Morrison**

1988509 *Democratizing Access to NSF NCAR's Research Data:* **D Schuster**, H Hampapura, R Conroy, B Bockelman

1989584 *The Next Generation Earth System Grid Federation (ESGF) Distributed Data Infrastructure:* **F M Hoffman**, P Kershaw, S Ames, R Ananthakrishnan, L Carriere, S Kindermann, C Page, A Radhakrishnan, A Robinson

1990043 *GELOS: A Benchmark Dataset for Geospatial Exploration of Latent Observation Space:* **D Godwin**, R Balogun, S Khallaghi, Y T Yao, S Roy, R Ramachandran, H Alemohammad, PhD

1994061 *Cloud to Community: Enabling Earth Science Through Open, FAIR Data:* **K Baynes**

1994419 *AI for Research Infrastructures: Enhancing NEON Field Operations and Efficiency with Novel Safety Forward Tools:* **M SanClements**, T Karns, C Hagen, C Keating

248397
Open Science and Big Data for the Planets and the Heliosphere: Projects, Accomplishments, and Opportunities *(joint with P, SH, SM)*

Conveners: **Baptiste Cecconi**, Observatoire de Paris, PSL, CNRS; **Anne Raugh**, University of Maryland College Park; **Arnaud Masson**, European Space Agency, ESAC

1917048 *Improving Capabilities in Support of Open Science at the Heliophysics Digital Resource Library:* **R Ringuette**, B A Thomas, J Ireland, R M Candey, L Jian, Z Boquet, A Koval, B Cecconi, T Helvey-Kasulke, C Byrd

1923414 *Announcing HelioData: NASA's new, unified site for heliophysics data discovery:* **B A Thomas**, D da Silva, T Helvey-Kasulke, O Jaiyeola, R M McGranaghan, R Brunning, B E Stephenson, R Ringuette, C A Young, J Ireland, R Candey, L Jian, Z Boquet

1938914 *Expansion of the Heliophysics Events Knowledgebase to the Heliosphere:* **R Timmons**, J Cheng, M Greenhaw, N E Hurlburt

1998693 *Using AI/ML to Accelerate NASA Scientific Research and Discovery with the Science Explorer:* **M Polimera**, A Kelbert, A Accomazzi, K Lockhart, F Grezes, S Jarmak, J C Paquin, T Jacovich

2004434 *Bridging Big Earth Data and AI-integrated Workflows with the National Data Platform: A Case for FAIR, Composable, and Scalable Services:* **I Altintas**, M Parashar, M Floca, J Tate, S Alharir, C Meertens, K O'Laughlin, A Gupta

1953931 *Evolution of SPASE Data Model for Improving Open Science:* **A Koval**, R Ringuette, B A Thomas, R Candey, Z Boquet, T Helvey-Kasulke, L F Bargatze, S A Boardsen, C Byrd, K Cariglia, B Cecconi, S F Fung, A Halford, J Ireland, M Kane, R Keil, A Masson, R M McGranaghan, M Nose, W Rideout, M Romano, J Oliveira, J D Vandegriff, R S Weigel, C Shimizu, J M Weygand, PhD, D Winston, S Yashiro, Y Tanaka

1954052 *Open, Interoperable Access to Planetary and Heliospheric Big Data via HAPI:* **J D Vandegriff**, R S Weigel, J Faden, A K Antunes, R M Candey, E Doornbos

1962236 *Badges of FAIRness: Making Metadata Personal:* **K Lopez**, E E Palmer, M Drum

1973193 *Advancing Heliophysics Open Science: User Feedback and Improvements from HDRL's 2025 Outreach:* **C A Young**, R Ringuette, B A Thomas, J Ireland, R Candey, L Jian, J W Bradford, R Brunning, S Rourke

1984706 *Refining the Age and Distance of Open Cluster NGC 2194 Using Open Data and AstroImageJ Photometry:* **A Krishnamurthy**

1996068 *Recent Improvements to the FAIRness of the PDS/PPI Website:* **J N Mafi**, I S Moon

1998536 *A Curated 1.5 Petabyte Heliophysics Cloud Data Resource:* **P Shumate**, O Shalaby, S Rourke, L Knowles, J W Bradford, B A Thomas, A K Antunes, J D Vandegriff

252723
Opportunities, Challenges and Lessons Learned on Safe and Effective Use of Large Language Models and Agentic Workflows for Sciences

Conveners: **Muthukumaran Ramasubramanian**, University of Alabama in Huntsville; **Armin Mehrabian**, Science Systems and Applications, Inc.; **Bishwaranjan Bhattacharjee**, IBM Research USA; **Geeth De Mel**, IBM Research UK

1880540 *Use of a Generative AI Chatbot for Developing Documentation of GFDL's FRE Workflow:* **L Chilutti**, I Laflotte, T E Robinson Jr, C Blanton, M Lee, C Brown, D Singh, A Kiihne, C Whitlock, J Lentz

1881926 *A Hybrid LLM-Bayesian Network Agent Framework for Flood Resilience Analysis:* **E Amiri**, S Akbarpour, M S Jahangir, H Shirkhani, S Steinschneider, J F Adamowski

1911309 *Crowdsourced Flood Imagery: Automating the Curation of Robust Geospatial Flood Validation Datasets:* **Z Herbert**, G Uhlemann

1924954 *Accelerated Knowledge Discovery: A Vision for NASA Science:* **R Ramachandran**, K Bugbee, J Bernabe-Moreno

1945382 *Natural Language Geocoding: Bridging Human Language and Geospatial AI Through LLM-Enabled Spatial Intelligence:* **J Gilman**

1948192 *Making Earth Science data accessible: An AI Co-Pilot for NASA's North American Land Data Assimilation System:* **M Hashemi**, S V Kumar, J Hartwig, J C Lopez, C Hain, J D Bolten

1949929 *Agentic Workflows for Gap-Aware Literature Reviews:* **M Moses**, N Pantha, M Elkaref, J Barry, V Kuruvanthodi, M Ramasubramanian, C Watson, G De Mel

1949937 *An Agentic Workflow for Querying NOAA Climate Archives: A Framework for Ensuring Scientific Integrity and Reproducibility with LLMs:* **A Hassan**, J Gilman

1955491 *INNOVATIVE LLM-DRIVEN AI AGENTS FOR CRISIS INTELLIGENCE: TOWARDS ALIGNING HUMAN SENSOR NETWORKS AND EO IN REAL TIME:* **S Fnu**, M Halem, O Aulov

1956301 *Construction of Plant Disease Knowledge Graphs Using Large Language Models:* **A Mitra**, B Duong, D Fleisher, V Reddy, C Ray

1963562 *Building Trustworthy AI Collaborators: Factuality and Source Attribution in Agentic Workflows:* **J Barry**, A Pascale, M Moses, M Elkaref, T Tchrakian, L Thomas, M Ramasubramanian, G De Mel

1967388 *Can LLM Fine-Tuning Solve the Puzzle of Mixed Benthic Habitats? A Case Study from the Red Sea:* **W Li**, J Udo, S Maharjan, R Thomas, H M El-Askary

1988068 *From Validation to Societal Value: A User-Centric Framework for Evaluating Regional Climate Models:* **H Lee**, A Panta, V Pascucci

1989769 *Towards Building a Scientific AI Ecosystem for FAIR and Trustworthy Earth and Space Science Research:* **M Ramasubramanian**, N Pantha, G De Mel, A Kulkarni, M Moses, A Pascale, I Gurung, J Barry, T Tchrakian, L Thomas, P R Kumbam, C Davis, R Ramachandran

2000339 *A Comparative Study of Vision-Language Models for Understanding Meteorological Visualizations:* **S Ramamurthy**, M Arulraj

251518
Rise of Large Language Models in the Geosciences *(joint with EP, GC, V)*

Conveners: **Grant Boquet**, Organization Not Listed; **James Ogg**, Chengdu University of Technology; **Jieping Ye**, Zhejiang Laboratory

1903626 *GIS-Task-Graph: A Case-Based Knowledge Graph to Enhance LLM-Based Agents in Geospatial Analysis:* **X Zhao**, J Feng, C Wang, L Hu, S Wu, Z Du

1915858 *Revisiting Human-Made Decisions for the Texas Floods with Agentic LLM:* **A Dolant**, P Kumar

1916954 *AI Tools Enabled an Online Database of the ca. 50,000 Fossil Genera of the Treatise of Invertebrate Paleontology:* **J G Ogg**, A Sivathanu, K Chang, W Du, A Ault, J Ye, Z Xiang, J Wei, H Chen, Y Ye

1933037 *A Large Language Model-Based Python Pipeline for Automated Extraction of Hydroelectric Facility Operational Information:* **F Ashraf**, H J Yoon, C Hansen, T A Ruggles, D Singh, E S Parish, S C Kao

1943125 *Transforming Climate Services with LLMs and Multi-Source Data Integration:* **I Kuznetsov**, A A Jost, D Pantiukhin, B Shapkin, T Jung, N Koldunov

1954053 *RoGO: Fast and Interpretable Graph-Based Reconstruction of Composite Fossil Sequences:* **S Zhang**, J Len, G Boquet, H Chen, J Ye, S Z Shen

1969959 *Recent progress of knowledge-infused and AI-driven extension to the Mindat open data service:* **X Ma**, J Zhang, W Chen, J Ralph

1974533 *Natural Language Querying of NASA ADS Database Using AI Agents:* **Z Huang**, A Hu

1981021 *Leveraging LLMs in Science: Some Thoughts and a Prototype LLM-Based Workflow System:* **J Liu**, S Zhang

1988129 *A Comprehensive Survey of Large-Scale Language and Foundation Models Advancing Earth and Environmental Sciences:* **Y Xiao**, J Ye, G Boquet, J G Ogg, M Stephenson, Y Ting, T Jiang, M J Bah, Y Li, H Chen, Y Zhou

1990706 *A Geoscience Knowledge Graph Construction Method Based on Large Language Models:* **T Yu**, Z Feng, T Jiang, W Wu, M J Bah, H Chen, J Ye, Y Li, X Tang, H Hu

248993
Showcasing Your Earth Data Products, Tools, and Services *(joint with A, B, GC, H)*

Conveners: **Zhong Liu**, George Mason University Fairfax; **Tian Yao**, NASA Goddard Space Flight Center (SSAI); **Vasco Mantas**, University of Coimbra, Portugal; **Andrea Portier**, Science Systems and Applications, Inc.

1869705 *Expanding a Global Catalog for Scientific Sample Discovery: Improving Search and Discovery in SESAR, the System for Earth and Extraterrestrial Sample Registration:* **N H Raia**, A Thomer, S Cao, S Choe, S M Richard, K Lehnert

1878717 *Global Meteorological Datasets at NASA GES DISC:* **Z Liu**, S Shen, M Hegde

1880479 *FRIDGE: Empowering Polar Research with Dynamic Access to High-Resolution Satellite Imagery and Digital Elevation Models:* **C Kelleher**, R Johnson, D Im, C C Porter

1882698 *Inexpensive, Long-Duration LIDAR Targets for Wind, Temperature, and Pressure Profiling in Near-Space (30–100 km):* **A Feldhaus**, B Schafer, J Martinez Hardigree

1931174 *Developing Flexible LCA Guidance for Emerging Critical Mineral Extraction Technologies:* **S Sam**, P Priyadarshini, R Mahmud, T W Davis, M Krynock, A Curtright

1935906 *Integrating Remote Sensing Fire Severity Assessment with Stochastic Vegetation Modeling - a Post-Fire Management Decision Support Toolbox:* **N Gondek**, L S Layritz, M Zomer, A Pottinger, A Anderson-You, N Graver, M Weltman-Fahs

250963
Standards, Stewardship, and Solidarity: Building Flourishing Science Commons *(joint with A, GC, SY, SA)*

Conveners: **Ryan McGranaghan**, NASA Jet Propulsion Laboratory; **Chelle Gentemann**, NASA Headquarters; **Luis Murillo**, University of Notre Dame

1900851 *Community-Driven Efforts to Advance Vertebrate Paleoecological Data Curation, Standards, and Governance in the Neotoma Paleoecology Database:* **J Blois**, J Arroyo-Cabrales, M Balk, N Cullen, E Davis, D Espinosa-Martínez, M Etnier, S J Goring, R Graham, N Hoffman, M Pardi, S Pilaar Birch, V Syverson, C Widga, J W Williams

1927396 *The Heliophysics Software Search Interface:* **I Smith**, J I Barnum, MSc, R Ringuette, J P Renaud, C Byrd, S Polson

1944535 *Who and What is Required for the Governance, Maintenance and Stewardship of International Scientific Data Standards to Support a Global Open Science Commons:* **L A Wyborn**, K Lehnert, S Hodson, L McEwen, I Bruno, R Farrington

1967861 *Building Collective Intelligence Networks for Flourishing Scientific Communities:* **R Tamari**, S Oriel, W Finck

1964374 *From Archives to Analysis: Making NOAA Climate Data Records Cloud-Optimized and Accessible:* **P Hari Ambrish**, Y Rao, J L Matthews

1984872 *ASF's Cloud-native Data Service Portfolio To Accelerate Your Geospatial Science:* **F J Meyer**, J H Kennedy, S Shriver, K Kristenson, C Fleming, G Short, A Lewandowski, F F Williams

1989559 *Integrated Data, Services, and Tools to Support Urban Social-Environmental Collaborative Research:* **Y Wei**, C E Forest, T Thurber, C D Burleyson, D Waugh, K J Davis, B F Zaitchik

1995038 *GeoCORK: A Desktop Application to Manage U-Pb Geochronology Data:* **K Metcalf**, J Burges

2003699 *Earthdata Forum Bridging the Path from Earth Observation to Earth Action:* **E Joyner**, H Mahmoud

1970977 *Transforming Science on Schema to RDF: Building Community Knowledge Graphs with Dagster and the GleanerIO Stack:* **D W Valentine Jr**, D Fils, L Marini, Y L Yang

1972299 *Updates from the 2025 CF Workshop:* **E Davis**, D Hassell, D Lee, L Bärring, S Bartholomew, E Fisher, L Marsden, A Pamment, A Cofiño, K O'Brien, G PimentaCastelao

1975278 *Finding Collectively-Derived Solutions to Governing Science Mission Directorate (SMD) Data, Information and Software:* **D K Smith**, K Bugbee

1976574 *GeoFAIR: All are Welcome!:* **D Kinkade**, S Stall, N H Raia

1979105 *Project Pythia's Cookbook hackathon experience: a participatory approach to building a geoscience knowledge commons:* **B E J Rose**, D Camron, J Clyne, O Eroglu, R Ford, J Gum, J Kent, H Hampapura, R May, J Munroe, K Tyle

1982438 *Navigating Complexity: Collaboration and Synthesis in SPRUCE's Scientific Commons:* **T A Ruggles**, T Velliquette, J Birkebak, M A Mayes, D M Ricciuto

1984106 *Toward an Equitable Crisis Commons: Earth Observation and the Ethics of (In)Visibility:* **J Van Den Hoek**

2003147 *Climate TIES: A Prototype Web-based Transdisciplinary Portal for Organizing and Integrating Climate Change Data, Information, and Stakeholders:* **K Maier**

249194
Transdisciplinary uses of artificial intelligence and classical algorithms for data analysis
(cosponsored by AAS: American Astronomical Society)

Conveners: **Suniti Karunatillake**, Louisiana State University; **Maheshi Dassanayake**, Louisiana State University; **Carlos Gary-Bicas**, Stony Brook University; **Sudath Kalingamudali**, University of Kelaniya; **Sanjeewa Malaviarachchi**, University of Peradeniya; **Ranjan Sarkar**, Max Planck Institute for Solar System Research; **Thosini Kumarika**, University of Kelaniya; **Gayantha Kodikara**, University of Wisconsin Milwaukee; **Ari Essunfeld**, Los Alamos National Laboratory

1876430 *Reducing Investigator Variability with Bayesian Land Cover Classification:* **N Tsutsumida**, A Kato

252498
Transforming NASA Science Through Cloud Computing: Infrastructure, Platforms, and Success Stories (cosponsored by AMS: American Meteorological Society,EGU: European Geosciences Union) *(joint with A, EP, OS, P)*

Conveners: **Daniel Duffy**, NASA Center for Climate Simulation; **DeVon Griffin**, NASA Headquarters; **Elena Steponaitis**, Tulane University; **Mark McInerney**, NASA Goddard Space Flight Cent

1946792 *ChatGSFC: Deploying Secure Enterprise AI to Transform Scientific and Engineering Workflows at NASA:* **J Gilman**, O Hatamleh, M Dosberg, M Biskach, R McClelland

1958934 *Scaling SAR Data Processing for NISAR: OpenScienceLab's Role in NASA's Science Cloud:* **S Shriver**, F J Meyer, A Lewandowski, E Lundell, D Palmieri, B Buechler, C Showalter, S Gallagher

260102
Informatics Student and Early Career GeoBurst Session

Conveners: **Ranjay Shrestha**, NASA Goddard Space Flight Center; **Debjani Singh**, Oak Ridge National Laboratory; **Rebecca Farrington**, AuScope

1911919 *Symbolic and Sub-symbolic AI for understanding CRISM images:* **S Dhoundiyal**, A PV, G Thangjam, A Porwal

1930588 *Specxplain: A Transformer Architecture for Interpretable Mineral Identification from Hyperspectral Data:* **R Sarkar**

1958517 *Addressing AI Limitations in Computer Vision Through Ensemble Deep Learning: A Pipeline Multi-Anomaly Detection Case Study:* **S A Moghaddas**

1971127 *Detecting Nodules in SuperCam and ChemCam Imagery Using Semantic Segmentation:* **A Essunfeld**, P Essunger, J Comellas, P J Gasda, A Lomashvili, H Kalucha, C C Bedford, C Egerland, M Loche, S Sharma, A Cousin, R C Wiens, N Lanza

1989548 *Deep learning–based pulse wave analysis for non-invasive diabetes detection:* **H Gunathilaka**, R Rajapaksha, T Kumarika, D Perera, C Jayathilaka, J Liyanage, S Kalingamudali

1990047 *Hybrid Deterministic AI Framework for Cinnamon Leaf Diseases and Pests Classification:* **V Senanayake**, T Kumarika, S Kalingamudali

1962468 *Advancing Agile Earth Science Mission Design with the Novel Observing Strategies Testbed:* **E Gonzalez**, H Banafsheh, D Ramachandran, M Wrzesien, C Vuyovich, P Grogan

1989621 *Experiences evolving a compliant and scalable Earth Data Cloud platform:* **T D Goff**, N Clark, C Pitts

1990396 *High-performance Cloud Computing of Coupled Wildfire-Atmosphere-Chemistry Simulation on the NASA Science Managed Cloud Environment:* **C Da**, A Farguell, Z Yang, S Fnu, N Golpayegani, C Cruz, A Kochanski, J Mandel, J E Dorband, M Halem

1998322 *HelioCloud: A Cloud-Native, Cost-Optimized Platform for Collaborative Big Science:* **P Shumate**, L Knowles, O Shalaby, S Rourke, A K Antunes, B A Thomas, J W Bradford, J D Vandegriff

2004378 *The National Data Platform Experience in Supporting NASA-Relevant Research: A Cloud-Native Composable Service Ecosystem for Scalable, FAIR, and AI-Enabled Earth Science:* **I Altintas**, M Parashar, M Floca, J Tate, S Alharir, C Meertens, A Gupta, K O'Laughlin

1902401 *Evolving 3D Antenna Models Via Genetic Algorithms:* **E Imata**, J Rolla, B Reynolds, D Wells, J Weiler, A Connolly, R Debolt

1967329 *Improving Fourier Local Correlation Tracking through a Multi-pass Implementation:* **I Smith**, K Reardon

1973951 *Closing a Gap in Emissions Inventories: Using Machine Learning to Extrapolate Geographically-Limited Combination Truck Idling Data to a Wider Domain:* **D Dobrowolski**, V Lang, M Alam, D E Horton

247422
Atmosphere, Ocean, and Land Processes in the Maritime Continent and Indo-Pacific *(joint with NH, OS)*

Conveners: **Mingyue Tang**, University of Hawaii at Manoa; **Sandro Lubis**, Pacific Northwest National Laboratory; **Ning Zhao**, JAMESTEC; **Mingting Li**, Sun Yat-Sen University; **Mingyue Tang**, University of Hawaii at Manoa

1938541 *Aerosol effects on Maritime Continent precipitation: Oceanic intensification:* **K H Seo**

1960151 *Closing the Loop: How Does the Indonesian Throughflow Modulate the eastward propagation of the MJO?:* **L Ma**, M Li, F Liu, J Li

1876855 *Cold pools, Breezes, and Monsoons: Propagating Convection over New Guinea:* **M Tang**, J Dudhia, C Liu, G Torri

1956887 *Contribution of Simulated Mesoscale Convective Systems (MCS) Rainfall Components to Rainfall Diurnal Cycle Errors in the GEFSv12 Reforecast:* **W Y H Tsai**, N Sakaeda, J H Ruppert Jr

252444
Land Surface Hazards: Linking Processes Across Landscapes *(joint with NH)*

Conveners: **Brian Yanites**, Indiana University Bloomington; **Seulgi Moon**, Massachusetts Institute of Technology; **Scott McCoy**, University of Nevada, Reno; **A. Joshua West**, University of Southern California; **Chan-Mao Chen**, National Chung Cheng University

1847054 *Climate-Tectonic Feedbacks in the East African Rift:A New Frontier for Earth System Science:* **D D Teklemariam**, K A Atalay, D E S K Dubbe, H L B Kumbi, H G D Lakew

1862921 *Widespread landsliding, catastrophic debris flows, and forest loss across southern Appalachia triggered by Hurricane Helene: past, present, and ongoing hazards :* **B B Mirus**, F K Rengers, L Schaefer, D Korte, P Moore, R Wooten, O Hoch, C Miles, A Witt, M Crawford, J Bauer, S Fuemmeler, P Prince, A Nandi, C Scheip, B G Johnson, A J Merschat, L Toney, P Burgi, K Allstadt

1984733 *Heavy rainfalls over the western Java region during the cross-equatorial northerly surges in mid-February 2021:* **N Zhao**, P Wu, Q Moteki, A Manda, S Yokoi, S Mori

1856117 *Impact of Improved Ocean Initial Condition on the Predictability of Coupled Korean Integrated Model (KIM):* **S Kim**

1896967 *Interannual Land Surface Variability Modulates MJO Dynamics over the Maritime Continent:* **S W Lubis**, S M Hagos, Z Chen, C C Chang, Y Qin, K Balaguru, L R Leung

1860768 *Role of the Indo-Pacific oceanic channel and Western Boundary Currents in ENSO dynamics and predictability:* **D Yuan**, X Zhao, X Yin, B Li, K Wang

1979806 *Salinity-Driven Barrier Layer Dynamics in the Equatorial Pacific:* **Y J Lin**, A Subramanian, K B Karnauskas, C A DeMott, J Sprintall, R Sun

1911917 *The continued saga of nocturnal offshore rainfall propagation over the Maritime Continent:* **C Schumacher**, R T North

1935465 *The Diurnal Cycle of Islands in Idealized Models and their Modulation of Convective Organization:* **N Z Wong**

1876394 *The Impact of the Madden-Julian Oscillation (MJO) on Climate in Hawaii:* **A Nash**, G Torri

1875597 *The role of surface flux parameterization choice for MJO-ENSO interactions in CEMS2:* **C A DeMott**, M Branson, J Cui, E M Riley Dellaripa, E D Maloney

1855730 *Tracking Salinity's Fingerprint on ITF Variability and Change:* **J Sprintall**, X Lu, S Hu

1999863 *Analysis of Post-fire Floods: Connecting Hazards and Scales in Mediterranean Climates:* **S Muñoz**, C R Escauriaza, S Nash, M Dobre

1945578 *Can Vegetation Regrowth Tame Post-Wildfire Flash Flooding?:* **E D Orland**, R Loehman, J Blake, P Robichaud, S Lewis, B S Sheppard, B A Ebel, M B Follette-Cook, T V Loboda, D C Morton

1905337 *Constructing a decadal sediment budget following the 2008 Mw7.9 Wenchuan earthquake:* **G Li**, A J West, H Qiu, Z Jin, D E Hammond, A Densmore, R G Hilton, F Zhang, J Wang, S Dong, A Atwood, W W Fischer, M P Lamb

2003339 *Deep critical zone controls on shallow landslides:* **S Moon**, G Formetta, J T Higa, R Busti, D G Bellugi, D Milledge, W E Dietrich

1903262 *Detection and Characterization of Debris Flow Events in a Catchment Affected by Historical Volcanic Deposits:* **T Koi**, N Nagata

1887753 *Development of Kinetic Energy–Rainfall Intensity (KE-I) Relationships using Disdrometer Measurements in the Mountainous Region of Tanay, Rizal:* **G Capuli**, M P Ibañez, A Pura, M Villafuerte II

1981284 *DistributedHydrologyGenerator: A new component for ingesting externally modelled distributed hydrology outputs into Landlab:* **J W Keck**, E Istanbulluoglu, A M Pfeiffer, E Hutton

1853409 *Ecological Risk Assessment of Urban Expansion in the Northeastern Margin of the Qinghai-Tibet Plateau Based on Geological, Geomorphological, and Ecosystem Processes: A Case Study of the Jianzha Basin Urban Agglomeration:* **R Huang**

1937884 *Evolution of Sediment Granular Characteristics Carried by Hurricane Hilary-Induced Post-Wildfire Debris Flows:* **I Tomac**, L Landaverde Robles, H Chen

1914551 *Exploring Lithologic and Geomorphic Controls on River Hazard Cascades:* **F Shacheri**, A Long-Reid, B Pinke, A M Pfeiffer, J A Czuba

1861363 *FlowAlert: A new tool for postfire debris-flow situational awareness:* **F K Rengers**

1865385 *Forecasting Channel Response to Extreme Floods Using River Morphology: Lessons from Hurricane Helene:* **C C Masteller**, J Prata, A B Limaye, B G Johnson, C Scheip, C B Phillips

1893265 *Frictional constraints on conditions leading to initiation of the Sevier Gravity Slide, Southern Utah:* **M Idzakovich**, W A Griffith, D Mayback, R F Biek, M J Braunagel, D B Hacker, D H Malone, T A Rivera

1893680 *From Fault to Flood: Quantifying the Emergence and Mass Balance of a Cascading Hazard Following an Earthquake and Successive Storms in Taiwan:* **Y S Lin**, B J Yanites, Z Lee, R Y Chuang

1897524 *How long can eruptions disturb river systems?:* **S A Feehan**, J J Major, A R Mosbrucker, J Parrish

1989681 *Impact of Extreme Rainfall and Fire on Geomorphic Hazards of Western Transverse Ranges in Southern California:* **A Koutsoukos**, S Moon, A J West, I Akin, A Ghosh, C Li

2002829 *Increasing frequency and magnitude of Himalayan glacial outburst flows:* **S W McCoy**, J Jacquet, D McGrath, S Ghuffar

1905148 *Integrating Geospatial Technologies and Field Data to Evaluate Fuel Treatment Effectiveness in Alaska's Wildlands and Wildland-Urban Interface.:* **E Graham**, J Schmidt, H Chapman-Dutton, J Delamere

1896698 *Investigating the potential for volcanic island flank collapse and tsunami generation within the Pacific Ocean:* **D O'Hara**, S Hurwitz, M E Reid, C Mandeville, K R Barnhart, L Schaefer, E L Geist, E Rivera

1858370 *Landslide-Channel Feedbacks Amplify Channel Widening During Floods:* **G L Bennett**, D Panici, F K Rengers, J W Kean, S L Rathburn

1986066 *Large-scale monitoring of post-wildfire sediment dynamics in southern California using repeat airborne lidar:* **R A DiBiase**, B T Fong

1956762 *Leveraging River Channel Geometry to Enable Probabilistic Flood Inundation Forecasts Across Scales:* **C B Phillips**, J Castejon Villalobos, N Patterson, A Lee, J Bower, R M Diehl, C C Masteller, B A A Lane

1985983 *Mapping buried ice and quantifying degradation rates for the most dangerous moraine dams in Nepal using fused Sentinel-1 InSAR and feature tracking:* **G Brencher**, S T Henderson, D E Shean

1969547 *Modeling Catchment-Scale Sediment Dynamics and Flood-Related Hazards with SMART-SED:* **M Corti**, C Crippa, M Papini, L Longoni

1919151 *Natural Hazards in India's Mountain Regions: Analyzing Risks, Impacts, and Resilience Strategies:* **S Krishnan**

1941857 *Post-Disaster Landscape Recovery: Interactions Between Landslides, Vegetation Regrowth, and Soil Moisture in the Himalayas:* **A Sekar**, S Siva Subramanian

1897799 *Predicting failure events and long-term evolution in landscapes by modeling sediment creep dynamics under groundwater flow forcing:* **M Houssais**, M Orescanin, D Litwin

1945533 *Projected changes in precipitation-driven soil erosion across the contiguous United States:* **R Amorim**, G Villarini, A Michalek, A Prein

1944665 *Quantifying sediment fluxes for a small catchment from Cyclone Gabrielle using multitemporal lidar:* **J C Stout**, J Brasington, J M Rogers

1864288 *Rock and Roll: Smart Rocks for Observing Landslide Sediment Cascades from Within:* **G L Bennett**, K Roskilly, K Newby, A Senn, M Westoby

1882297 *Seasonal motion at the Barry Arm landslide, Prince William Sound, Alaska, USA, driven by headscarp-proximal glacier melt and subglacial topography of adjacent Cascade Glacier:* **H W Dow**, B D Collins, G J Wolken, C Miles, J Gassner

1884473 *Storm Structure Properties and Reflectivity Patterns in Post-Fire Debris Flow-Triggering Events Using Radar Composites:* **S Castillo Guerra**, C Jones, L V Carvalho

1852088 *The 2021 La Palma eruption: social dilemmas resulting from life close to an active volcano:* **V R Troll**, M Aulinas, J C Carracedo, H Geiger, F J Perez-Torrado, V Soler, F M Deegan, C Bloszies, F Weis, H Albert, G Gisbert, J M Day, A Rodriguez-Gonzalez, E Gazel, K Dayton

1906537 *Volume Estimation and Porosity Characteristics of Large Woody Debris Accumulation Using Indoor Experiments:* **F F Hsiao**, M C M Liang, S C Chen

1873598 *Watershed-Scale Rainfall–Subsurface Structure Interactions and their Influence on Shallow Landslide Triggering:* **M Kassem**, D Zekkos

247861
Global Applications of Volcano Geodesy *(joint with NH, V)*

Conveners: **D. Sarah Stamps**, Virginia Tech; **Emily Montgomery-Brown**, USGS California Volcano Observatory; **Christelle Wauthier**, The Pennsylvania State University; **Freysteinn Sigmundsson**, University of Iceland; **Federico Galetto**, Istituto Nazionale di Geofisica e Vulcanologia

1867071 *A Compilation of Volcanic Deformation and Geodetic Source Models Across the Aleutian Arc:* **Y Cheng**, R Grapenthin

1922862 *Analysis of Ground Deformation Preceding the December 2020 – May 2021 Summit Eruption at Kilauea Volcano, Hawai'i:* **W K Lo**, C Wauthier, Y C Kim

1922039 *Characterizing and Modeling Opposing Deformation at Westdahl Volcano and Fisher Caldera on Unimak Island, Alaska from 1992 to 2009:* **I Twomey**, R M Parameswaran, M Angarita, R Grapenthin

1867678 *Deformation processes at Masaya Volcano, Nicaragua from 2018 to 2024, analyzed using InSAR time-series and geodetic modeling:* **E Johnson**, Y C Kim, C Wauthier

1924825 *Deformation Timeseries from Spaceborne InSAR Observations for Global Volcano Monitoring: Developing, Testing, and Scaling the Processing Workflow:* **A Shkreli**, F F Williams, K S Pepin, K Kristenson, F J Meyer, H A Zebker

1862876 *dMODELS: an Open-Source MATLAB Software Package for Modeling Crustal Deformation:* **D S Stamps, PhD**, M Battaglia, M Béjar Pizarro, K Pesola

1926722 *Dynamic Models of Magma Storage Within a Damaging and Softening Crust and their Application to Sierra-Negra's Pre-Eruptive Inflation Pattern:* **D Walwer**, P Lundgren

252043
Illuminating Complex Earthquake Rupture Processes with Coseismic Geodesy *(joint with NH, S, T)*

Conveners: **Eric Lindsey**, Earth Observatory of Singapore; **Anne Socquet**, University Joseph Fourier Grenoble; **Yu Wang**, National Taiwan University; **Nadine Reitman**, U.S. Geological Survey; **Dara Goldberg**, Scripps Institution of Oceanography

1995658 *Evolution of the 2011-12 Puyehue-Cordón Caulle shallow silicic intrusion – constrained from gravity and deformation.:* **D A Lobos Lillo, PhD**, F Delgado, P Ruprecht, L Cordova, C B Kratt, S Sayyadi, F Aron, C A Miller, P León, L Godoy, M E Pritchard

1917443 *Geodetic Constraints on the Distribution and Mechanisms of Active Subsidence on Volcanic Islands in Mono Lake, California:* **Z D Smith**, M Manga, M J Hornbach, E L Sonnenthal, S Peek, S Hurwitz, J DeMarines, N Homyk, R Bürgmann, D Lindsay

1952343 *Investigating Flank Instability Using InSAR Time Series at Pacaya Volcano in Guatemala:* **L Miller**, C Wauthier, Y C Kim

1952016 *Mitigating Atmospheric Noise in InSAR Time-Series with a Convolutional Neural Network:* **R Bussard**, C Wauthier

1894685 *Post-Collapse Flank Instability at Anak Krakatau Revealed by InSAR Time-Series:* **Y C Kim**, C Wauthier, T R Walter, S Husrin, H Darmawan, D Müller

1926201 *Reversal in Deformation Signal at Aniakchak Volcano in Alaska following the 2021 Mw 8.2 Chignik earthquake:* **A Brant**, R M Parameswaran, M Angarita, R Grapenthin

1926166 *Short-term and decadal effects of topography and glacial loads on Westdahl volcano, Alaska:* **R M Parameswaran**, R Grapenthin

1925479 *Tectonic and morphological responses to magma source pressurization during the 2023 Shishaldin eruption:* **M Angarita**, R Grapenthin, R M Parameswaran

1950182 *Tracking ground deformation using GNSS and SAR data in the Sengan volcanic system (Japan) since 2015:* **Y Himematsu**, H Munekane

1992596 *Volcano-Tectonics in Action: Geodetic Insights from the Ongoing Reykjanes Fires, Iceland:* **H Geirsson**, M Parks, F Sigmundsson, V Drouin, B Ofeigsson, V Hjorleifsdottir, P Einarsson, C Lanzi, S Hreinsdottir, S H M Greiner, N Wire, H M Friðriksdóttir, E Bali, S A Halldorsson

1906068 *Constraining On- and Off-Fault Nonlinear Dynamic Rupture Parameters via the First Hierarchical Bayesian Inversion of GNSS and Satellite Data for the 2019 M_w 7.1 Ridgecrest Earthquake:* **A A Gabriel**, Z Niu, M Kruse, L Seelinger, N Schliwa, H Igel

1895125 *Coseismic and Early Postseismic Deformation due to the 2025 Mw 7.1 Tingri (South Tibet) Earthquake: Insights from Space Geodetic Observations and Inverse Models:* **X Zou**, Y A Fialko

2001219 *Displacement Gradients and Distributed Deformation from PlanetScope Imagery of the 6 February 2023 Mw 7.8 Pazarcık–Kahramanmaraş Earthquake:* **T Casteel**, C Dai

1940572 *Geodetic and seismic evidence for complex fault interactions and slow slip in the Palghar intraplate swarm, western India:* **R Bhagat**, K M Sreejith, P Bhattacharya, H Bhat, C Satriano, V K Gahalaut

1883837 *How Can Fault Slip Inversions Be Reliable? Insights from Bayesian Analysis of the 2019 Ridgecrest Earthquakes and Afterslip:* **X Zhao**, J Jiang

1918521 *Identification of Previously Unmapped Faults using Phase Gradient Interferometry Nearby Major Earthquakes.:* **R Garcia**, D T Sandwell, Y Bock

1907904 *Linking coseismic stress change and afterslip: A mechanics-based study of the 2016 Central Tottori earthquake, Japan:* **A Meneses-Gutierrez**, T Saito

1907506 *Localized Crustal Deformation Along the Hida Mountain Range Following the 2024 Noto Peninsula Earthquake Detected by Dense Geodetic Observations:* **S Nagaoka**, Y Takada, T Nishimura, T Sagiya, Y Ohta

1972324 *Mature fault mechanics revealed by the highly efficient 2025 Mandalay earthquake:* **E O Lindsey**, Y Wang, Y T Kuo, M Thant, T Z Htet Tin

1890157 *Near Instantaneously Triggered Mw 5.9 Aftershock During the 2025 Mw 7.1 Dingri Earthquake Revealed by Radar Interferometry:* **X Wang**, J Zhu, D Li, X Xu, Z Li, D T Sandwell, D Hao, C LIU, R Fang

1932736 *Rupture Geometry and Slip Distribution of the 2025 Mw 7.8 Myanmar Earthquake Constrained by Sentinel-1A/2 and ALOS-2 Satellite Data:* **Y A Fialko**, T Ulrich, X Zou, N Schliwa, M Marchandon, F Tan, A A Gabriel, W Fan, P M Shearer

246880
Plate Motion, Continental Deformation, and Interseismic Strain Accumulation *(joint with H, NH, S, T)*

Conveners: **Donald Argus**, Jet Propulsion Laboratory, California Institute of Technology; **Jeffrey Freymueller**, University of Alaska Fairbanks; **D. Sarah Stamps**, Virginia Tech; **Rui Fernandes**, Instituto Dom Luiz (IDL) - Universidade da Beira Interior

1956929 *Characterizing GPS Noise for Improved Velocity and Strain Estimates in the New Madrid Seismic Zone:* **H Heydarizadeh Shali**, R Smalley Jr, D Gomez, E C Kendrick

1946737 *Decadal Deformation reveal South-Westward Escape of the Rif Block Along the Nekor Fault, Northern Morocco.:* **H Ouammou**, A Tahayt, H Wang, A Aoudia

1890029 *Seismic Source Investigation of the 2025 Southern Tibetan Plateau and Central Myanmar Earthquakes Using SAR-based Observations and Analytical Modeling:* **S Puliero**, V Ruocco, S Atzori, M Polcari, C Tolomei, A Antonioli, M Albano, M Moro, S Stramondo, M Saroli, P Striano, F Monterroso, M Bonano, F Casu, C De Luca, R Lanari

1982219 *Simulating GNSS-derived TEC to uncover the rupture complexity of the 2024 Mw7.5 Noto earthquake:* **Y Kaneko**, P Inchin, M D Zettergren, J B Snively, R Enomoto

1879925 *Strengths and limitations of high-resolution satellite optical geodesy for illuminating earthquake deformation:* **C Hanagan**, S DeLong, N G Reitman, A E Hatem, J Thompson Jobe, J Vermeer

1893160 *Surface rupture and slip distribution of the 2025 M7.7 Mandalay earthquake: Implications for length scaling of supershear earthquakes:* **N G Reitman**, Y Wang, Y T Kuo, C Hanagan, A Hatem, C B DuRoss, C C Chen, D E Goldberg, H Z Yin, R W Briggs, J Thompson Jobe, S R Nicovich, PhD, E M Lynch, PhD, R G Schmitt, J Powell, W D Barnhart

1875473 *The 2025 M_w7.7 Mandalay, Myanmar, earthquake reveals complex earthquake cycle on the Sagaing fault:* **S L Antoine**, R Shrestha, C Milliner, K IM, C Rollins, K Wang, K Chen, J P Avouac

1917323 *Three-Dimensional Coseismic Deformation and Fault Kinematics of the 2025 M7.7 Myanmar Earthquake: Implications for Crustal Flow around the Eastern Himalayan Syntaxis:* **L Shen**, M S Steckler

1958681 *Unveiling Complex Rupture Dynamics of the 2025 Myanmar Earthquake through Integrated Field and Satellite Observations:* **F Canaslan Comut**, Ş Gürboğa, S Lyu, M Motagh, K S Thu, M Karadağlar

1882606 *Disentangling on-fault and off-fault contributions to geodetic strain rates:* **N Castro Perdomo**, K M Johnson

1917927 *Estimating Along-Fault Slip Rate Variations from GPS Data Using Geometrical Interpolation and Physics-Informed Neural Networks:* **P Boymond**, C Muller

1906273 *Evidence of strong plate coupling in the Uttarakhand Himalayas: Constrained from GNSS and ALOS-2 InSAR observations:* **M Yadav**, D Panda, E O Lindsey, S R Gangumalla

1931663 *Fine-Scale Interseismic Strain Rate Fields in Japan from an Ultra-Dense GNSS Network:* **M Ohtate**, Y Ohta, M Ohzono, H Takahashi

1983042 *GEMMA Project: Geodynamic Insights from GNSS and Modelling in Macaronesia:* **R M S Fernandes**, J Duarte, R Ramalho, P J González, J Almeida, F M Rosas

1963995 *Glacial Isostatic Adjustment Modeling in the Coast Mountains, British Columbia, Canada:* **C Brierley-Green**, T S James, A J Schaeffer, B Menounos, K Wang, J He

1882467 *Global plate motions across seismic cycles and their rheological underpinnings:* **J Fang**, M Gurnis, M Heldman, J Rudi, G Stadler, N Lapusta, R Mallick

1907425 *High-resolution Interseismic Crustal Deformation Mapping in Strain Concentration Zone within the Volcanic Arc Using L-band InSAR and Ultra-dense GNSS Network:* **S Nagaoka**, Y Takada, T Nishimura, T Sagiya, Y Ohta

1855674 *Inferring tectonic plate rotations from InSAR time series:* **Y K Liu**, Z Yunjun, M Simons

1916292 *InSAR Monitoring of Interseismic Deformation Along the Caribbean-South America Transform Boundary:* **S Barrows**, M Higgins, S Wdowinski, T Little

1906071 *Interactions of Aseismic and Seismic Slips of the Philippines Fault on Leyte Island Revealed by InSAR and GNSS Time-Series:* **Y Okur**, Y Fukushima, K E Ching, Y Sharma

1911123 *Interseismic and Postseismic Deformation of 2023 Kahramanmaraş Earthquakes from Subswath and Burst Overlap Interferometry (SBOI):* **M Nergizci**, T J Wright, A J Hooper, M Lazecky, Z Li, S Ergintav, Z Çakır

1918424 *Interseismic Locking on the Main Himalayan Thrust with Physical Constraints and Viscous Flow in Lower Crust:* **D Acharya**, K M Johnson

1870658 *Investigating Surface Motions of the African Continent Using GNSS Data and Kinematic Modeling:* **A Pryor**, D S Stamps, PhD, E Saria, T Little

1907458 *Leveraging Ultra-Dense GNSS Networks for High-Resolution Crustal Deformation Monitoring in Japan:* **Y Ohta**

1927068 *New capabilities and applications for tectonic block models:* **E L Evans**, J Sellars, A C Travers, M Diaz, J Loveless

1935499 *New Intra-Frame Deformation Model for the Western U.S.:* **A Bennett**, Y Bock, L Ferreira, P Fang, D T Sandwell, Z Liu, A Moore, J T Roberts, R Hohensinn

1910654 *Present-day to Millennial Timescale Kinematics of Mountain Building Across Taiwan:* **P C Chiang**, K M Johnson, K E Ching, B J Yanites, R Y Chuang

1877946 *Resolving active tectonic force fields and strain rates in Japan using a physics-based approach:* **L M Wallace**, T Nishimura, A J Haines, E Sherrill

1948326 *Resolving Present-Day Tectonic Deformation in Indonesia Using GPS Geodesy.:* **Y A Rahmawan**, Y Jiang, E Nissen

1928608 *Strain Rate Distribution and Tectonic Deformation Analysis in the Rif Belt from GNSS Data:* **H Akka**, A Tahayt, A Fadil, P Vernant, T Mourabit, A Rigo, S Mazzotti, J Chery, A Koulali, R Reilinger

1971455 *Sudden Megathrust Locking Accelerations at theEdge of a Mature Seismic Gap in Chile:* **J C C Baez Sr**, M S M Switt, S Ruiz, B Potin, E Klein, S Barra, A Socquet, J Hormazabal, D González Sr

1952122 *Surface Creep and Fault Geometry of the Enriquillo-Plantain Garden Fault in Haiti from InSAR Timeseries:* **R Dutta**, J Maurer, Y C Lee

1980073 *Tectonic Readjustment, Not Rift Failure: A Re-evaluation of the Dynamics of Suez Rift, Egypt:* **A T Mohammad**, M Sultan, S L Forman, M K Emil, A Z A Farag, M S Elhebiry

2004504 *The Angular Velocities of the Platesand the Velocity of Earth's Center:* **D F Argus**, C Kreemer, M Figueroa Berroca, K Gaastra, G Cheng, R G Gordon

1906756 *The discrepancies among locking depths estimated from Geodesy, Seismology, and Thermally-Constrained Rate-and-State Friction Simulation:* **X Zhao**, X Xu, H Weng, D Wang

2001284 *The Earthquake Cycle on the Nazca–South America Subduction Margin from the Pacific to the Atlantic: insights from the Central Andes GPS Project:* **R Smalley Jr**, M Figueroa Berroca, D Gomez, M G Bevis, E C Kendrick

1958656 *The Interim GSRM: A New Geodetic Plate Motion and Global Strain Rate Model:* **G Cheng**, C Kreemer, E C Klein, D F Argus, G Blewitt

1984428 *Thermochronologic Constraints on the Transition Between the Marlborough Fault System and the North Canterbury Fold and Thrust Belt, South Island, Aotearoa New Zealand:* **M S Huising**, N A Niemi

2005125 *Toward Independently Measuring Global Tectonic Deformation with L-band Satellite InSAR Time Series:* **C Liang**, X Li, Y Wang, Z Liu, M Simons, E J Fielding, Y K Liu, S H Yun

1997036 *Updated and improved Sentinel-1 InSAR measurements in the Earth reference frame towards surface strain rate mapping:* **M Lazecky**, A J Hooper, M Nergizci, P Piromthong

1884376 *Viscoelastic Models Yield Physically More Reasonable Geodetic Locking Depth: the Altyn Tagh Fault Example:* **Y Zhu**, L Shen, E Nissen, K Wang

248256
Seafloor Geodesy: Recent Technology Development and Research Advances *(joint with NH, OS, S, T)*

Conveners: **Surui Xie**, Scripps Institution of Oceanography; **Shun-ichi Watanabe**, Japan Coast Guard; **Andrew Newman**, Georgia Tech; **Lingchao He**, University of Rhode Island

1867789 *Assessing the Use of a Cabled Bottom Pressure Recorder as a New Reference Site for Mobile Pressure Recorder Surveys at Axial Seamount:* **C Sullivan**, S L Nooner, W Chadwick Jr, G S Sasagawa, M J Cook, J Beeson

1889177 *Bathymetry Monitoring to Detect Seafloor Crustal Deformation Using Autonomous Underwater and Surface Vehicles:* **T Iinuma**, E Araki, K Watari, T Shimura, Y Machida, T Fujiwara

1851440 *Can Less Be More? Assessing the Potential of Sparse ICESat-2 Data for Accurate Coastal Bathymetry Mapping:* **H J Hsu**, J Moortgat

1917093 *Deep-water Steep-gradient GNSS-Acoustic Experiment Along the Rupture Area of the 1946 Aleutian Tsunami Earthquake:* **A V Newman**, S Xie, M A Zumberge, N Chavarria, G S Sasagawa, D Rimington, D Price

1906525 *Detecting Long-Term Crustal Deformation from Continuous Seafloor Pressure Records in the Nankai Trough:* **Y Machida**, S Nishida, H Matsumoto, E Araki

1906361 *Development of a Fiber-Optic Strain Observation Network across the Nankai Trough Megathrust Seismogenic Zone:* **E Araki**, T Yokobiki, M A Zumberge, Y Yamamoto, Y Machida, H Matsumoto, S Tsuji, S Nishida

1938564 *Evaluation of Long-Term Stability of Pressure Gauges for Seafloor Deformation Measurement in the Nankai Trough, Japan:* **H Matsumoto**, E Araki, S Nishida, K Ariyoshi, Y Machida

1866488 *Evaluation of Self-Calibrating Pressure Gauges for Seafloor Geodesy: Instrument Comparisons at Axial Seamount:* **Y Dobashi**, W S D Wilcock, D Manalang, K Smith, L Dentoni, G S Sasagawa, M A Zumberge, M J Cook, W Chadwick Jr, J Beeson, S L Nooner

1988229 *First Results from the IDOOS Offshore Geodetic Experiment Reveal Near-Trench Interplate Coupling in Northern Chile:* **M Moreno**, D Lange, O Pizarro, O Ulloa, J C C Baez Sr, J L Diaz-Naveas, D Melnick, V Cortes-Rivas, N Ramirez, I Urrutia, A Warwel, F Ortega-Culaciati, M Wei, E K Fredrickson, H Kopp, S Xie

1878198 *Implementation plan and prior capability assessment of quick GNSS-A for urgent observations:* **S I Watanabe**, K Imuta, T Ishikawa, Y Yokota

1930894 *Insights into the Recent Inflation of Axial Seamount from Horizontal Seafloor Geodesy:* **M Kidiwela**, W S D Wilcock, D Manalang

1927953 *Laboratory Evaluations of an A-0-A Calibrated Pressure Instrument for the Cascadia Offshore Subduction Zone Observatory:* **L Dentoni**, Y Dobashi, D Manalang, K Smith, W S D Wilcock

1981857 *Monitoring the North Anatolian Fault beneath the Sea of Marmara at the west of Central High using acoustic extensometers:* **M Kido**, N Takahashi, Y Yamamoto, D Kalafat, H Ozener, Y Kaneda

1926507 *Research of high-precision and high-frequency GNSS-A technology using new UAVs and USVs:* **Y Yokota**

1944607 *Seafloor geodetic measurements of deformation of Kīlauea's submarine flank:* **J H Foster**, B R Smith-Konter, M A Zumberge, G Umhoefer, K M Johnson, G S Sasagawa

1899915 *Seafloor Velocities in Alaskan Subduction Zone: Initial Results From GNSS-A:* **S Xie**, J B DeSanto, N M Jackson, A V Newman, G S Sasagawa, D A Schmidt, S C Webb, M A Zumberge

1940173 *Time-lapse Microgravity for Tracking Fluid Accumulation and Release at Slow Earthquake Hotspots on the Nankai Trough Plate Interface:* **S Vassvåg**, T Fujiwara, S Nishida, F J Halpaap

1903859 *Transient Tilt Variations Observed by Borehole Tiltmeters Installed in the Nankai Trough, Japan:* **S Tsuji**, E Araki, Y Machida, T Iinuma

1890447 *What is the origin of the slight shortening across the Kuril trench off Nemuro observed by Acoustic Distance Meter:* **S Matsumoto**, M Kido, Y Ohta, R Hino

251712
From Data to Decisions: Governing Water and Land Under Intensifying Aridification *(joint with NH, SY)*

Conveners: **Narcisa Pricope**, Mississippi State University; **Roger Pulwarty**, NOAA; **Nichole Barger**, University of Colorado; **Sara Alibakhshi**, University of Helsinki

1875608 *Assessing Drought Impact and Systematic Resilience in the Texas Colorado River Basin: A Geospatial Framework for Adaptive Water Governance:* **P Bose**

1921929 *From Global Evidence to Local Action: Enabling Governance Pathways for Aridification Adaptation:* **N G Pricope**, S M Vicente-Serrano, A Toreti, A Ocampo, S Alibakhshi

1855187 *From theory to operational water forecasts in drylands:* **K Michaelides**, A E Quichimbo, D Asfaw, G Blake, M B Singer

246682
Advancement in Watershed Modeling: Agricultural Systems, Erosion Control and Nutrient Balances

Conveners: **Haw Yen**, USDA Agricultural Research Service; **Xuesong Zhang**, Pacific Northwest National Laboratory, Joint Global Change Research Institute; **Latif Kalin**, Auburn University; **Raghavan Srinivasan**, Texas A&M University

1992191 *A Comparative Analysis of Riverbank Erosion between the Banks of a River: Case Study of Padma River, Bangladesh:* **M T Islam**, M S Hossain Talukder, M S Hossain Talukder, M H Riad

1962763 *A Concurrent, Gridded Implementation of WEPP for Scalable Erosion Modeling Demonstrated in the Upper Mississippi River Basin:* **M Ateeq**, R P McGehee

1891168 *A Coupled Agent-Based-Water Quality Modeling Framework for Evaluating BMP Adoption in Susquehanna River Basin:* **M Thapa Chhetri**, Y C E Yang, C Y Lin

1935758 *A Web-Based Scenario Builder for Nonpoint Source Pollution Modeling in Small Watersheds:* **Q Feng**

1993839 *Assessment of Economic Water Productivity of Irrigated Vegetables Farming in Humera, Tigray, Ethiopia.:* **K Mehari**, A Halefom

1897422 *Conservation Tillage and Cover Crop Interactions: Effects on Soil Health, Water Quality, and Crop Productivity in the U.S. Midwest:* **G T McCarty**, K Liang, X Zhang, K Zhao, F Gao

1910147 *Conservation tillage: Navigating trade-offs between soil health and water quality:* **X Zhang**, K Liang, G McCarty, K Zhao, F Gao

1999543 *Diagnostic Evaluation of Regional Models for Crop Yield and Nutrient Leaching in Agroecosystems:* **A Abhishek**, A Hadjimichael, E Sinha

1938102 *Differences in Phosphorus Fertilizer Recommendations Among Functional Models Based on Field Experiment Data:* **K Ren**, M Xu, X Zhang, Y Duan

1905545 *Evaluating Global Rainfall Erosivity Datasets Using High-Temporal-Resolution Rainfall Gauge Records in Oklahoma:* **M Chen**, J Schussler

1970135 *Rain Prayers Function as State-Level Indicators of Drought and Governance Stress:* **W Ouaret**, M E Brown, A Endsley, M Enenkel, T V Loboda

1847301 *The dilemma of global dryland management:* **L Wang, PhD**

1929012 *Evaluating Soil Erosion Susceptibility On Agricultural Fields With Integrated Physically-Based And Machine Learning Models In Southcentral Kansas:* **T I Oishee**, B Gelder, T Sklenar, R Cruse, A Y Sheshukov

1851134 *Evaluating the Multi-functional Impacts of Rainwater Harvesting and Reuse Strategies for Landscape Irrigation in a Changing Climate:* **Y Liu**, S Li, A Nguyen, L Zhou, Z Wu, Y G Her, M Al-Farsi, T Choi, X Romeiko, F Li, D Ren

1902892 *Field-Based Evaluation of the SCS-Curve Number Method under Different Tillage Practices to Improve Runoff Estimation and Modeling:* **U Javed**, J McMaine, K Blann, P Adalikwu, T Trooien, S Mehan, H Zhang

1941653 *Identification of Erosion Hotspots and Scale-Dependent Runoff Controls on Sediment Transport in an Agricultural Catchment:* **C Thoma**, B Szeles, M Bertola, E Schmaltz, C Krammer, P Strauss, G Bloeschl

1851843 *Identification of the response of soil erosion to global change in Central Asian Area:* **C Zhao**, X Dou, Z Shi

1857309 *Improvement of Simulating Wetlands in a Computer Model to Enhance Agroecosystem Sustainability:* **Z Wu**, Y Liu

1870207 *Improving Global Estimates of Nutrient Excretion: Advanced Approaches for Capturing Spatiotemporal Variability:* **T Zou**, L Lassaletta, R Einarsson, A Dobermann, X Zhang

1935131 *Informing Riparian Conservation through Watershed-Scale SWAT+ Simulation of Nitrate and Sediment:* **T R Pokhrel**, S Mehan, T Trooien, S Sellars, J Gilbertson, B Berg

1948498 *Integrating Biochemical Partitioning and Decomposition Processes into TASC-Forest for Enhanced Soil Carbon and DOC Modeling in Forested Watersheds:* **S Li**, S Dangol, R Gelda, R Mukundan

1923831 *Integrating Stakeholder Knowledge and Hydrological Modeling to Protect Water Quality and Support Climate-Resilient Agriculture Under Future Socio-Economic Scenarios:* **H Haas**, K Karl, M Madajewicz, J Jägermeyr

1865057 *Introduction of the WEPP-Comprehensive Operation Management Practice Assessment and Rotation Engine (WEPP-COMPARE):* **H Yen**, D C Flanagan, C S Renschler, A Srivastava, M Williams

1970415 *Modeling Dynamic Land Use Change to Manage Water Quality in Integrated Agricultural-Urban Landscapes:* **A Bin Hannan**, W Pagan, A Hojjat Ansari, C Raj

1867514 *Modeling Forest Growth and Dissolved Organic Carbon in the Biscuit Brook Watershed, Catskill Mountains, New York, Using TASC-Forest:* **S Dangol**, R Mukundan, R Gelda, X Zhang

1897529 *MODELING HOW CLIMATE CHANGE AND FOREST THINNING INFLUENCE SOLUTE EXPORT AND WATER QUALITY IN MUNICIPAL WATERSHEDS OF THE PACIFIC NORTHWEST:* **G L Alawode**, W Burke, J C Adam, M Dobre, J Padowski, E J Hanan

247120
Advancements in Physics-based, Integrated Hydrologic Modeling to Support Water Resources Management *(joint with EP, GC, NH, SY)*

Conveners: **Zhi Li**, Pacific Northwest National Laboratory; **Pin Shuai**, Texas A&M University College Station; **Lili Yao**, University of Central Florida; **Youngjun Son**, Georgia Institute of Technology; **Donghui Li**, RADI Institute of Remote Sensing and Digital Earth, Chinese Academy of Sciences

1951132 *Development of a Hydroeconomic Optimization Model for Flood Risk Reduction in the Budhi Gandak Basin under Inter Basin transfer:* **K L Babu**

1925394 *A Hybrid Modeling and Digital Twin Framework for Field-Scale Water and Nutrient Dynamics of Tile Drainage Systems:* **J Fan**, K Guan, B Peng, L LIU, G E Hammond, X Chen, M Pan, Z Li, R Qin, Y Xiao

1997857 *A Hysteresis-Aware Hydrologic Routing Scheme for Efficient Flood Simulation Using National Water Model Forcing and Hydrofabric:* **D H KIM**

1895483 *A Three-Stage Partitioning Framework for Modeling Mean Annual Groundwater Evapotranspiration:* **F Zeng**, Y Zhang, J S Geurink, K Parajuli, L Yao, D G Wang

1973889 *Accuracy Evaluation of 3D Reconstruction Approaches for non-perennial stream riverbeds:* **J Bao**, Y Chen, PhD, V A Garayburu-Caruso, E Fluet-Chouinard, M Laan, J Smart, L Renteria, B K Forbes, K Markham, A E Goldman, J Stegen

1880199 *Advancing Global River Discharge Estimates: Integrating Remote Sensing, Modeling, and Monitoring for Sustainable Water Resource Management:* **T W W Meshesha**, C S Rousseaux, J B Clark

1922988 *An integrated hydrologic model to assess the impact of conservation practices and programs on groundwater resources for the Northern High Plains aquifer:* **J Traylor**, T Sohl, A Bishop, B Thornton, J Dornbierer, M Allen, T Roy, D Uden, L Spor Leal, D R Bhattarai

1854439 *Modeling Nitrate Runoff and Hydrologic Impacts of Agricultural Expansion in the Straight River Watershed Using SWAT+:* **H K Dhaliwal**, L Ludtke, J L Nieber, J Magner

1853595 *WEPP-IPEAT: Automated Computational Platform for Soil Erosion Modeling and Uncertainty Analysis:* **V SP**, N K D, H Yen, C S Renschler, B A Engel

1918145 *WISER: A Two-Stage Attribution-Oriented Simulation–Optimization Framework for Weather-Resilient Watershed Management:* **Y Tang**, B A Engel

1995495 *Correcting model snow parameters in real-time through assimilation of airborne snowpack observations:* **D Gochis**, K M Sampson, L Karsten, J S Deems, T H Painter

1980569 *Development of a Globally Applicable High-Resolution Water Balance Model: Preliminary Design and Evaluation:* **K Tsuzuki**, T Tebakari

1968935 *Development of the Agriculture Land Information System (AgLIS):* **J M Erlingis**, P W Liu, R Bindlish, S V Kumar, M Yang, A C Ruane, S K Ahmad, L Monhollon, J V Geiger, Z Yang, G Feng, Y Huang

1986374 *Estimating Groundwater Travel Time Using Hydrologic Modeling and Metolachlor Ethane Sulfonic Acid (MESA)-Based Calibration in the Choptank River Watershed:* **Z Xiang**, R Bailey, M J White, C J Hapeman, W D Hively, A White, Z Smith, A Bertholon, R Dessiatoun, M Foroughi

1998635 *Evaluating Noah-MP Groundwater Schemes for Regionally Adaptive Low-Flow Simulation in the Continental U.S.:* **J Wang**, T Pavelsky, M F Jasinski

1948262 *Hydrological Impacts of Land Cover Change: A Probabilistic and Uncertainty Analysis Perspective:* **J Giovando**, M Shi, A N Birnbaum, G Konapala, C Bracken

1907319 *Identification of Time Delays in Hydroclimatic Variables: A Wavelet-Entropy Approach:* **R Panikkar**, R Srivastav

1925217 *Impact of Rainfall Distribution During the Rainy Season on Natural Replenishment of a Karst Aquifer in a Mediterranean Climate: A Case Study from the Western Mountain Aquifer, Israel:* **Y Livshitz**

1882614 *Impact of Soil and Sewer Trench Materials on Urban Sewer-Mediated Fluxes: A Hydrologic Modeling Study:* **I Md Azizul Islam**, A Kumar, K Zhang

1967323 *Improving Hydrological Process Representation for Streamflow Prediction in Ungauged Basins:* **E Hassanzadeh**, L Bwirabuciza-fakage

1915018 *Investigating Tile Drainage Impacts on Hydrological Connectivity and River Flashiness in Agricultural Watersheds of the U.S. Midwest by Integrated Surface-Subsurface Hydrological Modeling:* **H Yu**, B Peng, S S Rathore, S L Painter, P V V Le, M Jia, K Guan, Z Ma, Y Wang

1990211 *Managed Aquifer Recharge Evaluation using the Physics-Informed Deep Operator Network and Capture Map Approach:* **M Bajpai**, S Gaur, K Singh

2000733 *Modeling Wetland Water Holding Capacity Using Multispectral and LiDAR Remote Sensing Data and Physics Based Models: Insights from Historical Flood Events in North Carolina:* **M Anokye**, L H Beni

1918571 *Multiscale Modeling of Stream Oxygen Dynamics in River Networks:* **P V V Le**, S S Rathore, J Gomez-Velez, J Behrens, M J Kurz, S C Brooks, S L Painter

1986538 *Operationalizing Hydrology: Enhancing Flow Simulations with Water Management Infrastructure:* **S Bakar**, E Triana, E Ebrahimi, P Shuai

1932509 *Parsimonious and Transferrable Parameterization of Reservoir Operations: A Modular Approach for Large-Scale Modeling:* **D Li**, G Villarini

1943129 *Physics-Informed Calibration of Vadose Soil Parameters:* **C Saju**, S Singh

249323
Advances in Ecohydrology: Quantifying the Influence of Land-Use/Land-Cover Change on Hydrology and Climate *(joint with B, GC, NH, SY)*

Conveners: **Ben Livneh**, University of Colorado at Boulder; **Cynthia Gerlein-Safdi**, University of Michigan; **Gabrielle Boisrame**, California Delta Stewardship Council; **Shraddhanand Shukla**, UC Santa Barbara

1960738 *Disentangling Forest–Water Trade-offs in Nepal's Middle Hills: Ecohydrological Modeling of Groundwater Recharge and Spring Resilience Under Land-Use Transitions:* **T Kandel**, L E Band, R Zhang, PhD

1916426 *A Spatiotemporal Assessment of Land Cover Changes over Decades in the Galapagos Islands, Ecuador:* **S Chaudhary**, S Gurau, R Ray, B Tikuye

1888553 *A STUDY ON LID MASTER PLANNING AND PERFORMANCE EVALUATION METHODS IN INDUSTRIAL COMPLEXES:* **S Y Moon**, J Choi, D Jang

1927247 *Assessment of Impacts of Climate Change and Land Use Land Cover Change on the Hydrological Water Balance in the Blue Nile Basin:* **S M A Berama**, A Sharma, PhD, N K Goel, P Patle

1941967 *Predictive assessment of dynamic groundwater balance changes in the Indian Ganga Basin:* **S Natarajan**, S Janardhanan, J Indu, G Tack

1993048 *Real-Time Scheduling Theory and Application for Large-Scale Water Diversion Projects:* **C Wang**, M Yang, K Xu, C Ji, S Cai

1969177 *Recent Progress in Quantifying the Uncertainties of Streamflow Simulation in the Upper Colorado River Basin under Modeling Framework:* **S Shelton**, H Gu, W Zhang, S Ballav

1985372 *Reservoir Evaporation Correction in Arid Climates:* **Z Lin**, X Shen, E N Anagnostou, Q Yang, G Sofia, S Zaidi, F Alzabari

1959474 *The Complexity Paradox: When Advanced Evapotranspiration Models Underperform:* **M Kumar**, P Raghav, Y Liu, G Bisht

1887989 *Understanding and incorporating the role of humans to improve streamflow prediction in integrated hydrological models:* **S Arumugam**, J Kim, S Fang

1905047 *Unveiling the role of groundwater in hydrology and nitrate transport: insights from model structure intercomparison over an agricultural watershed in the U.S. Corn Belt:* **Y Wang**, B Peng, M Jia, Z Ma, Q Zhao, D B Abrams, J Yang, K Guan, Y Song

1967204 *Burn Severity, Terrain, and Storm Timing: Explaining Divergent Post-Fire Hydrologic Responses in the Southern Appalachians Using DHSVM:* **Y Song**, C Tang, A B Murray

1939961 *Can Land Restoration Sustain Summer Streamflow? Modeling Land-Use Transitions from Groundwater-Irrigated Agriculture:* **S Tiwari**, L Scantlebury, C Kouba, B A Yifru, L Foglia, T Harter

1934201 *Characterization of streamflow changes caused by land cover change in a tropical catchment:* **A Mendoza**, M Arganis-Juarez, E Carrizosa

1896246 *Characterizing Increasing Hazardous Humid-Heat Exposure Across Africa's Great Green Wall:* **C Tuholske**, C Ivanovich, E L Williams, R M Horton, S Shukla, C C Funk, K Andam, A Zimmer, N Brooks

1978325 *Climate smart agricultural management of guayule and its impact on water, energy, and carbon cycle: Insights from the parameterization of the dynamic guayule growth module in Community Land Model (CLM5):* **T Hu**, Y Song, K Ogden, X Zeng

1984227 *Diverse Precipitation Responses to Irrigation Across the Asian and African Tropics:* **M Nielsen**, B Cook, K Marvel

1885214 *Downscaled Machine Learning and Geospatial Analysis Reveal Climate and Land Use Drivers of Groundwater Depletion in Urban Lahore, Pakistan:* **S Khan, PhD** , M M Noor, B Hassan, S Aftab, S M S Abbas, M U Akbar

1888857 *Effects of vegetation restoration on groundwater storage in Three-North Shelterbelt Forest region, China:* **L Wang**

1968749 *Exploring the Relations among Evapotranspiration Patterns with Land Use and Land Cover Changes in the Mekong Delta Region:* **E Valentini**, S Sapio, S V Nghiem, S H Kim, S Liburdi, A Taramelli

1924402 *From Peaks to Rainforest: Advanced Earth Observations to improve hydrological forecast in sensitive Andean ecosystems:* **M Narvaez**, P Kansara, B F Zaitchik, B F Ochoa-Tocachi, A Getirana

1983911 *Green or Grain: Hydrological Impacts of Cropland Expansion at the Expense of Forest Loss:* **Y Jiang**, J A Burney

1992392 *Impact Assessment of Land Use and Land Cover Dynamics on Water Quality Parameters in the Kangsabati River Basin:* **S Khose, MTech**, B S J Konathala, D R Mailapalli, S Tateh

1848509 *Impact of impervious surface on flood runoff and the simulation model:* **Y Chen**

1893606 *Integrated Assessment of Land Use Change and Groundwater Quality Degradation in Extensive Tropical Coastal Regions of Eastern India:* **A Muduli**, P Chattopadhyay

1940873 *Integrated Modelling of Climate and Land Use Change Impacts on Streamflow in the Pennaiyar River Basin, Tamil Nadu, India:* **A Balu**, S Ramasamy Dr, G Sankar

1917996 *Interactions between forest density and climate change shape fire regimes in a Sierra Nevada Watershed:* **E J Hanan**, W Burke, A Cale, G L Alawode

1859589 *Large wildfires cause local post-fire drying:* **X Liu**, P J Huybers

1851674 *Leveraging Remote Sensing, Machine Learning and Hydrologic Modeling to Assess Post-Fire Hydrologic Response in a Mountainous Watershed:* **B Acharya**, M E Barber

1848539 *Modeling Ecosystem Service Degradation in Malaysia's Johor River Basin Using InVEST and Remote Sensing:* **Y S Yong**, K D Kanniah

1973609 *Modeling the hydrologic impact of invasive plant removal in Hawai'i's Ala Wai Watershed:* **Y F Huang**, Y Tsang, J Fujikawa, N DeMaagd, L Bremer, S Smalley, E Yuen

1920923 *Modeling the Hydrological Impacts of Vegetation Regrowth Following Thinning in Ponderosa Pine Forests:* **L Gallegos**, Z Wang, E R Vivoni

1880766 *Modeling the Impacts of Climate and Land Use Land Cover Changes on Hydrological Process of Guder Sub Basin of Upper Blue Nile Basin, Ethiopia:* **S F Demessie**, Y D Taddele, T G Tarkegn, B Bedadi

1949071 *Monitoring Landscape Dynamics in Uddanam, India: Insights From 35 Years of LULC Change Using Landsat and GEE:* **R Chawla**, S Rawat, D R Mailapalli, N S Raghuwanshi

1997895 *Multi-Temporal Evaluation of land use and land cover change in Southwestern Coastal Region of Bangladesh:* **S Dam**, S B Murshed

1889060 *Non-Local Moisture Recycling Modulates Carbon-Water Trade-offs Under Future Land Use Change:* **C Zhang**, X Peng, S Ma, X He

1913383 *Observational Detection of Postfire Terrestrial Water Storage Change in the U.S. Pacific Northwest:* **A Arshad**, R Abolafia-Rosenzweig, C He, B Livneh

1884149 *Quantifying The Impact Of Vegetation Changes On Runoff In Alpine Basins Using The Budyko Framework Integrating Glacier Effect:* **Z Zhou**, W Huang, J Jin, L Yu, B Yong

1884468 *Quantifying the role of anthropogenic vegetation disturbances on evapotranspiration rates in the Amazon basin:* **S K Ahmad**, T R Holmes, S V Kumar, T M Lahmers, G Konapala, A Getirana, W Nie, P W Liu, C Hain, R Libonati, K Locke

1942185 *Rooted Explorations of the understudied Roro River Basin through Blended Vulnerabilities:* **A Sharma**, R Parajuli, N K Naik, C Murmu, S M Equeenuddin, D R Mishra

1960178 *Sediment–Hydrology–Nutrient Coupling in Shifting Cultivation and Forested Catchments: A Comparative Watershed-Scale Assessment from Mizoram-Eastern Himalayan Region (EHR), India:* **V Sailo**, A Nanda, D S Sen, B K Yadav

1858209 *Temporal shifts in streamflow and streamflow depletion caused by pumping-driven stream drying and altered hydrological connectivity:* **S C Zipper**, I Gambill, M Schmitt, C Kouba, L Scantlebury, T Harter, N Murphy

1961254 *The effect of historical land cover changes on water quality: implications for nutrient and sediment retention services in Puerto Rico:* **M Valladares Castellanos**, K Bilbrew, R De Jesus Crespo, T Douthat

1900575 *Thirsty Thickets: Isotopic Insights into Ecosystem Water Use in a Yaupon-Encroached Savannah:* **J Anderson**, J B West, B P Wilcox

1938555 *Tracking Two Decades of Land-Use Transition in a Climate-Stressed Coastal Delta: A Machine Learning-Based Remote Sensing Study from Gabura, Bangladesh (2001–2025):* **M S Hossain**

249942
Advances in Machine Learning for Earth Science: Observation, Modeling, and Applications

Conveners: **Siyu Zhu**, University of Oklahoma; **Yixin Wen**, University of Oklahoma Norman Campus; **Guoqiang Tang**, University of Saskatchewan; **Phu Nguyen**, University of California, Irvine; **Mengye Chen**, University of Oklahoma Norman Campus

1898297 *16-day Cloudless and Shadowless Composite of Harmonized Landsat Sentinel (HLS) Data for Red, NIR, SWIR1, and SWIR2 Bands:* **Z Liu**, M Hansen

1989631 *A Pretrained Foundation AI Model Reveals Global Landscape Dynamics and Human-driven Ecosystem Deviations:* **J Liu**, C Shen, C Xu, Y Bian, M McDill, N R Kraabel

1988479 *Advancing Proglacial Soil Moisture Prediction in the Arctic Using LSTM Networks:* **D Liljestrand**, R C Johnson

1932648 *Assessing Graph Connectivity for Spatiotemporal Groundwater Level Forecasting in Graph Neural Networks:* **X X Liang**, R M Maxwell

1933393 *CARE-SST: context-aware reconstruction diffusion model for sea surface temperature:* **M Choo**, S Jung, J Im, D Han

1976031 *Data-driven model-agnostic evidence for Nonlocal Geomorphic Transport laws across geomorphic regimes:* **A Tejedor**, M Engsig, A Singh, O D Kose, Z Sun, E Foufoula-Georgiou, Y Shen

1946194 *Deep Learning-Based Regional Assessment of Rainfall Predictability in India:* **D J**, S Singh

1961226 *Deep-learned additive data assimilation for improving weather forecast skill:* **C Miller**, M Bender, J DaRosa, M Ridhwaan Alam, N Krall, K Lieberman, N Silverman, N Brenowitz, L Slivinski, S Frolov

1972694 *Development of an AI Agent for Hydrologic Modeling:* **S Yan**, Z Li, S Zhu, Y Wen, M Zhang, M Chen, J Cao, Y Hong

1908764 *Development of HiDRED (Himawari Data Rainfall Estimation using Deep learning), a real-time satellite rainfall product for Southeast Asia, and an investigation of its applicability to rainfall–runoff analysis:* **K Fujimoto**, T Tebakari

1937352 *Diffusion-Based Learning of Discharge Distributions Across Global Basins:* **Q Duan**, B Huang, W Li

1874540 *Upwind irrigation sustains rainfed crops in India through atmospheric moisture recycling:* **A Koppa**, F Bassani, J Keune, V Deman, D Insua-Costa, D G Miralles, S Bonetti

1950301 *Efficient Kilometer-Scale Precipitation Downscaling with Conditional Wavelet Diffusion:* **H Yang**, C Yi, W Qian, Y Wen, M Yu

1925339 *Enhancing Geospatial Label Accuracy with Prompt-Based Zero-Shot Segment Anything Model: A Retrogressive Thaw Slump Case Study:* **A Agarwal**, Y Yang, M Bartkus, H Rodenhizer, S Potter, G Fiske, B M Rogers

2001543 *Enhancing Wind Energy Forecasting via Solar Covariates and Language-Based Pattern Mining: A Chronos-Based Study in Texas:* **Y Fan**, C Huang, M Zhang, U Lall

1967646 *Evaluating Machine Learning Methods for River Flow Time Series Modeling in U.S. Midwest Agricultural Watersheds:* **M Khodadadi**, B P Grudzinski, M J Vanni, E Widom, V Samadi

1994263 *Evaluating Machine Learning-Based Estimation of Mangrove Vegetation Indices from Integrated SAR and Optical Remote Sensing:* **M M Winey**, N Chowdhury, J A Samin, F F Khan, S B Murshed, Shampa

1979987 *Forecasting Landscape Changes with ConvLSTM Trained on Simulated Landscapes:* **S Basnet**, A Hassanzadeh Bavojdan, A Tejedor, E Foufoula-Georgiou, A Singh

1930653 *Forecasting Wind and Solar Energy Potential Using Time-Series Foundation Models: A Case Study in Texas:* **C Huang**, Y Fan, M Zhang, U Lall

1855923 *Fusion of Multi-Source Precipitation Records via Coordinate-Based Generative Models:* **S Sun**, B Pan, L Li, X Li, E Foufoula-Georgiou, Y Lin, C Nai

1955631 *Global CO_2 Retrievals Using Aerosol Estimates Modeled on OCO-2 Observations:* **A Zhang**, V Natraj, J Yang, S Chen, Y L Yung

1961405 *High-Resolution Climate Data for Arid Regions: A Generative Correction Diffusion Approach for Hydrological Applications in Arizona:* **A Bennett**, H Yousefi Sohi, A Behrangi

1902128 *Leveraging Passive Microwave Data (MiRS) With U-Net Architecture for Satellite Rainfall Estimation in High-Latitude Regions: A Case Study over Alaska:* **V Dao**, M bolboli Zadeh, K L Hsu, P Nguyen, S Sorooshian

1980356 *Machine learning-based analysis of oil and gas methane emissions in the Gulf of Mexico using publicly available satellite data:* **P de Melo**, D J Varon, N Balashov, R M Stauffer, D K Henze, L Bruhwiler

1850164 *Mapping and Monitoring Reservoir Dynamics with a Fine-Tuned Foundation Deep Learning Model and Time-Series SAR Data:* **Y Pu**, H Liu, S Wang, H Su, L Wang, M C LaFevor

1993346 *Modeling Flood Susceptibility Through Explainable Artificial Intelligence Techniques: Case study in Beni Mellal Region of Morocco:* **H Legsabi**, S Taia, S M Boussabou, N Nejaoui, B El Mansouri, L Erraioui

1902728 *NeRF for 3D Scene Construction from Satellite Imagery of Polar Regions:* **A Ozdener**, E Van Kints, N O'Hare, D R Mishra

1869254 *Neural Radiance Field (NeRF) for 3D Reconstruction from Drone Imagery:* **E Hammam**, N O'Hare, D R Mishra

1901253 *Performance of Satellite-Derived Precipitation Products over the Santa Ana River Basin for Reservoir Operations at Prado Dam:* **P Nguyen**, K Subedi, S Sorooshian

1913158 *Physics-informed bias correction using a convolution-based multivariate Gaussian process:* **T Kim**, C Wang, G Villarini, J Done, D Johnson, A F Prein

2002654 *Predicting present and climate change impacts on groundwater nitrate pollution and risk in India at high resolution.:* **P Senapati**, S Sarkar, A Mukherjee

1988825 *Prediction of Local Scour Evolution Beneath a SubmergedCylinder by U-Shaped Fourier Neural Operators:* **H Nazari**, C E Ozdemir, M Tyagi

1867120 *Sedimentological Characteristics Using Machine Learning Ensembles for Rock Avalanche Susceptibility Modelling of Skardu Basin, Northern Pakistan.:* **S S Jagirani**, I A Zardari, M H Agheem, W Liu

252674
Advances in Modeling Surface Water-Groundwater Interactions During Hydrological Extremes: Integrating Process-Based, Numerical, and Machine Learning Approaches

Conveners: **Kabir Rasouli**, University of Saskatchewan; **Abi N Geykli**, Indiana State University

1928834 *Leveraging Expert Knowledge for Automated Baseflow Dominance Detection Across the Continental United States:* **A Aghababaei**, X Li, N Jones, G P Williams, E Webster-Esho, P Clement, R van der Heijden, D M Rizzo

1977635 *Application of the Water Accounting Pus (WA+) Framework for Groundwater Balance Assessment and Its Implications for Water Resources Management in a Semi-Arid Region:* **D Chatterjee**, D Singh, D B Das, P K Singh Asso

1971999 *Self-Organizing Maps to define Wet Season Onset over the Amazon Rainforest and Analyze Long-term Trends in Atmospheric Radiation and Precipitation:* **S Gupta**, E Ledres, D WANG

1986794 *Smartphone Rain Gauge:* **R Kaneko**

1902623 *Spatial Assessment of Two Satellite Rainfall Products Using Quality Controlled Ground-Based Interpolation in Saudi Arabia: Revealing the Need for Regional Bias Correction:* **N Aljehani**, P Nguyen, S Sorooshian

1951841 *Surface Soil Moisture Prediction Using AI/ML Techniques:* **A C A**, S Singh

1894489 *Synthetic Storm Event Generation Using Stable Diffusion to Improve Power Outage Prediction:* **M Azizi**, X Zhang, D Song, D Cerrai, E N Anagnostou

1872916 *Temporal Transfer Learning for Out-of-distribution Generalization in Climate Downscaling:* **S Wang**, N Yadav, A Ganguly

1919372 *Toward an Improved Understanding of Flood Generation Mechanisms Using Explainable AI:* **T Gao**, M Ombadi

1954155 *Transfer Learning with Recurrent Neural Networks of Fuel Moisture Content: Extending from 10h fuels to 1h and 100h:* **J Hirschi**, J Mandel, A Farguell

1868863 *Uncertainty in Soil Elemental Prediction Using Machine Learning and Hyperspectral Remote Sensing:* **X Ma**, A Chen

1920506 *Understanding and Predicting Flash Flood Impact Locations Using Machine Learning and Radar Rainfall Data:* **P Peiravani**, Y Tian, T Pei, S Kim, J U Yu, N Devineni

1848710 *Going Beyond Snow Drought to Explain Decreasing Streamflow in a Warming Headwater Basin of the Colorado River:* **R W H Carroll**, B Gordon, E R Siirila-Woodburn, C Varadharajan, C Albano, J D Lundquist, K H Williams

1903246 *Integrating Machine Learning and Statistical Analysis to Monitor Water Resource Management Related to Karst System Deformation:* **J Heo**, J Engels, C Lim

1855412 *Lessons from modeling flood inundation using process integration, computational flexibility and deep learning:* **V Merwade**, S Saksena, J Joseph, N K D

1903436 *Machine Learning Approaches for Monitoring Brackish Water Quality/Resources and Mapping Karst Susceptibility for Environmental Decision-Making:* **J Heo**, E Iyere

1874314 *Modeling Groundwater Dynamics in a Snow-Dominated Cold Region Aquifer Under Variable Recharge, Pumping, and Climate Conditions:* **H Mahmoud**, T H Mahmood, S F Korom

1957287 *Modeling groundwater storage, flow, and predicted deformation signatures during a precipitation whiplash event in the Cosumnes River Basin:* **G Carlson**, M Girotto, E R Siirila-Woodburn, S DeSousa, S Werth, N Sadhasivam

1939601 *Mountainous bedrock hydraulic characteristics based on groundwater level observations:* **H Kotani**, T Uchida, T Inoue

250522
Advances in Predicting Hydrologic Extremes: Engineering Tools and Products to Strengthen Infrastructure and System Resilience *(joint with A, GC, NH)*

Conveners: **Yonas Demissie**, Washington State University; **Hongxiang Yan**, Portland State University; **Jeremy Giovando**, Pacific Northwest National Laboratory; **Jeffrey Arnold**, ERT Corp

1848249 *Do We Understand the Resilience of California's Water System to Drought Extremes?:* **P M Reed**, R S Gupta, S Steinschneider

1968083 *Co-Developing CONUS-Wide Projections of Weather and Water Extremes to Support US Agency Management and Planning Initiatives:* **A W Wood**, M Askarzadehfarahani, N Mizukami, G Tang, C Mueller, C Frans, M McGuire, B Thames

1970019 *Curbing overconfidence in infrastructure design: Bayesian inference for rainfall return level estimation:* **O Emamjomehzadeh**, D Qureshi, L Cook, O Wani

1890124 *Deep Learning Models in Gumbel Estimation: Robust Performance under Data Scarcity:* **J Lee**, S H Choi, Y O Kim

1877168 *Developing a two-fold machine learning model to predict catchment-scale 3-day rainfall one week in advance using weekly ensemble forecasts:* **S Aihara**, T Yoshida, H Minakawa, A Takada

1923002 *Hybrid LSTM–Kalman Filter Framework with Uncertainty Quantification for Enhanced Dam Inflow Forecasting:* **J Kim**, T Tran

1961133 *Nationwide Daily Baseflow Estimation in India (1980–2020) Using Temporal Fusion Transformers and Process-Informed Clustering:* **V Tripathi**, A Shaw, M P Mohanty

1946508 *Optimal strategies for assigning prior boundary settings in Hydraulic Tomography Analysis:* **X Su**, T C J Yeh

1939698 *Prediction of Groundwater Level Using ANFIS-FFA Approach: A Case Study:* **C Biswakalyani**, S Samantaray, D P Satapathy

1949279 *Improving extreme streamflow estimates across the CONUS Using Physics-Informed ML and Synthetic Rating Curves:* **S Guchhait**, L Pal, M S Riasi, S Dey, L Yeghiazarian, S Saksena

1977554 *Improving Hydrologic Predictions in Arctic Regions through Enhanced Snow Parameterization:* **Z Duan**, H Yan, M S Wigmosta

1847659 *Modeling of Unobserved Historical Variability in Atmospheric Rivers in the Pacific Northwest and Implications for Flood Resilience:* **E D Gutmann**, N Mizukami, J Harrell, M Warner, B Kruyt, A Wood, B Nijssen

1875355 *No Free Lunch? Improving LSTM Flood Predictions With Minimal Loss in Overall Skill:* **M Talbot**, F V Davenport

1887822 *Quantifying Potential Future Shifts in Intensity-Duration-Frequency (IDF) Curves for Precipitation, Wind, and Their Compound Extremes in U.S. Coastal Regions:* **T Song**, K A Reed

1934397 *Regional Variability in the Projected Changes in Sub-daily Precipitation IDF Curves across the Contiguous United States:* **N J S**, G Villarini, S Misra, K White

1960303 *Shoreline Change Analysis of Oswego County, NY on Lake Ontario: A Remote Sensing and GIS-Based Study:* **A Coronato**, A Ahmad, A Baki, T J Smith

1975315 *Testing a new DHSVM representation of soil temperature and permafrost dynamics in the Arctic environment:* **H Yan**, M S Wigmosta, Z Duan

1996432 *Transformer-Based Reinforcement Learning for Flood-Resilient Reservoir Operation:* **S Tofighi**, F Gurbuz, R Mantilla, S Xiao

1882260 *Two New Prototype Plugins for the Community Hydrologic Prediction System (CHPS) to Improve the Hydrologic Ensemble Forecast Service (HEFS) in Short-to-Medium Ranges:* **S Kim**, D J Seo

251224

Advances in Remote Sensing, AI, and Modeling for Hydrology and the Terrestrial Water Cycle

(joint with A, GC)

Conveners: **Hyunglok Kim**, USDA ARS; **Venkataraman (Venkat) Lakshmi**, University of Virginia; **Kristen Whitney**, NASA Goddard Space Flight Center; **ManhHung Le**, NASA Goddard Space Flight Center; **Ehsan Jalilvand**,

1863573 *Flood Risk Assessment with Remote Sensing and Multi-Criteria Decision-Making Models: Case Studies from Antalya and Ankara, Türkiye (2022):* **V Lakshmi**, E G Kir

1962617 *Validation of Swot Derived Reservoir Water Levels in the Upper Paraná River Basin:* **E Dose**, A Getirana, J D Bolten, E Collins, V Lakshmi

1879046 *A Data-Driven Approach for Estimating Groundwater Irrigation for Major Agricultural Basins of the Western United States:* **M F Hasan**, R Smith, F V Davenport, S Majumdar

1941432 *A Generalised Two-Stage Precipitation Merging Framework Using Signal-to-Noise Ratio Optimisation (SNR-opt):* **S Shah**, Y Liu, S Kim, A Sharma

1851737 *A global scale drought study using high resolution satellite soil moisture data:* **B Fang**, V Lakshmi

1935292 *A two-step iterative data assimilation and calibration approach for improving large-scale hydrological processes in the Ganga basin:* **S Tiwari**, B R Nikam, V Garg, M Schumacher

1888112 *AI Improves the Accuracy, Reliability, and Economic Value of Continental-Scale Flood Predictions:* **V Tran**, T Kim, D Xu, H Tran, M Le, T N D Tran, J Kim, D B Wright, T Tran, V Y Ivanov, P Restrepo

1934382 *AI in Water Resources; AI-driven Geospatial mMapping System to Assess Susceptibility in Florida:* **G Golmohammadi**

1909582 *AMSR2SMAP: Converting AMSR2 soil moisture data to L-band format using image-to-image translation:* **G Lee**, J Lee, J Im

1906652 *Assessing Chlorophyll Concentration in Using Geostationary Ocean Color Imager Satellite and Deep Learning approach: Case study of Reclaimed Areas of Saemangeum Watershed:* **Y Lee**, S Kim, D Han, J M Yeom

1940329 *Assessing Seasonal Soil Moisture–Evapotranspiration Coupling Strength and Its Drought Implications Using Triple Collocation Analysis:* **E Choi**, S Kim, Y Kwon, H Kim

1858317 *Assessing Sectoral Water Demand and Climate Vulnerability in a Strategically Industrialized River Basin:* **A Kir**, V Lakshmi, M Kitis

1904928 *Assimilating High-Resolution Snow Water Equivalent Observations into Noah-MP to Improve Seasonal Streamflow Prediction in the Colorado River Basin:* **X Huo**, Y Qiu, F W Hung, G Y Niu, A Behrangi, J S Famiglietti

1970889 *Benchmarking Precipitation Forcings and Assessing Incremental Runoff Contributions with the NASA LIS-HyMAP Model in the Yacyreta Catchment:* **E Dose**, A Getirana, J D Bolten, S V Kumar, L Chamorro, J B Eylander, V Lakshmi

1882042 *Can terrestrial water storage improve S2S hydrologic forecast skill in data-sparse regions to support early warning systems?:* **S Shukla**, W B Anderson, B Cook, A McNally, K Slinski, A Hazra, B Li

1861727 *Capturing Fleeting Snow: High-Resolution Monitoring of Intermittent Snow Cover Dynamics with Deep Learning and PlanetScope Imagery:* **Z Wang**, J Baskar, M Sarma, B Svoma, E R Vivoni

1876917 *Coupling ParFlow with the Common Land Model through a Hybrid Physical–Surrogate Framework:* **C Yang**, A Sun, S Zhang, Y Dai, S J Kollet, R M Maxwell

1963141 *Data-Driven Streamflow Prediction Using CYGNSS-Based Surface Water Maps and Neural Networks for Applications in Ungauged Basins:* **A Valcarcel**, T Pu, C Gerlein-Safdi

1958058 *Data-Driven Framework for Quantifying Dryland Water Storage Patterns and Near-Future Projections:* **H Karimi**, M Sultan, H Elhaddad, M K Emil, K Abdelmohsen

1981818 *Deep Learning-Based Prediction of GRACE-Derived Terrestrial Water Storage Anomalies in the Nile Basin (2003–2024) Using a CNN-LSTM Approach:* **B Tefera**, J Southworth, M Safaei, N S Kawo

1948243 *Deep Learning-Based Surrogate Modeling for the Evaluation of Land Data Assimilation Schemes:* **S Kim**, Y Kwon, H Kim

1990383 *Distinct Hydrologic Response Patterns and Trends Worldwide Revealed by Physics-embedded Learning:* **H Ji**, Y Song, T Bindas, C Shen, Y Yang, M Pan, J Liu, F Rahmani, A Abbas, H Beck, K Lawson, Y Wada

1869235 *Expanding the Observational Record for Multidecadal Land Reanalysis: A Multi-Sensor Data Assimilation Framework:* **A M Fox**, R H Reichle, Q Liu

1862348 *Forecasting Operational and Non-Operational Flows in River Diversions using a Hybrid Neural Network:* **C Turner**, M R Hiatt

1958112 *Fusing Operator Learning, Adversarial Training, and Physics for High-Fidelity Precipitation Nowcasting:* **M K Golkar**, L Alves de Oliveira, M Firouzeh

1972853 *Fusion of Sentinel-1 and Sentinel-2 Data for High-Accuracy Mapping of Rice Field Spatial Distribution in Bangladesh:* **M A G Fardin**, S Nowreen

1899057 *GERD's Hydrological Footprint: Multimodal Remote Sensing & Anomaly Detection for Anthropogenic Signal Attribution in the Nile Basin (2019-2025):* **M Renshaw**, L A Magruder

1949045 *Global Dominance of Seasonality in Shaping Lake-Surface-Extent Dynamics:* **D Long**, L Li, Y Wang, I Woolway

1913399 *Groundwater Level Imputation Using Machine Learning in the Transboundary Karst Region of Lithuania and Latvia:* **V Samalavicius**, J Bikše, G Žaržojus, I Retike, I Zaslavsky, A Kunsakova, J Arustienė

1925475 *Groundwater Level Prediction in the Pra Basin, Ghana: Evaluating the Temporal Generalization of Ensemble and Deep Learning Models:* **E Manu**, S Majumdar, M De Lucia, E Obuobie, A Lutz, M Kühn

1876022 *Hypernetworks for deep learning-based hydrological prediction:* **M S Jahangir**, S Fazli, J Quilty, S Steinschneider

1937762 *Improved Snowmelt Flood Simulation through GRACE/GRACE-FO Data Assimilation in Noah-MP:* **E Cho**, E Cho, PhD, B Li, C Vuyovich, J M Jacobs

1992924 *Improving Global Soil Moisture Retrieval with Enhanced Dielectric and Surface Roughness Models Using GCOM-W/AMSR2 Observations:* **K Tsujimoto**, T Ohta

1863137 *Integrating Temporal and Spatial Strengths: Advancing High-Resolution Global Soil Moisture Gap-Filling through POBI and NSTI Synergy:* **V Lakshmi**, Z Zhu, H Kim, J B Eylander, S Crisanti

1857684 *Interpreting Upstream Influence on Downstream River Discharge Forecasting: Insights from ConvLSTM and SHAP Analyses Across Spatial Scales and Temporal Horizons:* **Z Zhu**, M Saeedi, R Xu, J B Eylander, V Lakshmi, S Crisanti

1924737 *Leveraging Remotely Sensed Soil Moisture for Improved Hydrologic Simulations in Heterogeneous Watersheds:* **J QI**, A Risal, R Karki

1929214 *Machine Learning-Based Soil Moisture Downscaling from Integration of SMAP and MODIS Observations and Soil Maps:* **S Rabiei**, E Babaeian, S Grunwald

1964166 *Mapping Soil Moisture using a Machine Learning Method:* **A Hosseinizadeh**, Z Sheng

1990255 *Mapping waterways worldwide with deep learning:* **Z Mehrabi**, M Pierson, C Kruse, K Fankhauser

1851609 *Operational Hydrological Modeling in Data-Scarce Regions: Assessing the Impact of Fine-Resolution Soil Moisture Assimilation:* **S Marshall**, T N D Tran, M Le, B Q Nguyen, B Fang, H Elhaddad, J B Eylander, S Kantosh, S Crisanti, J D Bolten, V Lakshmi

1946363 *Performance of Artificial Intelligence-Machine Learning Based Hydrological Models under Climate Change: A Review Study:* **M Ucun**, S Bakar, V Lakshmi

1909288 *Predicting the Spatial Distribution of Stable Isotopes in Surface Water and Precipitation Using a Machine Learning Approach: A Comparative Assessment Between the Indus and Ganga River Basins:* **A Jahan**

1972926 *Radiance-Based Evaluation of Land Surface Temperature in the HydroBlocks Land Surface Model:* **J Cai**, N W Chaney

1912574 *Runoff nonlinearities drive inter-seasonal variations in agricultural drought susceptibility:* **W T Crow**

1951523 *Selecting Precipitation Inputs for Hydrological Modeling in Data-Scarce Catchments: Gridded Precipitation versus Machine Learning Output:* **M N Nasimi**, N Zaim

1956365 *Some reality checks on the ML-physical model integration in practice:* **S V Kumar**

1901679 *Spatial patterns of hydroclimatic controls on groundwater storage change in Central and Southern Arizona:* **B Mohajer**, J S Famiglietti, H A Chandanpurkar, F Hung

1911156 *The Fast and the Flowing: Rapid Delineation of Drifting Waterways with SAM-2:* **Z Herbert**, D Aragon

1858532 *Toward Improving Groundwater Estimation: Assessing Surface Water Storage in the La Plata River Basin:* **M L Jover**, A Getirana, J B Eylander, S Crisanti, V Lakshmi

1962109 *Turning Streams into Rain Gauges: Leveraging Long-Term Streamflow Data to Recover Historical Precipitation:* **M Saeedi**, H Kim, J D Bolten, M Rodell, J B Eylander, S Crisanti, V Lakshmi

252475

Advances in Ungauged Flood Prediction: Modeling Approaches, Infrastructure Impacts, and Climate Risks *(joint with GC, NH)*

Conveners: **Chandramauli Awasthi**, North Carolina A & T State University; **Mona Hemmati**, Gallagher Re; **Nancy Barth**, USGS Wyoming-Montana Water Science Center; **Nasser Najibi**, University of Florida; **Jeongwoo Hwang**, NC State University

1979499 *Assessing Regional Flood Hazards Using Synthetic Flood Catalogs: Insights on Population Flood Exposure and Transportation Infrastructure Disruption:* **L Torres-Torres**, G Perez

1934955 *A Comparative Study of Flood Inundation Mapping using Coupled Hydrologic-Hydrodynamic Modelling and Microwave Remote Sensing Approaches in the Kabul River Basin, Pakistan:* **M Adnan**

1885463 *A novel S2S streamflow forecasting framework for ungauged stations within catchments in Peninsular India:* **V Harini**, R Das Bhowmik

1964422 *Advancing Flood Hazard Modeling Across Diverse Storm Types Using 2D Hydrodynamics and Remote Sensing Precipitation:* **M F Mitu**, R Lazin, W Y Wu

2003631 *Application of Synthetic Stage-Discharge Rating Curves for Flood Inundation Mapping:* **N Choi**, M Null

1952806 *Bridging Discretization Scale and Routing Parameters for Accurate Peak Flow Prediction in Distributed Model:* **S Martinez**, N Velásquez, W F Krajewski

1986742 *Data-Driven Resilience Insights through Network Analysis:* **A Jin**, S Chung, D Sardak, M Smith, I Linkov

2000768 *Diffusion-Based Convolutional Learning and Multi-View Data Fusion for Flood Inundation Mapping:* **A Agrawal**, B Raman, A Khan

1949764 *Evaluating Machine Learning Metamodels for Predicting Flood Inundation Extents:* **D Siddiqui**, D Aragon

1982993 *Evaluating the passive microwave remote sensing on daily streamflow forecast in the CONUS:* **A Saito**, S Fang, S Arumugam, J Hwang

1991194 *Evaluating the Reliability of Flood Inundation Mapping in Ungauged Locations Using Observed, Modeled, and Machine Learning-Based Hydrologic Data:* **J Song**, R Saleh Alipour, S Naser Neisary, M S Alam, J Halgren, S J Burian

1857956 *Flood Hazard and Susceptibility Mapping of the Melamchi River basin in Nepal by Using Analytical Hierarchical Process and GIS Applications:* **S Duwadi**, P D D P Adhikari, P D M R Dhital, M R Kathariya

1985357 *Impact of Data Uncertainty on Remote Sensing-Based Flood Forecasting Under Data Scarcity: Case Studies of the Naryn River Basin in Kyrgyzstan and the Chikuma River Basin in Japan:* **Z T Tun**, M Sakai Prof, A E Phyu, T Yamajuku, H Okumatsu

1988744 *Improving Extreme Flood Predictions with a Regional Peaks-over-Threshold Approach:* **K Bae**, S Arumugam

1985549 *Improving Flood Predictions in Ungaged Basins with a Local-Likelihood Spatial Extremes Framework:* **C Awasthi**, S Arumugam

1939574 *Integrated Web-Based Framework for Risk Simulation and Visualization of Potentially Dangerous Glacial Lakes in The Indian Himalayan Region:* **S Saha**, R Deopa, PhD, A K Gupta, S Rao, M P Mohanty

1991029 *Integrating GeoSWMM and GeoGLOWS for High-Resolution Flood Extent Delineation in Ungauged Watersheds of Gazipur City, Bangladesh:* **T Mahjarin**, Z T Haque, P Roy, S Akter

1990606 *NADI: Automated Network Analysis and Data Integration Framework for Streamflow Data Quality and Hydrological Modeling:* **T Steissberg**, G Atreya, P Ray

1937046 *Predicting Annual Maximum Outflow from Reservoirs in Ungauged Basins Using Bayesian Hierarchical Modeling Approach:* **I Ansari**, C Awasthi, S Arumugam

1941929 *Reproducing the Frequency Distribution of Observed Flood Peaks in Southern Italy Using the Q_T-DREAM Distributed Hydrological Model:* **F Mesto**, A Gioia, R Bonelli, S F Dal Sasso, L Giuzio, M Lombardo, S Manfreda, M R Margiotta, B Sileo, P Perrini, V Totaro, V Iacobellis, M Fiorentino, V Corbelli

1979026 *SCENARIO-BASED IDF CURVES FOR RESILIENT INFRASTRUCTURE: THE DOD EXTREME PRECIPITATION ASSESSMENT CAPABILITY:* **C Polatel**, K White, M Dice, C Cook

1996078 *Short Term Forecasting of Stage and Discharge in Hysteretic Rivers using Deep Learning:* **R Dumars**, E House, E A Meselhe, M Muste, I Demir

1948766 *Using Gauged-Site Flood Records with Routing to Improve Regional Flood Quantile Estimators at "Ungauged" Locations:* **J R Stedinger**, K Eng, J Moukarzel

1998194 *Very Short Period Forecasting of Streamflow for Missouri Using Rainfall Radar Nowcasting Input to the National Water Model:* **N I Fox**, M Templeton, E Travis

248196
Advancing flood characterization, modeling and communication

Conveners: **Keighobad Jafarzadegan**, Oklahoma State University; **Brett Sanders**, University of California Irvine; **Ebrahim Ahmadisharaf**, FAMU-FSU College of Engineering; **Stacey Archfield**, U.S. Geological Survey

1961576 *A Deep Learning Emulator for High-Resolution Rapid Flood Mapping:* **R Lazin**, G Pallotta, C Bonfils

1881762 *Advancing Flood Susceptibility Mapping Assessment Using Multi-Criteria Analysis and Machine Learning Models:* **M Rashid**, M Parise Sr, S Haider, S Ullah

1986107 *Advancing Mixed Population Flood-Frequency Methods for Large-Scale Implementation:* **M Mika**

1882585 *Advancing Physics-Informed Compound Flood Modeling through a Newton-Guided Deep Learning Model:* **S Radfar**, H Moftakhari, H Moradkhani

1887030 *An Integrated Modeling Framework for Sediment Dynamics During Urban Flooding: Application to Hurricane Harvey in Houston:* **D Feng**, Z Tan, D Xu, L Li, PhD, G Bisht

1917425 *An Interactive Web-Based Platform for 3D Flood Simulation in NYC Using HEC-RAS: Supporting Urban Vulnerability and Infrastructure Risk Analysis:* **N Law**, M Benetti, Y Miura

1935793 *Anthropogenic and Climatic Drivers of Urban Flash Floods in Pakistan through a Geospatial AI Framework:* **M U Akbar**, S Alian, M Farooq, A Iqbal, A Mirchi

1944051 *Assessing National Flood Interest through News Media Big Data and Explainable AI:* **E Lee**, Y You, Y Jung, J Kam

1951912 *Assessing Vulnerability and Flood Risk in Coastal Alabama, USA Using Remote Sensing and Climate Projections:* **A Alejandro Alvarez Reyna**, F C O'Donnell, A Ojeda, C Beisher

1993524 *Automated Extraction of Hydrographs from Streamflow Records for Event-Based Hydrological Assessment:* **N Velasquez**, J Guerrero-Gallego

1855298 *Capturing Rapid Vertical Flow Dynamics in the Texas Flash Flood of 2025 Using the Adaptive Hydraulics model (AdH). A Non-Hydrostatic Approach to Risk and Resilience.:* **L Ndlovu**, R Talchabhadel

1893600 *Characterizing Flood Inundation Dynamics During Rain-on-Snow Extremes:* **D Hao**, D Xu, G Bisht

1942323 *Co-Development Approaches in Flood Risk Modeling: Comparative Lessons from Three Case Studies:* **L Lee**, N Davis, A Rellinger, R Collini

1983536 *Community-level Spatiotemporal Flooding Emulation using Convolutional and Recurrent Neural Networks:* **L Xu**, S Kim, S Spence

1913564 *Compound Flooding in Tidal River Networks: A Joint Probability Approach with Climate Change Considerations:* **M Ghanbari**, M Maimone, S Malter

1918639 *Comprehensive Probabilistic Assessment of Dam Breach and Flood Modeling in Data-Scarce Environments:* **A M Nemnem**, E Kurter, S Khan, J Imran

1967692 *Controlled Levee Breach as a Method for Reducing Flood Stages:* **E Kurter**, I A I Al-Hafidh, M Calamak, H Chaudhry, J Imran

1881860 *Convolutional Neural Network Surrogate Modeling of Flood Inundation Predictions for the United States Operational Hydrological Forecasting Framework:* **S Dhital**, A Baruah, P Nikrou, S Cohen

1983568 *Cross-Examining Property-Level Flood Risk Assessment Frameworks: Comparing Systems Model Requirements and Systematic Literature Review Findings:* **M Hillis**, M Olson

2004138 *Developing an Equation-Based Model for Accurate Flood Risk Prediction:* **J Onuh**

1984005 *Development of an Open-Source Framework for Automated Quality-Control of HEC-RAS Hazard Models:* **T Williams**, J Bates

1857413 *Enhancing Compound Flood Forecasting Mapping Through Multi-Model Atmospheric Forcing and Machine Learning-Based Boundary Conditions:* **F J Gomez**, H Moftakhari, H Moradkhani

1954657 *Flash Flood Damage Duration Curves: A Multi-level Bayesian Approach to State-Level Analysis and Uncertainty Quantification:* **F Yavari**, M Abdelkader, N Devineni

1859451 *FloodUnet: a Rapid Spatio-temporal Prediction Model for Flood Evolution Based on an Enhanced U-Net:* **T Chen**, J Tian, J Sun, Z Zhang, B Lin

1967268 *Fragmented Knowledge: A Synthesis of Post-Hurricane Floodwater Quality Research:* **E Fidan**, S Fandino

1985709 *From Inputs to Impact: What Drives Skill in Operational Forecasts of Extreme Flood Events?:* **K van Werkhoven**, S Carney

1973172 *High-Resolution Asset-Level Flood Risk Modeling for Climate-Aware Infrastructure Planning:* **R Ghorbani**, G Remias, M S Riasi, L Pal, W Chilton, L Yeghiazarian, S Saksena

1913769 *Hydrodynamic Simulation and Validation of Coastal Flooding in Galveston County, Texas: 2008 Hurricane Ike Case Study and 100-Year Flood Map Development:* **M S M I Momin**, E Cho, PhD, E Cho, S Das

1932543 *Immersive and Game-Based Technologies for Flood Risk Communication, Education, and Collaborative Environmental Simulation:* **I Demir**, Y Sermet

1902242 *Influence of Storm Temporal Position on Critical Design Storm Hydrographs:* **D A Zeweldi**, J Keith, K Koch

1892194 *Mapping Shifts in Future Flood Hazards Across the Conterminous United States: A Multi-Model, Regional L-Moment Approach:* **G R Ghimire**, S C Kao, S Gangrade, S DeNeale, M Christian, B Brickhouse

1981406 *Mixed Populations and their Impacts to Flood-Frequency Estimation within the Puget Sound Region:* **M Bartles**

1968735 *Monte Carlo-Based Building Damage and Emission Functions for Assessing Flood Risks:* **S Rowan**, F Han, R Permenter, W Mo

1948923 *Multi-threshold Bayesian Estimation for the Peaks-Over-Threshold Flow Frequency Model:* **S Lawson**

1913844 *On the application of the extended generalized Pareto distribution for flood frequency analysis across the contiguous United States:* **H Kim**, P Naveau, G Villarini

1954775 *Peaks Over Threshold Modeling for Mixed Population Flood Frequency Analysis:* **A Breverman**

1875712 *Pluvial Flood Vulnerability on Military Bases:* **A Rake**

1990549 *Predicting Future Flood Vulnerability Zones in Texas Using Explainable GeoAI: A Deep Learning Framework for Long-Term Risk Assessment and Emergency Preparedness:* **M Shahrier**, A A Kafy, M M T Mukarram

1924895 *Projecting Compound Pluvial, Fluvial and Coastal Flood Inundation in Coastal Watersheds under Future Climate: The Importance of Wind and Value of 2D Rain-on-Grid Hydrodynamic Models:* **H Tansar**, S Kaiser, E Ahmadisharaf

250130
Advancing Hydrologic Processes to Improve Flood Prediction

Conveners: **Amar Tiwari**, Michigan State University; **Nanditha J S**, University of Iowa; **Anukesh Krishnankutty Ambika**, Oak Ridge National Laboratory; **Saran Aadhar**, Indian Institute of Technology Jodhpur; **Alka Tiwari**, University of Texas at Austin

1970928 *A Copula-Based Statistical Framework for Compound Pluvial–Fluvial Flood Risk Assessment:* **A Singh, PhD**, S Shukla, P J Sharma

1966958 *Real-Time Hydrological Monitoring and Model Calibration Using an LLM-Based Intelligent Agent:* **Z Lu**, G Ni

1902064 *Reimagining FEMA flood maps with an asset-level, CONUS-scale framework for design food risk estimation:* **S Guchhait**, L Pal, M S Riasi, S Dey, L Yeghiazarian, S Saksena

1947035 *Reliability-Based design for flood walls under climate change:* **N Devineni**, M Ghosn

1993139 *Resilience Component Evaluation of Urban Blue-Green-Grey Drainage Systems Based on Flood Defense Index:* **D Park**, N Lee, J Jang, S KIM, S Shin, J Kim

1885728 *Rise of the Guadalupe River: A Multifaceted post-event Analysis of the July 2025 Texas Flood event:* **A Baruah**, D Munasinghe, S Cohen, D Devi, Y Chen

1881484 *Storm surge trends along the U.S. coastline and the role of tropical cyclones:* **T Wahl**, J Morim, F Calafat, P M Mahanthe Gamage, S Dangendorf, K P Sah

1991158 *Streamlining Calibration in Spatially Resolved Event-Based Hydrologic Modeling: A Parsimonious Two-Layer Curve Number Framework:* **C Farmakis**, A Langousis, E N Anagnostou, S Emmanouil

1942532 *Temporal and Social Dimensions of Flood Vulnerability: Integrating Seasonal Water Depth Extremes and Composite Social Indices in Coastal Urban Cities:* **M Debnath**, N Alamdari

1993945 *Transforming National Flood Assessment Through Scalable Probabilistic Modeling of Gaged and Ungaged Watersheds:* **K J Neff**, C Lindemer, W Lehman

1963924 *Unraveling Flash-Flood Environments: An Ingredients-Based Examination of Heavy Rainfall Events:* **M G Albright**, E Bower, M Chenard, M Klein

1929163 *Unsteady Flood Hydraulics and the Variability of the Stage-Inundation Relationship on Agricultural Floodplains in the East Fork White River, Indiana:* **S Leach**, S A Khan, M Alif, J A Czuba, D A Edmonds

1956993 *Advancing Continental-Scale Hydrology Model Calibration Using Large-Sample Emulators across a Range of Model Complexity:* **A W Wood**, G Tang, M Askarzadehfarahani, N Mizukami, S C Swenson, C Mueller, C Frans, M McGuire, B Thames

2002791 *Analyzing the June 2024 Flood Event in Northwest Iowa: Challenges and Opportunities for Improved Warning Lead Times:* **H J Vergara, PhD**, M Abdelkader, V Robledo, S Henao Gomez, F Quintero

1974992 *Assessing the Impact of Hydro-Enforced Digital Elevation Models on Flood Inundation Mapping in Alabama Watersheds:* **A Davies**, L Davis, J Song

1909266 *Drivers of Flash Flood-Producing Extreme Precipitation Events:* **N Dilip K**, V Mishra

1958645 *Drivers of heterogeneous rainfall-runoff responses and flood generation across the Hawaiian Islands:* **Y Tsang**, Y F Huang

1871338 *Evaluating the effects of climate change and cascade dams on flood frequency in the Mekong River basin using annual-maximum-series and peak-over-threshold methods:* **B Q Nguyen**, S Kantosh, T N D Tran, A D Tiwari, M Farag Ahmed, B V Doan, V Lakshmi

1868370 *Foreseeing Rivers Prone to Extreme Floods from Everyday Hydrologic Dynamics:* **S Basso**, H J Wang, C Haugen, R Merz, L Tarasova

1861293 *High-Resolution Flood Assessment and Forecasting in the Great Lakes Basin using Hydrological-Hydrodynamic Models and Socioeconomic Indicators:* **A D Tiwari**, Y Pokhrel, A Fujisaki-Manome, Y Hong, L M Fry, A Rafieeinasab

1917394 *How Storm Types Shape Rainfall: A Watershed-Scale Analysis of Dam Overtopping Events in the Eastern U.S.:* **H I Orok**, D A Hence, C A Bieri

1978748 *Hydroclimatic Signatures and Process Attribution in Large Floods of the Brahmaputra River Basin:* **G Vangala**, V Mishra

247629
African Hydrology: Bridging Data, Models, and Innovation for Sustainable Solutions *(joint with GC, NH)*

Conveners: **Adeyemi Olusola**, York University; **Moctar Dembele**, University of Lausanne; **Christiana Olusegun**, Michigan State University; **Meron Teferi Taye**, Katholieke Universiteit Leuven

1946115 *Advancing Water Security in Africa through the IWMI Africa GeoPortal:* **A Owusu**, T Perera, L Maduskanka, M D Leh, K Mekonnen, K Akpoti, P Tinonetsana, A Seid, N M Velpuri

1926762 *Aquifer Insights at the Yaoundé Pilot Site:* **A Ribodetti**

1985195 *Assessing Ghana's Hydroclimatic Vulnerability: A Level II Climate Risk Informed Decision Analysis (CRIDA) Case Study:* **S Rana Magar**, M Mowafy, S Tan, K M J Verbist, P Ray, M Boateng

1944969 *Assessing Livestock Impacts on Water Budgets in Agricultural Catchments: Insights from Water Accounting Analysis in Eastern Uganda:* **M D Leh**, G Fernando, N M Velpuri, M T Taye, G Y Ebrahim, A Nicol

1875810 *Assessing Total Renewable Water Resources in the Nile Basin: Insights from an Integrated Basin-Wide Model:* **M Deribe**, B B Kidanewold, A M Melesse

1988927 *Quantifying the Effects of Climate Change on Hydrological Extremes Using Coupled High-Resolution WRF-WRF-Hydro Simulations in South Korea:* **Y Lee**, B Kim, J Choi, Y Hiraga, J A Hokson, S J Noh

1912546 *Sedimentation Threat to Flood Control Capacity in Indian Reservoirs: Insights From Remote Sensing and Empirical Analysis:* **D Mani**, V Mishra

1866893 *Simulating Flood Dynamics with Agricultural and Grey Infrastructure in Japanese Watersheds:* **J E Boulange**, H Minakawa, S Aihara, T Yoshida

1940227 *The Effectiveness of Dams in Flood Mitigation Under Climate Change in India:* **U Vegad**, V Mishra

1878078 *Towards a global ML-based framework for uncovering flood drivers and enhancing flood prediction in data-limited environments:* **L J Slater**, B Zhang, Y Liu, M Wortmann, S Moulds

1940278 *Unified flood modeling with generative physical distillation neural network under data scarcity:* **X Cao**, Y Yao, H Qin

1887858 *Using Rainfall-runoff Simulation Errors to Infer Bedrock Influence on Flood Response in Japanese Mountainous Catchments:* **S Fugami**, Y Ichikawa

1868078 *Utility of Flood Typing to Enhance Flood Frequency Analysis in the United States:* **U Bandara**, G Mascaro

1887222 *Characterizing West African Monsoon with Large-Scale Indices:* **A Olatunde**, L V Carvalho

1992668 *Climate Change Impacts on Crop Production in Africa:* **S Gebrechorkos**, R Stuart-Smith

1945138 *Data-Driven Hydrological Discharge Simulation in the Limpopo River Basin for Transboundary Water Management:* **J Tlhomole**, M Garcia, K Matheswaran, E Borgomeo

1978116 *Drivers and Trends of Root-Zone Soil Moisture at Wet Season Onset across Sub-Saharan Africa:* **C Chalmers**, Y Zhang, A J Rigden

1985306 *Enabling Urban Flood Models and Flood Early Warning Systems in Kigali city-Rwanda: A Review and Audit of Hydrometeorological Data and Models:* **E Zuetell**, F Tetero, M Busogi, H Bizimana, A Umutoni

1906317 *Equitable flood risk management through transdisciplinary knowledge generation in marginalized communities of East and West Africa:* **M T Taye**, Y Umer, H L Belay, M Dessalegn, S O Ansah, O Lino, E Dyer

1928428 *Evaluation of Potential Evapotranspiration Forecasts and Their Potential for Use in a Hybrid SPEI Product:* **G J Husak**, C C Funk, W Turner, S Shukla, L Harrison, D C Alaso, R Saldivar

1942729 *From Rainfall to Runoff: Cascading Uncertainty Using Top-Down and Bottom-Up Rainfall Products in Three West African River Basins:* **R Yonaba**, F Tazen, G Ngonga, A Belemtougri, A Kiema, L A Mounirou, H Karambiri

1945624 *Geophysic insights for the volcano-shist aquifers of the Sanaga Shear Zone and river valley basins:* **M Yem**

2000829 *Groundwater in a Changing Africa: Integrating Climate, Ecology, and Remote Sensing for Smarter Water Management:* **A H Shabbir**, J Knouft

1938717 *Hybrid Object Detection and Generative AI Framework for Automated River Gauge Plate Reading and Discharge Estimation:* **K Vigneswaran**, H Retief, M Garcia, H Tennakoon

1927918 *Hydrological Implications for Sustainable Irrigation Development in the Lake Chad Basin under Climate Change:* **M Dembele**, N Amdar, M Smilovic, K Akpoti, S Zwart

1850571 *Hydrological simulations in a High Performance Computing environment from the comfort of your own browser: First experiences from Africa with the eWaterCycle platform:* **N Van De Giesen**, M Melotto, F O Annor, R Hut

1938442 *Limpopo River Basin Digital Twin: Enabling Sustainable Water Management with the Open Data Cube Framework.:* **A Afham**, H Retief, P Silva, Z Kiala, C Dickens, S Ghosh, M Garcia

2000497 *Moisture Recycling in the Upper Nile Basin and Its Influence on the Neighboring Regions:* **Y Chen**, A Y Shamseldin

1925919 *Proliferation of alternative drinking water systems in the city of Niamey: Case study of two communal districts of Niamey (III and IV):* **I Boubacar**, R Cheffou Mairounkoundoum Sr

249974
Anthropogenic Impacts on Hydroclimate Processes and Extremes in Cities *(joint with A, GC, NH)*

Conveners: **Xinxin Sui**, University of Texas at Austin; **Ruby Leung**, Pacific Northwest National Laboratory; **Aubrey Dugger**, National Center for Atmospheric Research; **Jessica Eisma**, Purdue University

1887694 *Advancing Transparency in Urban Flood Risk Mitigation Planning Through Community-Based Risk Trajectories:* **K Serafin**, J R Koseff, J Suckale, D Ouyang

1850602 *RootSense: Bridging In-situ and Earth Observation Data for Agricultural Drought Resilience in Sub-Saharan Africa:* **C L Nakalembe**, A D Adebayo, M Cosh, K Mwangi, S Mourice, D Okello

1948564 *Satellite-Surface-Area Machine-Learning Models for Reservoir Storage Estimation: Evaluation and Operational Deployment at Loskop Dam, South Africa:* **H Retief**, K Vigneswaran, S Ghosh, M Garcia, C Dickens

1875433 *Spatiotemporal Dynamics of Water Quality and Trophic State of the African Great Lakes using Sentinel-3 OLCI Observations:* **E Miliutina**, H Liu, J Men, S Shu, R Beck

1927283 *Stories of Sub-Saharan Africa Water: Exploring the Changes in Inland Surface Water Extent:* **N O Djan**, P Jaramillo

1928357 *Supporting Advancements in Lake Malawi Water Resources Management:* **R Hoops**, A Gronewold, A Gossard, M Mulumpwa, L Mtilatila, G Chavula, E Chaima, L Fiwa, J Chitete, D Kambuku, T Nyasulu, K Andreah

1962203 *Temporal variability of groundwater levels and flow system dynamics in the semi-humid tropical volcanic highlands of Ethiopia:* **F N Abera**

1857727 *THE RAINFALL REGIME OVER THE RIFT VALLEY LAKES OF EAST AFRICA AND THEIR CATCHMENTS:* **S Nicholson**

1942952 *Three Decades (1995–2024) of Continental African River Discharge Across 650 000 + Reaches: Unveiling Trends from Headwaters to Major Dams:* **K Akpoti**, N M Velpuri, N Mizukami, R Koduah, E Mortey, M D Leh, A Owusu, P Thilina-Prabhath, K Mekonnen, L Maduskanka, T Perera, A Seid, G B Senay, S Kagone

1858289 *Understanding drought in East Africa through Earth observation, models, and machine learning for decision support:* **C Ruiz Villena**, R Parker, R Maidment, T L Quaife, Y Douanla Alotse, M B Sylla, G Kondi Akara

1874125 *Assessing Historical and Future Stormwater Runoff in the Dallas-Fort Worth Metroplex through Hydrological Modeling Enhanced by Machine Learning-Based Soil Moisture Downscaling:* **P HassaniFakhrabadi**, S Mahat, D Li, N Z Fang

1880743 *Characterization of Reservoir Impact on Urban-induced Warm Season Convection:* **B Johnson**, M D Williams, K Venable

1938634 *Drivers of Intensifying Tropical Cyclone Precipitation in South China: Storm Changes and Rapid Urbanization:* **C Hu**, F C Y Tam, X Sui, K K W Cheung, Y LI, Z L Yang

1970538 *Investigating the Influence of Rural Soil Moisture on Urban Rainfall Patterns in Dallas Using Satellite Observations:* **S Khojeh**, X Sui, A A Tavakoly, Z L Yang

1864709 *The Urban Rainfall Effect Is Confirmed. What's Next?:* **M Shepherd**

1906778 *Under the shadow: observational evidence of tropical cyclone rainfall enhancement outside urban cores:* **Y Shen**, H Huang, P Lu, Q Li, Y Yang, L Yang

251968
Coastal Hydrology: Observation, Modeling, and Prediction of Surface and Subsurface Processes and Patterns *(joint with EP, NH, OS)*

Conveners: **Soheil Radfar**, University of Alabama; **Hamed Moftakhari**, University of Alabama; **Frank Tsai**, Louisiana State University; **Annalisa Molini**, Tulane University

1977097 *Advancing Hydrologic Modeling for Coastal Texas: Capabilities and Limitations of 2D Routing in HEC-HMS:* **B Devkota**, S Mahat, A Paudel, A Kiaghadi, M S Islam, R Neupane, D Moore, D Li, N Fang

1970137 *Causal Relationships Between Water-Column Dynamics and Bottom Dissolved Oxygen:* **R Badpa**, K M M Lwiza

1952106 *Cold season hydrological and temperature dynamics in coastal wetlands across the northeastern US:* **E Boles**, M E Eagle, J Tamborski, J Guimond

1880063 *Compound Effects of Evolving Climatic and Coastal Drivers on Shallow Aquifers:* **X Wang**

1868997 *Controlling Drivers of Wave-Driven Ripple on Interfacial Fluid and Solute Exchange in Coastal Hyporheic Zone:* **C Y Chen**, J Zhang, H A Michael, T J Hsu

1869156 *Coupling Coastal River-Subsurface Seawater Intrusion with a Modified Darcy-Brinkman Framework:* **T J Nieh**, F T C Tsai

1954117 *Decadal Variability of Mixed-Layer Depth and Wind Forcing on Surface Chlorophyll-a Distribution in the Bay of Bengal:* **S U M B Chowdhury**, K M A Chowdhury, N U M K Chowdhury, A Moontahab, A Karmakar

1873699 *Designing the Coastal Subsurface Monitoring System for Southeast Florida:* **M C Sukop**, K Lau, H Eschenburg, A Loyola

1890697 *Equivalence and Impact of Inland Boundary Conditions on Seawater Intrusion Modeling in Stratified Coastal Aquifers under Sea-Level Rise:* **Y Liu**, J Luo, S S Rathore

1920193 *Exploring the Hydrologic Dichotomy of Saltwater Intrusion Events in the Lower Mississippi River Basin.:* **R Shah**, J L Sabo

1891121 *Urban geomorphological and hydrological transformation in Milan (Italy): flooding impacts and mitigation strategies along the Seveso River:* **E Hamidova**, A Bosino, M De Amicis

1864030 *Urban signals in local precipitation regime: asymmetry and heterogeneity:* **J Xiong**, Y Yang, D Yang

1897357 *How Texas Cities Alter Warm-Season Storms?:* **X Sui**, J W Nielsen-Gammon, Z L Yang, D Niyogi

1958733 *Exploring the Link Between Salt Tolerance, Plant Hydraulics, and the Resilience of Coastal Wetlands:* **E Ozioko**, A Nwokoye, C Berger, B Kleiss, A Molini

1891276 *Flood Inundation and Suspended Sediment Flux Projections Indicate Significant Toxic Metal Inputs in the NE Gulf of Mexico as a Result of Hurricane Impacts:* **S Anderson**, N Dimova, J M Frame, H Moftakhari

1964328 *Freshwater and Saltwater Interactions Drive Coastal Aquifer Salinization:* **G Nordio**, P J Dennedy-Frank

1947835 *From Local to Regional: Seawater Intrusion into Coastal Aquifers via Preferential Inundation Pathways:* **J Luo**, C Lu

1900757 *Hydrogeochemical Processes Driving Elevated Arsenic and Fluoride in the Texas Gulf Coast Aquifer:* **P Knappett**, H Goodwin, R Buskirk, T Roh, D K Nordstrom, F Marcantonio

1868171 *Hydrologic controls on Surge Induced Salinization in Coastal Forest-Marsh Gradient:* **A Noori**, S Fagherazzi

1854064 *Impact of Future Rainfall and Sea-Level Rise on Groundwater-Surface Water Interaction and Salinity in South Florida:* **M A Gebremedhin**, A S Elshall, M Ye, S Tsegaye, R R Rotz, S Krueger

1889075 *Introduction of Japanese river's suspended particles during river-flood into coastal water increases dissolved ^{137}Cs:* **H Takata**, Y Wakiyama

1977976 *Multivariate Analysis of Sea Surface Salinity, Sea Surface Temperature, and Chlorophyll-a in the California and Pacific Northwest Coastal Regions using Satellite Derived Data:* **B Prim**, A R Perez, J Vazquez, L Baskaran, J T Roberts, M Giraldo, A Halaby, J Spier

1871166 *Numerical Analysis of Wind–Wave–Current Interactions during Tropical Cyclones in the South China Sea using COAWST:* **Y Shi**, Y Low, Y P Li

1861508 *Numerical Investigation of Storm Surge Effects on Nitrogen Cycling in Nearshore Aquifers:* **W Song**, C Lu, J Luo

1891837 *Quantifying Impact of Extreme Events and Typhoons on Sediment Transport in Japanese River Systems at High Temporal Resolution:* **D Sehgal**, D Yamazaki, K Udo

1976336 *Reconstructing nearshore tidal surface water elevation from SWOT to simulate coastal wetland biogeochemistry:* **E Fluet-Chouinard**, B N Sulman, T O'Meara, J R Holmquist, S J Wilson, N D Ward, P Matte, M Simard, S C Pennington, V L Bailey

1985594 *Refining Sea Level Trends at the Coastal Interface: Insights from an Evolving Altimetry Record:* **B Hamlington**

1966257 *Regional assessment of climate variability with links to streamflow and groundwater fluxes in Southcentral Alaska:* **J Jenckes, PhD**, A Russo, W Matyas, D F Boutt, L Munk

1947895 *Revealing the Influence of Tidal Forces on Surface Current and Mesoscale Eddies in the Northern Bay of Bengal: A Modeling Approach:* **T Sumaia Khan**, K M A Chowdhury, A Moontahab, T A Capuano, N U M K Chowdhury, S U M B Chowdhury

1861416 *River Deltas Under Change: Integrating SWOT Observations and Graph Theory to Predict the Response of Deltas to Climate and Human-Induced Change:* **P Passalacqua**, E G Henson, M S Daniller-Varghese, J P Schwenk, A Piliouras

1971916 *Saltwater Intrusion in Coastal Freshwaters Under Changing Ocean and Hydrologic Conditions:* **S Mukhopadhyay**, L Kim, M C Levy, M A Merrifield, S Giddings

1923522 *Seasonal Salinity Hysteresis in Estuaries: Governing Role of System Response Time and Hydrologic Forcing:* **M Yavary Nia**, A Canestrelli, H Klammler, M D Annable, D Pinton, J W Jawitz

248166
Compound Flooding in Coastal Urban Areas: Integrating Sea Level Rise, Tidal, Groundwater, and Stormwater Dynamics *(joint with NH)*

Conveners: **Valentina Prigiobbe**, University of Padua; **Amrutha Suresh**, University of Padua; **Mahla Tajari**, University of Padua

1949853 *Altered morphology as a possible cause of increased tidal regimes in Biscayne Bay (FL): insights from a reduced-complexity model.:* **E Moresco**, N Tambroni, S A Talke

1967802 *Anticipated Compound Flooding in Miami-Dade Under Extreme Hydrometeorological Events.:* **A Gumbs**, A Shanko, A M Melesse, J Obeysekera

1920526 *Assessing Compound Flood Impacts on Groundwater Levels in Coastal Urban Communities:* **F L Santiago-Collazo**, A Bunger

1874942 *Simulating Groundwater Tidal Interactions in a Coastal Forested Wetland Using MODFLOW: A Case Study from the Santee Experimental Forest:* **A Sadeghi**, C J Allan

1946912 *Simulation of the thermohaline structures in the Northern Bay of Bengal:* **A Moontahab**, T Sumaia Khan, T A Capuano, K M A Chowdhury

1880853 *Surface–Subsurface Hydrological Connectivity and Salinity Dynamics in a Back-Barrier Marsh:* **N Flaherty**, M R Hiatt, J R White

1949366 *Tight coupling of groundwater and sewer models for compound flood modelling in coastal urban areas:* **V Prigiobbe**, K L Jahn, J Hughes, A Suresh, M Tajari, L Herdman, B Bayraktar3, K Masterson3

1869912 *Time-Series Analysis of Potential Mining Impacts in Southeast Georgia:* **H Slaughter**, A Milewski

1934957 *Title:3-Dimensional Groundwater and Surface Water Interactions Modeling in Urban Coastal Miami Dade to Understand Urban Flood Drivers Using MODFLOW 6, and Delft3D with DISV Discretization to Capture the Complex Geometry of Coastal and Urban Hydrologic Features.:* **M Cardona**

1924295 *Tracing Coastal Groundwater Change: Data-Model Synthesis under Sea-Level Rise and Climate Change:* **M Yavari Nia**, H Klammler, M D Annable, A Canestrelli, J W Jawitz

1863693 *Understanding Extreme Coastal Sea Levels: Insights from Causal Inference Modelling:* **Q Jiang**, Y Low, X He

1872867 *Assessing Groundwater Level Variations in Response to Compound Flooding: A Case Study of Tybee Island, GA.:* **C Majeni**, A Milewski

1989494 *Benefit-Cost Analysis of Green and Gray Infrastructure Solutions for Sea-Level Rise Adaptation in a Confined Estuary:* **S M Zapp**, M W Brand, T Yusuf, P Bacopoulos, J Schmitt, M A McKeon, H Diefenderfer, C Janousek

1852105 *Block-Scale Flood Depth Simulations During Hurricane Irma:* **B P Jangid**, S Lazarus, W Pringle, N Velásquez

1954837 *Compound Flood Risk Under Future Climate: A Storyline Approach to Extreme Precipitation and Lake Levels in Chicago, Illinois:* **Z Zhou**, P Xue, Y Chen, A Li Walker, E S IM

1992065 *Global Assessment of Fluvial Flooding Amplification in Coastal Megacities Driven by Sea Level Rise:* **P Modi**, Y Hirabayashi, D Yamazaki

1962424 *Investigating the contributions of inland runoff, coastal, and compound processes to flood hazard and exposure during tropical cyclones.:* **M M Rashid**, R Uddin Ahmed

1856423 *Large discrepancies between event- and response-based compound flood hazard estimates:* **S Santamaria-Aguilar**, P M Mahanthe Gamage, A R Enriquez, T Wahl

1900607 *Machine Learning-Powered Flood Intelligence: A Scalable Sentinel-1 SAR Pipeline for Near-Real-Time Inundation Mapping and Disaster Informatics:* **R Amer**

1979747 *Measured and Computed Compound Flooding along Two Heavily Urbanized Rivers, West-Central Florida, USA:* **E Royer**, P Wang

1919911 *Multivariate Flood Hazard Assessment for Coastal India:* **U Mohseni**, A Khouakhi, V R

1959745 *Representing Fast (Surface) and Slow (Subsurface) Threats to Below-Ground Water Infrastructure in Integrated Urban Coastal Hydrologic Modeling:* **A K Farnum**, O Erukubami, C B Voter, H A Michael, P T Imhoff, T Barber, L Trout, C Overcash

252105
Compound, Concurrent, and Cascading Hazards in a Changing Climate: Identifying Drivers, Impacts, and Risk Implications *(joint with A, GC, NH)*

Conveners: **Vinnarasi Rajendran**, Indian Institute of Technology Roorkee; **C. T. Dhanya**, Indian Institute of Technology Delhi; **Shushobhit Chaudhary**, Indian Institute of Technology Dhanbad; **Usman Mohseni**, Visiting Researcher

1873676 *Uncovering Multi-Scale Drivers of Hydroclimatic Whiplash over India (1951-2020) using Machine Learning-Augmented Dynamic Causal Networks :* **D Bhattacharjee**, C T Dhanya

1854340 *Weather Jiu Jitsu: A 21st century paradigm to leverage nature's power to mitigate some Compound, Concurrent, and Cascading Weather Hazards in a Changing Climate:* **U Lall**, M Liu, Q Huang, H H Kwon, A Nayak, Y Kwon, M Zhang

1954887 *A Mile of Devastation: Documenting the June 2025 Beitel Creek Flood in San Antonio:* **A Bose**, E Eid, H O Sharif

1972204 *Are Coincidental Compound Extremes Escalating across the Himalayan Region under Climate Change?:* **A Singh, PhD**, S Barbhuiya, P J Sharma, V Gupta, A Sharma, PhD

1899432 *Simulating the Impacts of Green and Grey Solutions for Compound-Driven Nuisance Flooding: Tides, Wave Runup, and Non-Tidal Residual:* **T Yusuf**, M W Brand, P Bacopoulos, S M Zapp, J Schmitt, M A McKeon, H Diefenderfer, C Janousek

1937068 *Temporally Downscaled Compound Coastal Flooding Scenarios for an Urban Watershed in New York:* **A Hjelmstad**, A A Tavakoly, A Byrd, N Memarsadeghi, V Roland, PhD, A W Sisco, A AghaKouchak

2002486 *Understanding Compound Flood Hazards: An Interactive Web Application:* **L Herdman**, K Masterson3, R Welk, R Glas, K L Jahn, S Cook, J Barclay, J Finkelstein

1941248 *Changes in Compound Events under a CO2 Removal Scenario using CESM1:* **Y Shin**, K H Seo

1935567 *Compound Wildfire and Heatwave Events in the U.S. Under Climate Change:* **T R Dan**

1919746 *Compounding Effects of Climatic and Non-Climatic Events:* **A AghaKouchak**

1865052 *Global Emergence of Hot and Dry Compound Extremes and the Predictability of Mosquito Habitat Suitability in the CESM2-LE:* **A Dwyer**, E A Barnes, J W Hurrell

1903838 *Global Trends and Emerging Gaps in Multi-Hazard Flood Risk Research: A Bibliometric Synthesis (2010–2024):* **A N Geykli**, E Gul

1955069 *Modeling compound drought impacts on vegetation in the southeastern U.S. using vine copula:* **P Khedun**, S Dhamala, A K Mishra

1931385 *The Changing Characteristics of Extreme Heat Events and Their Effects:* **L Huning**, N Januario

1853825 *Unravelling Localized Hotspots and Spatiotemporal Patterns of Compound Dry and Hot Extremes in Maharashtra, India:* **S M Rajesh**, U Mohseni, A S

1920625 *When Day Meets Night: Unravelling the Hotspots of Compound Heat Stress in India:* **U Mohseni**, V R

249867

Drought risk in changing climate – diagnosis, modeling, and management *(joint with ED, GC, NH, SY)*

Conveners: **Chandra Rajulapati**, University of Manitoba; **Arpita Mondal**, Indian Institute of Technology Bombay; **Sudarshana Mukhopadhyay**, Scripps Institution of Oceanography

1970774 *Emerging Global Patterns of Persistent Drying: Unraveling the Roles of Climate Modes and Anthropogenic Forcing:* **A Samara**, R Seager, J E Smerdon

1912937 *A Data-Driven Framework for Streamflow Drought Typing and Driver Identification:* **C Bowers**, J D Smith, J C Hammond, H Essaid, J Marshall

1916559 *A drought reimagined: Projecting hydrologic shifts of a past drought under future conditions:* **C A Penn**, K Merriman, J D Smith, H Essaid

1961495 *A Global Probabilistic Framework for Meteorological Drought Risk Assessment Using Self-Calibrating PDSI and Stochastic Simulation:* **C Liang**, Z Flamig, J P Kossin, E J Kearns

1919747 *A Pan-European Water Table Depth Anomaly Dataset from 1950 to Present:* **Y Ma**, C Montzka, B S Naz, S J Kollet

1867037 *Accelerating Drought Vulnerability in India: Vegetation Water Stress Under Climate Change:* **S Tiwary**, A Mondal

1909927 *Anthropogenic Climate Change Intensifies Synchronous Droughts Across Indian Rivers:* **D S Chuphal**, V Mishra

1887828 *Aridification Distorts Drought Monitoring and Relief Efforts:* **Z Li**, R Seager, J E Smerdon, J S Mankin

1867504 *Aridity-based consistency evaluation of drought indices under climate change:* **F C Varghese**, S Mitra

1872594 *Assessing Reservoir Storage Impacts on Multi-Scale Drought Propagation Using an Upstream-Downstream Framework:* **A Gupta, PhD**, M K Jain, R P Pandey, D M Hannah, PhD

1955658 *Bivariate modeling of drought severity and duration in a warming climate using copula:* **P Khedun**, S Dhamala, K Bhardwaj, A K Mishra

1884801 *Climate-Induced Disparities in Drought Resilience Across the Divided Korean Peninsula in the Context of Socioeconomic Differences:* **W H Nam**

2001344 *Contrasting CESM and ECMWF for Predictive Modeling of Spatial Heterogeneity of Drought Indices Across Two U.S. Hydroclimates:* **N Choudhari**, Y F Elshorbany, B Jacob, J Collins

1904158 *Contrasting responses of terrestrial water fluxes to drought dominated by transpiration:* **Z He**, S Zhou

1908588 *Data Bottlenecks and Algorithmic Lag in AI for Droughts: A Review of 20-Years Worth of Trends:* **G Ascenso**, M Giuliani, J Pérez-Aracil, S Salcedo-Sanz, G Camps-Valls, C Bertini Dr, P Bonetti Dr, N Linscheid, M Merlo, M Á Fernández-Torres, G Palcic, M Reichstein, A Ficchì, A Toreti, A Castelletti, M Restelli, E Walt

1969709 *Decoding Drought Dynamics: A Multi-Method Intercomparison for Event Characterization Across Spatio-Temporal Scales:* **L Nguyen**, Q Li, M Ombadi

1963305 *Drought Assessment Using Spectral Remote Sensing Indices in the Central Rift Valley Lakes:* **M T Gedefa, MSc**

1899061 *ENSO-Modulated Escalation of Global Drought: How ENSO Drives Drought Occurrence and Severity:* **T N D Tran**, V Tran, A Arshad, B Goffin, S K Do, K H Tran, J B Eylander, J D Bolten, S Crisanti, V Y Ivanov, V Lakshmi

1903641 *Escalating Global Drought Hazard: Evidence from Onset to Rebound:* **T N D Tran**, V Tran, S K Do, J B Eylander, K H Tran, S Crisanti, J D Bolten, V Y Ivanov, V Lakshmi

1901413 *Evolution of Water Balance, Cost and Stress in the Maipo River Basin During the 21st Century, Chile.:* **M Puentes Nazal**, F Lambert, R Calvo-Gallardo

1851138 *Global Assessment of Compound Meteorological-Soil Moisture Droughts: Trends and Climate Mode Influences:* **S Marshall**, T N D Tran, V Lakshmi

1866870 *Global Droughts in an Interconnected World: A Network-Based Assessment of Regional Risk and Vulnerability:* **K J Duhaylungsod**, K H Ahn, M A Nayak

1902215 *Global Flash Drought Risk Under Climate Change: The Role of Definitions in Impact Assessments:* **F Ong'ondo**, M Zhao

1941236 *Historical and future changes of global soil moisture drought characteristics in CMIP6 models:* **A Wang**, X MA

1944382 *Historical Droughts over CONUS through the Lens of a Stationary Data-driven Stochastic Emulator:* **M Ghadamidehno**, S Kravtsov, C Peterson

1933232 *Hydroclimate Variability Influences on Drought Evolution: A Meteorological-Hydrological Analysis:* **X Zhang**, J Wu, G Wang, W Wu, D Zhang, T Lan

1936308 *Observed Decreases in Seasonal Drought across the Northeastern United States:* **J Winter**, J Wargo, E C Osterberg, J S Mankin

1950274 *Patterns and Trends of Drought Forms in the Southeastern United States:* **S A Lawal**, R Scheller, F Koch, J K Costanza

1997737 *Rainfall Signals and Drought Development and Recovery in the Nile Basin:* **M B Melesse**, Y Demissie

1952408 *Reconciling Climate Data with Individual Insights of Climate Variability in Uganda's Cattle Corridor. A New Strategy to Effective Adaptation:* **F Nalwanga**, J Nanteza, P I Mukwaya

1912663 *Soil moisture-atmosphere interactions intensifies the spatial propagation of drought:* **J Liang**, S Zhou

1931471 *Spatial and Temporal Drought Patterns Derived from Long-term High-Resolution Daily SPI Dataset Over CONUS Using Unsupervised Machine Learning Clustering Algorithms:* **O P Prat**, I Eldho, D Coates, S Wilkins, R Leeper, B R Nelson, M Shaw, S Ansari

1921797 *Spatial Assessment of Seasonal Hydrological Drought Risk in Northwestern Bangladesh and Their Implications:* **G Morsad**, M Salehin

1941782 *Spatiotemporal Evolution Characteristics of Meteorological Drought in the Yangtze River Basin from A Three-Dimensional Perspective:* **X Yang**, Y Yan, P Fu

1980083 *Spatiotemporal Modeling of Drought in the Texas Colorado River Basin, USA:* **P Bose**

1900452 *Spatiotemporal Propagations of Subseasonal Droughts over the Contiguous United States:* **S Kumar**, D Tian

1895814 *Still Dry After the Drought: Modeling Soil Moisture Recovery in the Colorado River Basin:* **F Hozven**, S Stevenson, C Pfleger, D E Touma, PhD, G Persad

1946537 *Streamflow Drought in CONUS, 1951-2024: Characteristics, Trends, and Human Influence:* **A Henny**, T Pavelsky

250193

Connecting Science and Communities: Co-Created and Integrated Approaches for Understanding and Addressing Water Hazards in a Shifting Hydroclimatic Landscape *(joint with A, GC, NH, SY)*

Conveners: **Emad Habib**, University of Louisiana at Lafayette; **Liz Skilton**, University of Louisiana at Lafayette; **Mohamed ElSaadani**, University of Louisiana at Lafayette; **Steven Burian**, University of Alabama; **Selena Hinojos**, Pennsylvania State University Main Campus

1962229 *Mapping the Forgotten Floods: Historical Urban Flood Events and Exposure Disparities in Jackson, Mississippi:* **M M H Chowdhury**, B Herbert

1980228 *Streamflow trends and extremes in Patagonia:* **S E Null**, L B Epele, N Oses, A Bushman, C Gray

1886790 *Structural Shifts in Future Drought Risk under Climate Change: A Multi-Dimensional Assessment Using the Integrated Drought Risk Index (IDR):* **J Ahn**, J Kim, M H Lee

1956551 *Sub-Seasonal Correlations Between Drought and Temperature Extremes:* **K Miller**, S Jurado, J H Matthes, J Marlon

1887973 *The role of reservoir storage and groundwater withdrawals on drought recovery and mitigation at seasonal-to-interannual time scales:* **S Arumugam**

1908761 *Tracking Drought Over Time from Remote Sensing Data: A Comparative Index-Based Study in Bundelkhand Region, India:* **H Sahu**, P K Garg, S Vijay

1930977 *Tropical Cyclones Unevenly Influence Soil Moisture Droughts:* **J Kam**, A A

1886411 *Understanding Flash Drought Dynamics with Surface-Root Zone Soil Moisture and Vegetation Impacts:* **M S I Khan**, Y Zhou, J Christian

1980061 *Understanding the Mechanisms Underlying Vegetation Response During the Early Stage of Flash Drought Development Based on CLM5:* **K Mohammadi**, J Teymoori, G Wang, K W Oleson, P E Thornton, M Thornton, S C Kao

1910548 *Unlocking the drought resilience potential of underutilized agroecological systems: A systematic review:* **D G Kim**, B Eichler-Löbermann, S Porembski, F Roda, C Ngosong

1889726 *Unraveling Drought Propagation Rates and Uncertainty Across Forested Biomes:* **L U C Vo**, L Huning

1978913 *The End of the Road: Present and Future Chronic Flood Risk Along Coastal Roadways and Impacts to Community Livability:* **R McCUNE**, K Anarde, A Sebastian, J P Collins, L E Grimley, E E Hamidi, M Hino, C Dietrich

1932207 *Aligning Earth Observations with Climate Perception: Evaluating Drought and Flood Identification Methods in Nepal's Chitwan Valley:* **T Bango**, N Choquette-Levy, S Redicker, D Ghimire, U Sharma

1886086 *Assessing Infrastructure Vulnerability and Evacuation Routes to Flooding Using Spatial Database Management: A Case Study of City of Mobile, Alabama:* **M M Haque**, W Shao, S Dhital, D Li

1865464 *Assessing Social Vulnerability and Land Use Change Interactions Across the Gulf Coast: A Spatiotemporal Analysis in Alabama, Louisiana, and Mississippi:* **A Tabassum**, W Shao

1958408 *Assessing the Climate Resilience of Rainwater Harvesting Systems (RWHS) in Southwest Coastal Bangladesh:* **M M Patwary**, S A Hasan, M Hasan, S Mukherjee, M R Ali, M F Talukder, D M A Islam

1891795 *Braiding Local, Indigenous, and Scientific Knowledge for Resilient Water Futures:* **C Schuster-Wallace**

1957222 *Co-Developing Community-Driven Tools to Improve Access to NOAA's National Water Model for Resilience Planning:* **I Garousi Nejad**, A Castronova, D Cowan, K Raub

1974864 *Co-Producing Knowledge for Equitable Climate Mitigation in Gulf Coast Communities:* **M Lindquist**, E Wills, A Osland

1924058 *Coastal Cascades in America: How Identifying Integrated Systems can Bridge Science and Stakeholder Needs:* **R Jiang**, M M Gierach, R Shah, K Luis

1988873 *Comparative Analysis of the Use of Local Knowledge in Climate Action Plans in the U.S.:* **D Lee**, M Van Maasakkers, R Skelton

1975742 *Comparison of 1D and 2D HEC-RAS for Dam Breach Analysis:* **V Merwade**, A Griggs, S Dey, D Wilson

1868555 *Democratizing Earth Science Data for Community-Based Water Hazard Assessment: A Co-Production Platform for Hydrologic Intelligence:* **S Bhattarai**, R Talchabhadel, S Bista, S Poudel, D Jones, S Terrett

1900148 *Developing a Composite Flood Vulnerability Index for Puerto Rico Using a GIS-based Multi-Criteria Decision-Making Approach:* **R Khanbilvardi**, E Osuide, T Lakhankar

1918798 *Disparities in the Identification of Vulnerable Communities Due to Design Storm Methods and Spatial Scale Selection: A Case Study in the Vermilion River Watershed, South Louisiana, USA:* **C Orgeron**, M ElSaadani, S Hinojos, E Habib, R Skelton

1883714 *Evaluating the Economic Impact of Flood Risk on Housing Prices in the U.S. Gulf Coast Using Spatial and Machine Learning Models:* **M Ceragene**, T Douthat, N Bushra, F Akhter

1901135 *Evaluating Two Decades of Volunteer-Led Water Quality Monitoring: Insights from the Cooperative Lakes Area Monitoring Project (CLAMP).:* **S K Taylor**, S Meerdink, M Skopec, L Holdt, D Heimdal, M Vigdal, J Shuttleworth

1899595 *Evaluation of Projected Changes in Daily Precipitation Frequency Estimates from CMIP6 Climate Models Across Three U.S. Gulf States:* **M Nasser**, E H Habib, M Morsy, E Habib

1952527 *Flood Risk Perception, Institutional Trust, and Lived Experience Shape Household Preparedness in Urban Coastal Communities:* **K Larson Mohr**, B F Sanders, D Houston, S Lindemann, J Niemann, J E Schubert, M C Sukop, E M Martin, S Wang, I Tavarez, K J Mach

1967358 *Flood risk reduction logics and politics in South Central Louisiana:* **S Domingue**, M Ruiz

1920192 *From National Social Vulnerability Index Tools to Place and Hazard-Relevant Indices: A Co-Produced Flood Hazards Social Vulnerability Index Across Southern Louisiana:* **S Hinojos**, E Habib, R Skelton

1948377 *From Projections to Planning: A Modular Framework for Climate-Smart Flood Risk Modeling Using R2D, BRAILS, and IN-CORE in Coastal Louisiana:* **N Bushra**, T Douthat, R B Mostafiz, F Akhter, M Ceragene

1949099 *From Scientific Experts to Applied Users and Everyone in Between: Implementing an Engagement Strategy for Modernizing NOAA's Probable Maximum Precipitation Estimates that Serves All Users:* **B Smith**, S Luce, K M Mahoney, E Mutkoski, J F England Jr, B McCormick, W Silva

1848667 *How do Californian farmers address climate resilience? Profiling narratives on climate change awareness, perceived impacts and adaptive capacity:* **S Ricart**, A Escriva-Bou, A Castelletti

2000216 *It's what you say AND how you say it: how effective communication improves flood response:* **T Fanara**

1963627 *Last Flood of a Lifetime: Causes and Consequences of the Exceptional 2020 Flood in the Peace-Athabasca Delta, Canada:* **J M Davis**, T Pavelsky, W Dolan, A M Gomez

1941052 *Living on the Waterfront: A Household Flood Vulnerability Assessment of Riverine Communities in Assam, India:* **P Borthakur**, K Goswami

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1939134 *Participatory Mapping in Guyana: An Inclusive Approach to the Co-Design and Exploration of Integrative Nature-Based Solutions:* **C Danaher**, L Kirkpatrick, A Norville, A Collins, O F Kasim, J F Adamowski, C A Madramootoo

1887315 *Predictor-Corrector Based Heterogenous Routing Model for Operational Forecasting:* **J Imran**, J F Jamal, H Chaudhry

1967314 *Selective Narratives, Persistent Risks: How Competing Stories Shape Flood Risk Management in Chiplun, India:* **A Borate**

1970486 *Student Coursework as Collaborative Science: Development of a Flood Modeling Course to Educate Future Engineers and Support Local Stakeholders:* **P J Ruess**, A Lima, D Veronez, D Cardona, Z Khalid, A Mullen, C Ferreira, L Nichols, A Fox, J L Kinter

1859997 *The role of models in community-engaged approaches to flood-risk mitigation:* **J Suckale**, K Serafin

1902531 *The Role of Participatory Science in Community Co-Production of Flood Risk Assessment in Michigan, USA:* **M Syrette**, W M Robertson, R W Lammers, D Kluver, J T Allen, B Raubenheimer

1931142 *Toward improved flood hazard mapping: Lessons from mountainous flood-prone settings:* **B C Wemple**, J Balerna, A B Prescott, D Baude, M I Morales Velazquez, K Underwood, R M Diehl, E M B Doran, N Zegre, R Nicholas, E Chase

1916043 *Understanding fluvial flood and environmental justice by using historical and current GIS-related data: A case study in Dayton, Ohio, USA:* **C Y Wu**, D Chase, M Hansen

249380
Hydrologic Extremes in South and Southeast Asia: Challenges and Opportunities *(joint with NH)*

Conveners: **Sanjib Sharma**, Howard University; **Sangam Shrestha**, Asian Institute of Technology; **Ganesh Ghimire**, Oak Ridge National Laboratory; **Jeeban Panthi**, Kansas State University, Biological and Agricultural Engineering Department; **Sunil Bista**, Jackson State University

1959873 *A Cloud-Based Framework for the Modeling and Prediction of Post-Wildfire Hydrologic Response in Diverse Catchments Across Nepal:* **B Khadka**, B S Thapa, P K Bhattarai, S Khanal

1945955 *A Refined Avulsion Risk Framework Using SWOT and Field Data:* **B Wang**, C Koppe

1850488 *Advancing Water Risk Assessment with Satellite Data and Flood Models in Data-Limited Regions:* **A Watanuki**, T Sayama, S Abe, Y Nakamura

1921639 *Assessing Agricultural Vulnerability to Extreme Floods in Bangladesh: An Integrated Modeling Approach:* **M N Kadir**, H Abdullah, M M H Oliver

1846269 *Assessing Climate Change Impacts on Hydrology of the Gandaki River Basin through Multi-Site SWAT Model Calibration.:* **S Lamichhane**, S Shrestha, S Khanal

1994163 *Assessment of Imputation Methods for Filling Gaps in Daily Meteorological Time Series:* **A Gautam**, H Adhikari, S Dangol, V P Pandey

1929873 *Understanding Hydrologic Variability and Extremes in Rhode Island Through Community Science:* **S Levin**, K M Cobb, T Di Lorenzo, A Goblick, S Preira, B Jaswelll, I Yang, C M Leonard, E Garcia, J Delgado, L Urena Jaquez, A Pereira, X K Wang, L Bryce

1957781 *What areas of Louisiana have the highest and lowest risks to marginal changes in flood depth: A sensitivity analysis of household damages based on flood depth and continuous return periods for Louisiana's 64 Parishes:* **F Akhter**, N Bushra, T Douthat, M Ceragene, M A Rahim, C J Friedland, R B Mostafiz

1968659 *Who is to blame? The normative influences on blame in the wake of extreme hydroclimatic events:* **M Majszak**, O Wani

1899824 *"What we really need is..." A framework for cross-institutional partnership to co-create community-scale tools for enhancing capacity for flood resilience in Michigan watersheds.:* **W M Robertson**, R W Lammers, D Kluver, J T Allen, M Syrette, W J Beasley

1973802 *Attribution of Contemporary Streamflow Variability to Climate, Dams and Land Cover Change in the Irrawaddy River, Southeast Asia:* **S R Phy**, M Arias, E Lee, S Jayasinghe, M Laverde-Barajas, R D Koster

1930638 *Climate-Driven Landslide Susceptibility and Population Exposure Modeling in the Nepal Himalaya Using Machine Learning Tool and CMIP6 Scenarios:* **T R Bhattarai**, N P Bhandary, K Pandit

1992716 *Dependence of Ganga Basin Rainfall on Evaporative Moisture Fluxes and Transport from the Bay of Bengal:* **R Kumar**

1915529 *Evaluating the Applicability of SWOT and SWORD for Nepal's Water Monitoring: Building a Scalable National Database:* **B Dahal**, S Bhattarai, P K Bhattarai, R Talchabhadel

1918916 *Evaluating the Utility of CORDEX Regional Climate Models for Climate Impact Studies in the Mekong River Basin.:* **R Shah**, Y Tsai, J L Sabo

1941092 *Flood Risk Assessment of Temples in Bangkok Metropolitan Area Based on Modified Elevation Data and Satellite-based Inundation Data:* **M Sakabe**, K Tsuzuki, Y Kawamura, T Tebakari

1870371 *From Clouds to Contaminants: Episodic Hydrochemical Perturbations Driven by Monsoonal Extremes in the Brahmaputra River Basin:* **S Kumar**, M Manga, A M Nair

1878009 *Future Hydro-Meteorological Responses in the Barak River Basin under CMIP6 Ensemble Scenarios:* **M Turjo**, M H Nahian

1848074 *Future Hydropower Variability in Himalayan Snow-Fed and Spring-Fed Rivers under Climate and Land Use Change Uncertainty:* **P K Bhattarai**, N Devkota, PhD scholar, S Lamichhane

1883981 *Future Projections of Flood Hazards in the Karnali River Basin Using LSTM-HEC-RAS Modeling:* **H Lakhe**, S Shrestha, R Talchabhadel

1947174 *Hillslope Hydrological Extremes under Changing Monsoon Patterns and Land Use Dynamics:* **D Roy**, J Indu

1990982 *Indicator-Based Assessment of Disaster Risk Reduction and Community Resilience in Noakhali and Surrounding Districts of Southeast Bangladesh:* **M M Hasan Saikot**

1991756 *Integrating hydrologic and climate modeling in urban water supply and sanitation systems resilience assessment frameworks: A case study in Bangkok, Thailand:* **M A Ancheta**, S Shrestha, T Koottatep, M S Shanmugam

1910378 *Mapping Climate-Sensitive Zones in the Brahmaputra Basin: A Historical and Future Assessment Using High-Resolution Observations and CMIP6 Projections:* **H M**, S A Kartha

1913827 *Precipitation Temporal Disaggregation for Event-Based Hydrological Modeling in the Kathmandu Watershed, Nepal:* **R Talchabhadel**, S Bhattarai, N R Pradhan

252712
New Developments and Future Directions in Community Water Resources Modeling – Synergy at the Interface of Process Understanding, Artificial Intelligence, Computer Science, Operations, and Decision Making

Conveners: **Steven Burian**, University of Alabama; **Martyn Clark**, National Center for Atmospheric Research; **Katie van Werkhoven**, Research Triangle Institute; **Jordan Read**, Consortium of Universities for the Advancement of Hydrologic Science, Inc.; **Louise Arnal**, European Centre for Medium-Range Weather Forecasts (ECWMF)

1949014 *A BMI-Compliant Python Framework for Hillslope-Link Hydrologic Modeling:* **R Molina**, H Dhital, B C Seo, PhD, F Quintero

1982549 *A Decade of Impact: The Water Prediction Innovators Summer Institute:* **S Cohen**, E Clark, J S Read, J Masterman, L Nations

1909356 *A Generalized KGE Metric for Improved Training (information Extraction) and Evaluation of Dynamical Systems Models:* **M Jawad**, H Gupta, A Behrangi, G Y Niu

1905509 *Projecting Urban Flood Risks in a Changing Climate: A Modeling Framework for Dhaka, Bangladesh:* **F Akther**, S B Murshed, S Alam

1982228 *Realistic Flood Modelling Framework for Kathmandu Valley in the Face of Rapid Urbanization and Changing Climate:* **K R Regmi**, I Joshi

1877516 *Shifting Precipitation Extremes in Nepal: Diverging Patterns and Emerging Climate Risks:* **B Pokharel**

1955528 *Spatiotemporal analysis of monsoon characteristics in Nepal under future climate scenarios:* **D Kuinkel**, S Kuikel, H K Paudel, B Pokharel

1916637 *Spatiotemporal Assessment of Urban Heat Island and Heatwave Dynamics in Densely Populated Nepalese Cities: Evaluating Nature-Based Cooling Strategies:* **R Talchabhadel**, S Bhattarai, A K Prajapati, B Karn, B Bhattarai, R Yadav, P K Bhattarai

1853003 *Uncovering Non-Stationary Climatic Extremes in a Tropical River Basin of Peninsular India: Trends and Variations:* **S Dixit**, K Pandey, R Tripathi

1956722 *Urban Flood Risk Assessment in Hanumante Watershed: A Multi-Criteria Decision Approach with Real Scenario Validation:* **S Duwal**, R Prajapati, R Talchabhadel, T R R Adhikari

1983374 *A Modular High-Performance Computing Framework for Forecast Skill Assessment of Cyanobacterial Harmful Algal Bloom Prediction Systems:* **N Beckage**, P J Clemins, P D Oikonomou, R Bano, S Turnbull, A Zia

1967332 *A Path Forward for Integrated Hydro-Terrestrial Modeling:* **K Skalak**, D P Lesmes, N Voisin, P M Reed, Y Fan, Y Li, A L Dugger, T Schneider, J Marshall

1928016 *A Tiled Calibration Framework for Hydrological Models Using Land Use and Land Cover Variability:* **M S Alam**, S A Koriche, P La Follette, A J Khattak, F L Ogden, S Naser Neisary, M Kumar, S J Burian

1974152 *Accelerating Coastal Modeling in the Cloud: Lessons from the NOAA/ NOS Coastal Modeling Cloud Sandbox:* **K M Moore Powell**, T C Vance, M Lalime, Z Willis, M Wengren, M Alvis, P Tripp, B Vanderplow, J Ducker

1937433 *Adaptive Reservoir Operations in a Snow-Dominated Basin Using Direct Policy Search:* **A Moiz**, K Semmendinger Raney, J Kalansky, T Brandt, M Pan, R Hartman, T Dixon

1959725 *Advancements in Coastal Community Modeling on the Cloud: Development and Implementation of the National Water Model Total Water Level Retrospective Run:* **J Ducker**, T Flowers, Z Willis, M Alvis, K Moore Powell, M Ho, M Lalime, T C Vance, P Tripp, M Wengren, B Vanderplow, B A Cosgrove, C George, J Zhang

1975543 *Advancing Hydrological Modeling: CIROH's NextGen In A Box (NGIAB) and Enhanced Tools for Community-Driven Research:* **B Duvvuri**, A Patel, J Halgren, Z Willis, B Lee, J Laser, MA, M Singh, J Cunningham, E G Romero Bustamante, S Lamont, N Minor, T Patel, S J Burian

1953146 *Advancing t-route Toward Flexible and Scalable Flow Routing to Support Open Streamflow Data Access:* **S Lama**, J Cunningham, J Halgren, Q Lee, B Alexander

1965976 *Advancing the National Water Model from Research to Operations through Strategic Partnerships and Community Modeling:* **T Flowers**, B A Cosgrove

2001651 *AI-Assisted Voice Enabled Computing Framework for Hydrological Analysis:* **C Erazo**, I Demir

1894809 *AI-enhanced Gamification for Flood Resilience Literacy:* **H Markin**, Q Duan, Y Yang, Y You, A Ulumben

1920023 *An Intercomparison of Hydrologic Model Performance for Small Stream Flooding Prediction Using NOAA-OWP's NextGen Framework:* **H Davis**, S M Reed

1966894 *Are AI/DL models' performance in streamflow simulation comparable to the skills of operational hydrologic model in River Forecast Centers' real-world setting?:* **H Yue**, J Zhang, W P Miller, J Lhotak, S A Baker, T Yang

1928964 *Assessing AORC Gridded Forcing Datasets for Streamflow Prediction:* **M M Fathi**, M Kumar, K A Salvi, S J Burian

1879876 *Assessing the use of Physics and AI-Driven Precipitation Forecasts for Streamflow Prediction Using the NextGen In A Box (NGIAB) National Water Model:* **J Bravo**, M Temimi

1893783 *Assessment of Channel Routing Methods in the NextGen National Water Model:* **M Saiduzzaman**, B C Seo, PhD, I Demir, D Kim

1922128 *Attribution of Compound Flooding Drivers Using the Coupled NextGen NWM and SCHISM Model and SHAP-based Explainable AI: A Case Study of Hurricane Matthew in Winyah Bay:* **H Wang**, S Bao, L J Pietrafesa

1994232 *Automating Model Configuration for NexGen with the Model Setup Workflow Manager:* **J Wade**, S Greene

2000794 *Building a Community Testbed for Hydrologic Prediction: Examples from CIROH Benchmarking Protocols:* **J Sturtevant**, A Wood, E Ritchie, T S Hogue, K van Werkhoven, M Denno

1971599 *CIROH DocuHub and Portal: Knowledge Management System for Collaborative Water Resources Research:* **M Singh**, A Patel, E G Romero Bustamante, N Minor, J Halgren, D P Ames, S Cohen, S J Burian

1969148 *Cloud infrastructure for NextGen Water Resources Modeling : CIROH's R2OHC Cloud Platform:* **H Vemula**, A Patel, J Halgren, B Lee, M Singh, N Minor, P Bangalore, J Carver, S J Burian

1893241 *Decision Points and Implications of Hydrologic Model Benchmarking Approaches:* **S Foks**, T O Hodson, K Doore, K Kolb, A Laws, T M Over, C A Penn, H Podzorski, F Redoloza, C Simeone, L Staub, R J Viger, J Marshall

1898190 *Dependance of Peak Discharge in Non-Cohesive Dams on Soil Properties:* **A Mashreghi**, M Torkomany, H Chaudhry

1963191 *Enabling Community Research with the Next Generation National Water Modeling Framework on through Streamlined Workflows:* **A Nassar**, D G Tarboton, F Baig, A Patel, A Castronova, J Halgren, J Cunningham, I Garousi Nejad, B Lee, B Duvvuri

1961603 *Evaluating Machine Learning Hydrologic Modeling under Future Climate Scenarios:* **M Maharjan**, C J Gleason, B Nijssen, C Brown

1970872 *Evaluating the Usability of Flood Inundation Maps Through Experimental Testing:* **M A Kenney, PhD**, S Kandel, S Sainjoo, D R Vallee, K Abshire

2000305 *Filling the Gaps: Enhancing Climate Data Completeness in American Samoa Using Gradient Boosting Machine Learning Models:* **L McLatchy**, C K Shuler, C TeBeest, R Johnson, W Hua-Hsien

1974663 *From Calibration to Prediction: Enabling Large-Scale Hydrologic Modeling through Formulation and Parameter Regionalization in NextGen:* **Y Liu**, M Deshotel, J Wade, K Larkin, S Lawson, M Woodbury, E Welles, R Barnhill

1980985 *High-Performance Computing Infrastructure for NextGen Water Resources Modeling: CIROH's R2OHC HPC Platform:* **T Patel**, A Patel, J Halgren, N Minor, J Carver, P Bangalore, S J Burian

2002389 *How AI Partnerships Work in Hydrologic Simulation?:* **V Samadi**, S Tabas, M Saberian, A Neupane, N Zafarmomen, K Panthi

2002299 *HydroBlox: AI-Assisted Visual Programming Framework for Enhanced Scientific Reproducibility in Hydrology:* **C Erazo**, I Demir

1897276 *Hydrologic Process Synthesis across Diverse Landscapes 1: Hierarchical Classification of Hydrologic Provinces across North America:* **W Knoben**, H K McMillan, Y Fan, P Wagener, I Garousi Nejad, J Masterman, J S Read, S Carney, K van Werkhoven, M P Clark

1899715 *Hydrologic Process Synthesis across Diverse Landscapes 2: Hierarchical Development of Perceptual Models across North America:* **H K McMillan**, W Knoben, Y Fan, P Wagener, I Garousi Nejad, J Masterman, J S Read, S Carney, K van Werkhoven, M P Clark

1976989 *Hydrologic Process Synthesis across Diverse Landscapes 3: Operational Forecasting Perspectives to Inform Perceptual Model Design across North America:* **S Carney**, K van Werkhoven, W Knoben, H K McMillan, Y Fan, M P Clark, P Wagener, I Garousi Nejad, J Masterman, J S Read

1854516 *HydroSensorNet: An Open-Source Python Package for Optimal Hydrological Monitoring Network Design:* **J Oh**, M D Bartos

1964579 *Improving Streamflow Predictions in Reservoir-Influenced Basins Using Machine Learning:* **P Banjara**, C Brown, B Francois, C J Gleason, K Andreadis

1963531 *Including preferential flow in the Next Generation Water Resources Modeling Framework:* **P La Follette**, A J Khattak, F L Ogden, Z P McEachran, N J Frazier, A A Raney II, S Horvath, S A Koriche, M S Alam, J L Nieber

1892666 *Investigation of Spatial Scale Effects on Hydrologic Modeling Based on the Hillslope Link Model:* **H Dhital**, B C Seo, PhD, U Kim, F Quintero, R Molina

1893590 *Large-Scale Retrospective Streamflow Performance Comparison of the National Water Model v3.0 and v2.1 Across CONUS:* **A Ojha**, H Yue, T Yang

1918622 *Multi-Objective Assessment of the Multi-Model Performance Within the Next Generation Water Resources Modeling (NextGen) Framework:* **X Feng**, F L Ogden

1979828 *Next Generation AI-Enabled Precipitation Estimate Workflows for River Forecast Centers:* **P J Clemins**, S Wshah, N B Beckage

248646
Recent Advances in Large-Scale Hydrologic and Flood Modeling: Assessing and Predicting Extreme Floods *(joint with NH)*

Conveners: **Sudershan Gangrade**, Oak Ridge National Laboratory; **Ganesh Ghimire**, Oak Ridge National Laboratory; **Shih-Chieh Kao**, Oak Ridge National Laboratory; **Mario Morales-Hernandez**, Oak Ridge National Laboratory

1846177 *A Deep Learning-Based Framework for Automated Characterization of Probability Distribution Tails:* **S Kaur**, S R Chavan

1957732 *A hierarchical Bayesian approach to understanding recent flash flood trends in the USA:* **F Yavari**, M Abdelkader, H Moradkhani, N Devineni

1957657 *NextGen In A Box (NGIAB) and DataStream Visualizer: A Containerized Web Application for Interactive Geospatial and Temporal Visualization and Analysis of Hydrologic Model Outputs:* **E G Romero Bustamante**, A Patel, J Halgren, M Singh, S J Burian, Z Wills, J Laser, MA, S Lamont, J Cunningham, T Patel, N J Frazier, N Minor, B Lee, N R Swain, D P Ames

1912965 *NextGen Research DataStream: Community Contributions Towards Improved Hydrologic Predictions:* **Z Wills**, J Laser, MA, N Frazier, A Patel, J Halgren

1930778 *Optimizing Hydrological Predictions in the NextGen Framework: A Systematic Evaluation of Hydrofabric and HRU Discretization:* **S A Koriche**, M S Alam, F L Ogden, A J Khattak, M Kumar, J Cunningham, P La Follette, H Liu, J Halgren, S J Burian

1855720 *The Coastal Coupling Community of Practice: Contributing to the Modeling Community:* **R A Luettich Jr**, R Atkins, C George, D Kidwell, C Massey, H Moftakhari, M L Palmsten, C Urizar, D R Vallee, D Welch

1882362 *Toward Improving Short to Medium-Range Ensemble Streamflow Forecasting: Dissective Analysis of Predictive Skill for the Hydrologic Ensemble Forecast Service (HEFS):* **S Kim**, D J Seo

1864536 *Towards Representing Pluvial Flooding within NOAA's NextGen Modeling Framework:* **Y Bhattarai**, S Dhital, S Sauda, M Abdelkader, J M Frame, M Temimi

1994042 *Unifying Advances in Differentiable Modeling for High-Performance Operational Streamflow Forecasting:* **L Lonzarich**, Y Song, T Bindas, F Rahmani, J Liu, A Behroozi, D Aboelyazeed, C Shen

1983244 *A Novel Global Flood Modeling Framework Powered by Cloud-Scalable HEC-RAS 2D Engine and Advanced Climate Forcings:* **J Kim**, M Maneta, M Gomez, A Al, M Kim, B Adhikari, M Lammers, M Novo Villar, H Hsieh, K Bryant, A Pouyaei, C Liang, T L Hsieh, Z Flamig, M Amodeo, E J Kearns

1968937 *A Scalable Approach for Maximizing Global Flood Model Resolution:* **H Hampson**, E Perry, J Pucciarelli, C McNicholas, M Woelfle, J Rogers

1976844 *Advances in Continental-Scale Flood Inundation Mapping and Prediction:* **C Pruitt**

1993766 *Advancing NOAA's Near Real Time Flood Inundation Mapping Capabilities with Ripple1D and Flows2FIM:* **A R Siddiqui**, M Deshotel, S Lawson, S Lawler, B Bates, R Gonzalez-Pita

1971403 *An Attention-Guided Deep Learning Model for High-Resolution Flood Inundation Prediction – A Proof of Concept:* **F Nur**, S Gangrade, G R Ghimire, S C Kao, A J Kalyanapu

1954265 *Application of a Real-Time Data Assimilation System to Enhance Flood Forecasts in Japan:* **Y LIU**, K Yoshimura, M Revel, Y Zhu

1910179 *Assessing Culvert Vulnerability to Floods and Flood induced Erosion and Debris Flow:* **S Mukherjee**, D M Amatya, S S Panda, M Dobre, R Lew, A M Jalowska, J Grace

1981094 *Beyond the Rain: A Scalable Framework for Urban Flood Risk Modeling and the Role of Drainage Infrastructure under Intensifying Storm Events:* **K Boukin**, K M Strzepek, R Kirchain

1995309 *Compound Flood Hazard Modeling: A Comparative Study of CPU-Based and GPU-Accelerated Hydrodynamic Models for Emergency Response:* **A Khalid**, P Panakkal, M Narayanaswamy

1940874 *Control-to-Inundation Neural Network: A Surrogate Model for Real-Time Response to Distributed Control in Urban Flooding:* **B WANG**, X Cao, H Qin

1863122 *Detecting Spatially Consistent Trends in Sub-Hourly Extreme Rainfall Using a Neighborhood-Based Method:* **N Kafle**, N Peleg, C I Meier

1912598 *Enhancing Flood Sustainability in Florida through Explainable AI-Based Susceptibility Mapping:* **S M Biazar Seighalani**, G Golmohammadi, K Mohammadi Dr, B Voram, G S Tiwana, S Shaghaghi Khajehdehi, N Ghimire

1926538 *Enhancing Fluvial Flood Inundation Mapping Through Stochastic Rating Curve Representation:* **N Soheili**, S Balachandran, M Erfani, M Erfani

1994191 *Enhancing NOAA's National Flood Inundation Mapping Evaluation System with Scalable Container Orchestration:* **D B Lee**, A R Siddiqui, F Aristizabal, K Spurrier, R Gonzalez-Pita, B Bates

1895931 *Enhancing Riverine Flood Inundation Predictions with Artificial Intelligence:* **Y Bhattarai**, G R Ghimire, R Talchabhadel, S Sharma

1965055 *Entangled Currents: A First Step Towards Quantum Routing of Shallow Water Flows:* **N Kandel**, H Cho

1889609 *Event-based flood risk assessment based on a large ensemble climate dataset under climate change: A case study in the Tokachi river basin:* **T Ito**, H Okachi, S Hasegawa, T Hoshino, T Yamada

1852383 *Flood Impacts Across Scales: A tale of a Multi-Method Approach:* **G Villarini**, R Amorim, M Binjolkar, H Kim, T Kim, R Amorim, S Maebius, A Michalek, T Pu

1877684 *Flood Inundation Mapping for Levee Breach Scenarios Using a Deep Learning Surrogate Model:* **M K Hong**, Y Kim

1850803 *Future Flood Characteristics in the Western United States:* **F Felfelani**, A J Newman, A Wood, A Stone, K Holman, S Hartke, K Walker

1975049 *Global Sensitivity Analysis of Hydrodynamic Urban Flood Inundation Mapping and Modeling in a Coastal River Basin in the South United States:* **R Saleh Alipour**, J Song, S Gangrade, J Halgren, S J Burian

1982762 *HEC-RAS 2D Emulation Using Sparse Gaussian Process Regression – Benchmarking New Approaches to Reduce the Computational Demand of Probabilistic Flood Modeling.:* **S Lawson**, R Passarelli, R Cyriac, M Ghaneeizad, S Jain, M Pakdehi, J Elsey, D Wilusz, M Mampara, S Kalikivaya, D Rosa, H Smith

1909533 *High-Resolution Climate-Hydrodynamic Modeling Considering Wetland Functions for Extreme Flood Events in the Passaic River Basin:* **S Jamrussri**, T Tanaka, K Ishida, Y C E Yang

1983824 *High-Resolution Flash Flood Forecasting in New Jersey: Bridging Prediction and Preparedness:* **E I Nikolopoulos**, S Rasiya Koya, Y Wang, Y Wu, J Gong

1935028 *High-Resolution Flood Inundation Mapping of U.S. Tribal Nations Under Current and Future Conditions: The Case of the Santee Sioux Nation:* **T Pu**, G Villarini, R Amorim, D Li, S Gangrade, M Durr, B Janssen

1911782 *High-resolution flood inundation maps across the contiguous United States under historical and pseudo-global warming scenarios:* **A Michalek**, R Amorim, D Li, M Binjolkar, T Pu, G Villarini, J Done, S Gangrade

1922005 *High-Resolution Hydrodynamic Reconstruction of Hurricane Helene (2024) Flooding in the Southeastern United States:* **S Gangrade**, S C Kao, G R Ghimire, M Morales-Hernandez, M Kelleher, Y Kim, M Khanam, M R Norman

1976409 *Impact of Compound Flooding under Climate Extremes: A Case Study of East Boston:* **S Shokrana**, K Boukin, K M Strzepek

1920657 *Probabilistic Dam Break Flood Risk Mapping Using a Copula-Based Framework and GPU-Accelerated Hydrodynamic Model:* **S Balachandran**, S Gangrade, G R Ghimire, S C Kao, J Imran

1933727 *Probabilistic Flood Mapping for Idaho Under Precipitation Uncertainty Using a Computationally Efficient 2D Hydrodynamic Model:* **T Huang**, B Daniel, X Li

1927683 *Quantification of the Role of Internal Variability in Flood Inundation during Hurricane Ida:* **R Amorim**, G Villarini, A Michalek, S Menemenlis, G A Vecchi

1875259 *Rapid flood mapping using low complexity terrain-based techniques:* **S Bista**, S Poudel, R Talchabhadel

1876719 *Real-time Flood Extent Forecasting Using an Encoder-decoder ConvLSTM Integrated with Data Assimilation:* **Y Li**, H Lee, T L T Du, A Rostami, H H Wan

1976129 *Solutions of Diffusion Wave Equation Using Meshless Radial Basis Function Collocation Method for Flood Routing:* **I Karakan**, J F Jamal, H Chaudhry, J Imran

1998791 *Spatiotemporal Assessment of Flood Susceptibility Using Remote Sensing Indices and Random Forest Classification in Sunamganj District, Bangladesh:* **M R Hasan**, S Paul, F Sultana, S N Shara, S R Shuvo, H Saha

1936135 *Sub-Kilometer Simulation of Pluvial and Fluvial Flooding Events Using E3SM-RDycore:* **G Bisht**, D Xu, J Johnson, J Brown, M Knepley, M F Adams, D Feng, D Hao, J Wolfe, Z Tan, M Kumar, P Bogenschutz, J Zhang

249767
Recent Advances in Remote Sensing and Modeling of Flood Inundation

Conveners: **Sagy Cohen**, University of Alabama; **Lori Schultz**, University of Alabama in Huntsville; **Arjen Haag**, Organization Not Listed; **Anupal Baruah**, University of Alabama

1865271 *A Comparative Analysis of Operational Multi-Method Flood Inundation Mapping: Quantifying Fidelity–Accuracy Tradeoffs:* **M S Sakib**, M Mowafy, H Wang, F Maghsoodifar, S Cohen, Y Tsang, D F Muñoz, P Ray, F Lei, H Moftakhari

1898079 *A Framework for Large-scale Flood Inundation Mapping and Evaluation over an Extensive Benchmark Database.:* **D Devi**, A Baruah, S Dhital, D Munasinghe, D Tian, S Cohen, Y Chen

1927783 *A Next-generation Flood Mapping System (RAPID v2.0): the 1-dimentional PDF Matching Outperforms 0-dimensional Threshold Comparison:* **X Shen**, M Xu, Q Zhang, W C Straka, J Torres, M Murphy

1931182 *Advanced Flood Detection Using Dual-PolSAR Decomposition and AI-Based Classification Models:* **S M Bateni**, S Kim, J Lee, S Janizadeh, D Kim, C Jun

1968375 *Benchmark Flood Inundation Mapping Using RGB Aerial Imagery and a Sub-Matrix Convolutional Neural Network:* **S Seyvani**, D Munasinghe, P Nikrou, S Cohen

1874149 *Bridging Return Period Gaps in Flood Inundation Mapping Using a Hybrid Deep Learning Approach:* **F Maghsoodifar**, M S Sakib, M Mowafy, H Wang, S Cohen, Y Tsang, H Moftakhari, D F Muñoz, P Ray, F Lei

1943723 *Capturing Peak Flood Conditions with Satellite Imagery:* **A Anders**, D Sidiropoulou-Velidou, J Ardila, A Joshi, K Jensen

1865572 *Coastal Building Height Models from High-Resolution SAR Stereo Images for Hurricane Impact Modeling and Assessment:* **S Beninati**, S Frasier

1922664 *Tiger-HLM: A GPU-Accelerated Distributed Hydrologic Model:* **M Binjolkar**, A Michalek, R Amorim, D Li, S Maebius, T Pu, A Biswas, S Ethier, G Villarini

1880033 *Toward Robust Large-scale Evaluations of Flood Inundation Predictions:* **S Cohen**, D Devi, D Munasinghe, A Baruah, D Tian, S Dhital, H Liu

1969616 *Transferable Flood Inundation Mapping Using Deep Learning Trained on LISFLOOD-FP Outputs and Synthetic Hydrographs:* **P Nikrou**, S Cohen

1870446 *Commission Error Analysis and Correction in Remote Sensing Flood Maps Using an Object-Oriented, Hydrologically Informed Approach:* **D Tian**, H Liu, S Cohen, L Wang

1958792 *Deep learning for flood mapping using spatial, spectral, and temporal features:* **J Caineta**, M G Tulbure

1849233 *Deep learning to improve satellite-based flood mapping: a better VIIRS algorithm and insights using Geospatial Foundation Models on Planetscope, Sentinel-1, and Sentinel-2:* **B Tellman**, S Kaushik, PhD, A Saunders, Z Zhang, F S Policelli, D A Slayback, J Giezendanner, R Mukherjee, R Zhang

1848715 *DeepSARFlood: An Automated Platform for SAR-based Flood Inundation Mapping using Vision Transformers and Development of a Comprehensive National Database:* **M Saharia**, N Sharma, S S, M Saquib

1892978 *Enhanced Flood Mapping Through Coherent and Incoherent Change Detection: A Sentinel-1 SAR Time-Series Analysis:* **M Motagh**, S Hotaki, M Haghighi

1943281 *Enhanced Framework for Urban Flood Mapping: Fusion of Synthetic Aperture Radar Flood Extents with Auxiliary Data:* **A Khadka**

1949577 *Enhancing Large-Scale Flood Inundation Mapping through Process-Based Classification:* **D Baude**, R M Diehl, I U Haq, K Underwood, A B Prescott, B Wemple, B A A Lane, C B Phillips

1875760 *Enhancing River Channel Geometry Estimation for Bankfull Conditions in Iowa Using Machine Learning:* **M Rojas**, D Gilles, N Young

1930301 *Evaluating the Impact of Streamflow Nonstationarity on Flood Inundation Using Remote Sensing and Deep Learning:* **J Joseph**, N K D, V Merwade

1927264 *Evidence of chronic flooding from a global 10-meter flood-occurrence dataset:* **R Mukherjee**, T Chakraborty

1972276 *Examining Spatial Consistency of the Synthetic Rating Curves and Improvement in the Calibration Procedure:* **R Jamshidi**, E Beighley, K Pieper, C N Jones

1965765 *FastPLN: High-resolution GPU-accelerated Rapid Flood Mapping at Scale:* **B Alexander**, J Song, J Halgren

1973988 *Flood extent enhancement using terrain information for the OPERA Harmonized Landsat Sentinel-2 Dynamic Surface Water eXtent (DSWx-HLS) products:* **S K Do**, S Cohen, J B Eylander, S Crisanti, V Lakshmi

1910806 *Flood Hazard Mapping in A Selected Reach of Teesta River in India Using 2-D Hydrodynamic Model BRAHMA-FM:* **A K Sarma**, J Kashyap, A Handique, A Baruah, S Kalyani, K Kalita, A Kalita, R Choudhury

1942635 *Flood Mapping from GNSS Reflectometry: A CYGNSS-Based Deep Learning Product for Monitoring Inundation Events:* **R Alarcia Perez**, P T Setti Jr, S Tabibi

1887634 *FSM-GEE: An Open-Source Flood Susceptibility Mapping Toolkit:* **L Nguyen**, G Lee

1894751 *GEE-FMF: A Google Earth Engine-Based Machine Learning Framework for Efficient Regional Flood Mapping:* **S Zand**, H Moftakhari, E E Hamidi, H Moradkhani

1949588 *Generation of High-Resolution Flood Inundation Maps from Airborne Imagery Using Supervised Machine Learning:* **D Munasinghe**, S Cohen, D Tian, H Liu, A Baruah, D Devi

1877335 *Improving Flood Inundation Mapping Using SAR Imagery and Deep Learning Models:* **M K Hong**, J Seo, H Seo, Y Kim

2002747 *Improving HAND-Based Water Depth Estimates with Machine Learning-Derived SAR Water Extent Maps:* **M Jo**, A Albayrak, B Osmanoglu, F J Meyer, L A Schultz

2001275 *Improving NOAA-OWP HAND Flood Depth Estimation with Machine Learning-Based Surrogate Modeling:* **P Sidhu**, D Devi, A Baruah, S Cohen

1957497 *Integrating Diverse Flood Inundation Datasets into a Harmonized Database and Visualization Framework for Enhanced Decision Support:* **P Wagle**, J Nelson, R Hales, L Rosas, I Demir

1941584 *Integrating High-Temporal X-band SAR Imagery with HEC-RAS 2D Simulations for Enhanced Flood Analysis:* **Y Cho, PhD**, R Tan, J Noh

1991358 *Integrating Hydraulic Models and Sentinel-1 Observation for Flood Mapping in North Carolina:* **Y Li**, E Beighley, K Pieper, C N Jones

2003743 *Investigating the Usefulness of Terrain-Based Flood Mapping for Probabilistic Flood Inundation:* **S Henao Gomez**, H J Vergara, PhD, M Abdelkader, C Szpilka, K M Dresback

1961803 *Multimodal Post-Flood Water Extent Mapping With SAR and Incomplete Multispectral Data Using a Spatially Masked Adaptive Gated Network:* **H Lee**, W Li

1876583 *Operational flood inundation detection from Sentinel-1 GRD time series using Bayesian change point analysis:* **N Tsutsumida**

1857175 *Physics-guided super-resolution downscaling for national urban FIM:* **S Bryant**

1925808 *Predicting the Accuracy of Flood Inundation Forecasts from Terrain Variability:* **J Castejon Villalobos**, A Lee, N Patterson, R M Diehl, B A A Lane, C B Phillips

1914776 *Probabilistic High-Resolution Flood Maps from Ensembles of Downscaled Compound Flood Inundation in Southeast Texas:* **M K Wang**, P Passalacqua, E Coon, S S Rathore, G Perez

1989666 *SAR-Based Flood Inundation and Crop Damage Mapping in the 2024 Feni River Basin: Overcoming Optical and Ground Truthing Challenges with DEM Integration and Remote Sensing Proxies:* **M M Hasan Saikot**, M I Islam, S M S Sian, B Roy, A S Forhadun Nabi

1893968 *Satellite-Based Flood Inundation Mapping Using Sentinel-1 and Land Cover Data: A Case Study of Hurricane Florence:* **Y J Choung**, S J Burian, D R Vallee

1954354 *Seeing the Flood: Sensor Accuracy across Landscapes:* **E Vail**, M G Tulbure, R Composto, V Tiwari, J Caineta, M Gaines

1922081 *Sensitivity of Terrain-based Flood Inundation Model (OWP HAND-FIM) Predictions to Channel Geometry: Insights from Bathymetric Adjustments of Rating Curves:* **R Zarrabi**, S Cohen, C Pruitt, A Baruah, G Petrochenkov, R McDermott

1969582 *Stage-Specific Intercomparison of Five Flood Inundation Models Across the Rising and Falling Limbs of a Flood Event:* **P Nikrou**, S Seyvani, S Gangrade, J L Gutenson, D Tian, A Baruah, M L Follum, S C Kao, S Cohen

1894564 *Urban Flood Mapping: Are Satellite- and Process-Based Methods Aligned?:* **R Composto**, M G Tulbure, M Gaines, V Tiwari, J Caineta, E Vail

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Remote Sensing of Rivers, Lakes, Reservoirs, and Wetlands *(joint with EP, G, GC, NH)*

Conveners: **Ethan Shavers**, Organization Not Listed; **George Allen**, Virginia Tech; **Jérôme Benveniste**, European Space Research Institute; **Jessica Fayne**, University of Michigan Ann Arbor; **Ann Scheliga**, University of California Berkeley

1874955 *A Novel Approach Integrating Satellite Data and Geometry-Based Hypsometric Relationships to Enhance Reservoir Storage Estimates:* **N T Nguyen**, H Lee, T L T Du, H Y Li, D D Bui, H C Jung

1852998 *Analysis of the Mechanisms Involved in Glacial Lake Outburst Flooding in Nyalam, Southern Tibet, in 2018 Based on Multi-Source Data:* **W Jiang**

1946485 *Analyzing Coastline Variations in Taiwan Using Multi-Temporal SAR Data:* **T Y Lai**, K H Tseng

1909489 *Assessing Freshwater Lake Decline in Pakistan Using Multi-Temporal Remote Sensing and Hydrological Data:* **N Saddique**, I Khan, A R Islam, M Aleem, S M S Abbas, S Aftab, M Ahmad, H Arshad

1924382 *Assessment of Sediment Dynamics in Lake Powell, Glen Canyon Dam Colorado using Remote Sensing:* **R Haiju**, S Rupper, R R Forster

1908685 *Automated and Accurate Surface Water Delineation: Dynamic Threshold Discovery via Iterative Random Forest and Spectral Indices:* **M Hosseinipoor**, A M Kafi, F Ghaffari, M Tajrishy

1892134 *Bridging the Data Gap: Global Mapping of Small Water Reservoirs and Estimating their Storage Capacity:* **S Govindaiah Narayanaswamy**, M Aminzadeh, K Madani, N Shokri

1871047 *Constructing a High-Resolution Reservoir Dataset Across the Contiguous United States Using Sentinel-1 SAR Imagery:* **S Wang**, H Liu, Y Pu, H Su, L Wang, S Shu, D Tian, J Seo, M C LaFevor

1858138 *Daily CYGNSS Water Maps Reveal Inland Water Hot Spots and Hot Moments, from Wetlands to Floodplains:* **T Pu**, C Gerlein-Safdi, K Stephens, Q Euler

1883133 *Declassified and historical Remote Sensing data for reconstructing fluvial landscapes submerged by dams in climate-sensitive regions:* **R S Azzoni**, L Forti, A Brenna, A Zerboni

1985656 *Derivation of Full-Depth Velocity Profiles across River Channels by using Drone-based Particle Imagining Velocimetry and Entry-based Velocity Distribution Model:* **L Wang**, H Liu, J Seo, D Tian, S Shu, S Cohen

1897350 *Detecting and Mapping Alpine Peatlands with Satellite Remote Sensing:* **S Silvestri**, Q Li, A Pollo, E Tomassone, R Di Paolo, M C Siniscalco

1938031 *Development of a Reservoir Operation Module Integrating Optical Satellite Imagery from Google Earth Engine with a Watershed Model:* **Y Cho, PhD**, Y G Park, J Yi

1894594 *Does drought intensify algal blooms in global lakes?:* **T Kim**, H Lee, S Yang, Y Cha

1978985 *Estimating Lake Storage Variations using a Fusion of SWOT and Dynamic Surface Water Extent (DSWx):* **M Tom**, M Bonnema

2002106 *Evaluating Evaporation Data Products Over Colombian Reservoirs for Improved Water Balance Assessments:* **J V Fayne**, A M Gomez

1922575 *Evaluating the Accuracy and Consistency of Satellite-Derived Lake Surface Water Temperature Across Multiple Missions:* **S Zhang**, D Shah, C H Huang, H Gao

1915247 *Exploring Atmospheric Correction Methods for PACE-Based HAB Retrieval:* **N Tesfayi**, A Kumar, C Maniyar, I Fiorentino, D R Mishra

1955018 *Flood Inundation Mapping from Space: Overview of a Novel Approach for Tracking River Inundation Extent Over Time:* **N Pasley**, A Whaling

1994069 *Global Large River Observatory: What River Geomorphic Dynamics Could Be Monitored Today, but Still Aren't:* **S Bizzi**, N Surian, E Bozzolan, A Brenna, M Cecchetto, E Taffetani, E Matteligh, F Vanzani, P Carbonneau

1898598 *Global Patterns of Post-Drought Recovery Times in Lakes and Reservoirs:* **C H Huang**, D Shah, H Gao

1954191 *Global Stream Roughness Coefficient Dataset:* **E J Shavers**, M Harlan, D M Bjerklie, G Md Iftakher Morshed

1927986 *Hydrological Assessment of Transboundary Water Resources Dynamics in the Rio Grande River Basin Using Google Earth Engine:* **D Dayal**, S S Palmate, R Sanchez

1970213 *Identifying and characterizing lake ecosystem tipping points with ESA's Climate Change Initiative (CCI) satellite data products:* **A Scheliga**, D Odermatt, E Calamita, C Binding, I Woolway

1928309 *Impact of optical satellite imagery spatial scale on methane emission estimates from small water bodies:* **M Gaines**, M G Tulbure, M Ardon, V Perin, V Tiwari, R Composto, J Caineta

1962404 *Impact of Urbanization and Precipitation Change on Discharge in Bangkok, Thailand:* **G Bowen**, J Fayne

1882911 *Integrating SLAM and UAV-LiDAR to Establish a Tree Height–DBH Power law model and UAV - Based Carbon Stock Estimation for Willow Stands in a abandoned paddy wetlands:* **G Jekal**, Y Yang, S Lee, Y Song

1884307 *Integrating UAV-Based Remote Sensing and In-Situ Monitoring for High-Resolution Water Quality Assessment in North River and Lake Tuscaloosa:* **G Sunday**, A Premsagar, E Miliutina, G J Tapat, B Gutierrez, J Seo, H Liu

1894474 *INTEGRATION OF MULTI-SENSOR REMOTE SENSING FOR ENVIRONMENTAL MONITORING: ASSESSMENT OF WETLAND DEGRADATION IN SEMI-ARID ECOSYSTEMS:* **R W Aslam**, I Naz, Z Afzal

1879814 *Investigating Lake Ice Phenology in Arctic Wetlands using Planet and Sentinel-2 Imagery:* **N Jacobs**, S W Cooley

1934066 *Long-term trends of surface temperature and evaporation in the largest South America lakes revealed by remote sensing:* **J B Rossi**, A S Fleischmann, L Laipelt, B C C de Andrade, J B Fisher, I Woolway, R S do Vale, R A S D Santana, J Tota, A Ruhoff

1960507 *Monitoring Chlorophyll-a Dynamics in the Tennessee River Through Spatio-Temporal Analysis with Google Earth Engine:* **A Sherrill**, A A A Hossain

1860236 *Monitoring Dynamic Shifts in Dissolved Organic Matter (DOM) Using Satellite Remote Sensing at a Large River Confluence:* **Y Lu**, H Liu, S Chen, E Miliutina, A Premsagar, M Xu, H Su, J Men

1883330 *Monitoring Inland Water Bodies from Old and New Generation of Satellite Radar Altimetry Missions:* **S Roohi**, S Dinardo, J I Oliva, Y T Song

2003267 *Monitoring monthly groundwater level variation in the Nebraska Sandhills using remote sensing:* **N Shrestha**, T Gilmore, A Mittelstet, A Young, M Joeckel R

2001001 *Morphometric Analysis and Geomorphic Indices of Active Tectonics in the Wabash Valley Seismic Zone:* **S Parajuli**, R Counts, A Bhandari

1951844 *Multi-Decadal Aquatic Vegetation Dynamics in a Regulated River System Using Remote Sensing Records:* **C Hansen**, K Stewart, P Matson

1957037 *Multitemporal Variations in River Width Distributions and Hydraulic Geometry in the Platte River Basin:* **D Go**, G H Allen

1998462 *Near Daily Ice Cover Records from 100,000 Lakes Using Optical Satellite Imagery:* **A N Thellman**, T Pavelsky, X Yang

1940289 *Quantitative analysis of the impact of drought onreservoir operations at the Global Scale:* **N K Biswas**, S V Kumar

2001072 *Recent Updates on ICESat-2 Inland Water Products of Global Lakes, Reservoirs, Rivers and Coastal Waters:* **M F Jasinski**

1846996 *Reducing Error in Image-Based River Velocity Estimation: The Role of Ground Control Point Positioning and Camera Orientation:* **S Mandipe**, P Rameshwaran, A Wade, N Everard

2004874 *Remote sensing data for peatland monitoring: applications of multi-temporal SAR interferometry for surface motion analysis:* **C Bignami**, C Tolomei, L Beccaro, S Salvi, G Lopez Saldana, M Bechtold, K Tansey

1921716 *Remote Sensing Derived Spring Ice-Jam Flood Extents to Inform Environmental Flow Assessments for the Peace-Athabasca Delta Ecosystem in Western Canada:* **D L Peters, PhD**, N Van Nieuwenhuizen, S Beltaos, G Siles

1997709 *Remote Sensing of Carotenoid Pigments in Transient Hypersaline Lakes in Western Australia as an Indicator of Environmental Change Through Time:* **T Plattner**, B Schmidt, P Lange, S M Som, B Klempay, E R Paris, M M Weng, J S Bowman, N M M Fernandez, E Skoog, H T Jamison, E D Ingall, P T Doran, M Birmingham, J Weber, A T Schartup, S Buessecker, E Quartini, L Fisher, C Sephus, C Pozarycki, A Odenheimer, M Towner

1988815 *Remote Sensing of Discharge through Critical Flow Theory: Sensitivity Analysis:* **I Bae**, E Yager, B Fasth, D White, C Leonard, G E Grant

1959138 *Remote Sensing of Inland Water Quality for the Contiguous United States:* **T King**, S Ducar, D Avouris, K Wnuk, T Stagnitta, B Wakefield, M F Meyer, W Salls, J Eggleston, J A Hansen, T Bergamaschi, J Marshall

1937142 *RiverScope: High-Resolution River Masking Dataset:* **R Daroya**, T Rowley, J A Flores, E Friedmann, F Bennitt, H An, T T Simmons, M J Hughes, C Kluetmeier, S Kica, J D Velez, S Esenther, T Howard, Y Ye, A Turcotte, C J Gleason, S Maji

1945205 *Sedimentation and Storage Capacity Assessment of Reservoirs Using Remote Sensing Techniques:* **A Tiwari**, A Mishra, K Kothari

1873878 *Shrinking lakes, Shifting color: Long-Term Surface Reflectance Trends Linked to Lake Shrinkage in Great Basin Saline Lakes:* **H Meier**, M F Meyer, B Steele, N Taylor, J A Wang

1969317 *SWOT Reveals a Spectrum of Seasonal Backwater Dynamics on Large, Coastal Rivers:* **J H Gearon**, T Pavelsky, J Wang

1882231 *Temporal bias in the Landsat-derived surface water record:* **E Webb**, S W Cooley, E Levenson

1967264 *The Case for Calibration: A Remote Sensing Tool for Wetland Monitoring in the Prairie Pothole Region:* **M Church**, K Kemink, S Gowravaram, T Riecke, J L O'Connell

1880462 *The Influence of Flow Regime and Channel Planform on Natural Floodplain Heterogeneity in the U.S.:* **E Iskin**, E Wohl

1895555 *The Mercurial Bay: A Remote Sensing Assessment of Dynamic Surface Water Mercury Concentrations after Atmospheric Rivers in San Francisco Bay:* **N Taylor**, K B Byrd, M C Marvin-DiPasquale, J Fleck, B A Bergamaschi, J Agee, E T Richardson, C W Cheang, E Kakouros, N Wilson

1893847 *Tracking River Flow Dynamics Using LSPIV: Insights from July 16, 2024, Flood in Black Creek, Toronto, Canada:* **A Olusola**

252495
Research to operations for water resources
(joint with A, GC, NH)

Conveners: **Cameron Bracken**, Portland State University; **Andrew Verdin**, University of Colorado at Boulder; **Kathleen Holman**, Bureau of Reclamation Denver; **Chris Frans**, Univ of Washington

1867210 *A Hybrid Empirical and Conceptual Model for Improving Reservoir Representation in Hydrological Models:* **Y Chen**, Y Zheng, X Cai

1867441 *Actionable ensemble hydrometeorological modeling and uncertainty quantification for partners and users:* **A J Newman**, N Lybarger, S Hartke, A Wood, E D Gutmann, A Stone, K Holman, J F England, M Warner, C Mueller, F Lehner

1904936 *AWSOM-2: A Climate-Informed Decision-Support Tool for Hydropower Operations in Samoa:* **H Marley**, J Sturman, A Porteous, B Miville, K Fa'asau, T E Fau'olo

1977939 *Balancing Hydroelectricity Generating against Evaporative Losses in Arid Regions: An Operation Strategy Analysis:* **R Zeng**, F W Hung

1974631 *Co-design as an Approach to Facilitating R2O Transitions in Water Management: an Example From the Great Lakes:* **N Hernandez**, R Ravary, L M Fry, Y Hong, D Jones

1932521 *Data-Driven Models for Steady Levee Breach Flows:* **S Balachandran**, E Elalfy, M Erfani, E Goharian, H Chaudhry, J Imran

1906142 *Definition of Operational Resilience in Pumped Storage Hydropower Systems:* **D H KIM**, S O Lee

2000445 *Using Remote Sensing to map the presence and abundance of Manoomin (Wild Rice) in the Great Lakes region:* **K A Cherkauer**, A Adepeju

1971631 *Using Sentinel-1 data to assess the impact of hydroclimatic extremes on water reservoirs:* **N Wielgocka**, P Bogusławski, D Teodorczyk, Z Cai, R Stodolak

1944319 *Using the SWOT Satellite to Assess Global Models of Individual Rivers:* **C J Gleason**, P D Bates

1956244 *Validating SWOT River Observations in Remote and Ungaged Basins Using In Situ and ADCP Measurements:* **M Harlan**, D M Bjerklie, D Feng, J A Andriambeloson, M Mukendoyi

1958254 *Water Color Variation in Texas Reservoirs Across Wet and Dry Years: Linking Remote Sensing with Public Water Data:* **M Macleod**, L Pinheiro-Silva, X Yang, S M Powers

1961916 *Expanding the Representation of Hydrologic Uncertainty to Better Understand Risks to Endangered Salmon in California's Central Valley:* **J M Gilbert**, R Sherrick

1845695 *EXPERIMENTAL AND NUMERICAL MODELLING OF FLOW OVER CASCADE OF STEPS IN SKIMMING FLOW:* **R Mishra**, C S P Ojha

1969355 *Flood Risk at Scale: Evaluating resilience of 8000 large culverts Across New York State:* **O Emamjomehzadeh**, O Wani

1952006 *Framework for CONUS-wide Operational Seasonal Hydropower Forecasts:* **G Konapala**, C Bracken, N Voisin

1996702 *From the Margins to the Mainstream: Repositioning Water in Global Climate Governance Through the Baku Water Dialogue:* **S Hammond Antwi**

1911218 *Glen Canyon Dam and the Post-2026 EIS: Navigating Operational Uncertainty and Hydropower Impacts:* **Q M Ploussard, PhD**, M Pavicevic, Y Ao

1969461 *Incorporating Inflow Uncertainty into Reservoir Optimization: A Case Study of the Colorado River Storage Project and Aspinall Cascade:* **M Pavicevic**, Y Ao, Q M Ploussard, PhD

1994909 *Modular Physical Hydraulic Models for Improving Deep Stormwater Tunnel Operation:* **S Woo**, C Son, J Park, W Na, M Kim

1918992 *Operationalization of hydroclimate research within Great Lakes adaptive management: recent successes, challenges, and science priorities:* **L M Fry**, F Seglenieks, D Fielder, S Steinschneider, D Cannon, D Jones

1948106 *The role of behavioral preferences in multi-stakeholder water emergency decision-making:* **J Huang**, Y Zhang, W Mo

2001183 *Using FIRO to Understand Reservoir Operational Resilience Under Variable Hydrometeorological Conditions at Howard A. Hanson Dam in Washington State:* **M Warner**, J Kalansky, D R Cayan, J Harrell, P Yao, L Su, M Pan, C Castellano, R Luna Niño, M Ralph, C Talbot

246595
Utilizing Precipitation Datasets and Quantifying Associated Uncertainties in Hydrometeorological and Climate Impact Applications *(joint with A, GC, NH, SY)*

Conveners: **Paul Kucera**, National Center for Atmospheric Research; **Ali Behrangi**, University of Arizona; **Andrew Newman**, National Center for Atmospheric Research

1920635 *How Uncertain Are Our Estimates of Rare Precipitation Extremes? A Global Assessment of Data Injustice Using Station and Gridded Data:* **T Chatterjee**, R M Horton

1958023 *A CONUS Precipitation Event Database: Using MRMS to Characterize Extreme Events:* **P E Kirstetter**, D Watters, A J Newman, A Wood, G Tang

1961662 *A New CONUS Multi-decadal Ensemble Surface Meteorological Dataset for Hydrological and Sectoral Applications:* **A W Wood**, G Tang, A J Newman, P Kirstetter, D Watters, C Mueller, C Frans

1978733 *Assessment of the High-Resolution Rapid Refresh (HRRR) Precipitation Forecasts for Urban Coastal Areas: New York City Testbed:* **S Makrides**, D D Turner, K M Mahoney, R Khanbilvardi, T Lakhankar

1868843 *Bias Correction Applied to Short-term Precipitation Forecasts: Impact on Hydrological and Snow Predictions Across Canada and the Northern U.S.:* **A Pérez Bello**, É T É M Gaborit, M Surcel, V Vionnet, F Lespinas, V Fortin

1870315 *Comparing Satellite Rainfall Datasets-IMERG and MSWEP in Capturing Tropical Cyclone Rainfall in the North Indian Ocean:* **A Akter**, C J Matyas

1892224 *Estimating meteorological and hydrological forecast uncertainty in Anticipatory Action and Forecast-based Finance humanitarian programs:* **M E Brown**, I Kipkemoi, D Backer, A Cheruiyot

1974567 *Evaluating Gridded Datasets for Representing the Intensity of Sub-daily Rainfall Events across Florida:* **S Kaiser**, E Ahmadisharaf, C Polatel

1868505 *Evaluating Performance of Near Real-Time GPM Products using High-Resolution PIERS Gauges Across Diverse Ecosystems and Weather Regimes over Land :* **D DAS**, S Pal

1868719 *Using Social Science Research to Help Improve Forecast Product Design, Delivery and Accessibility to Support Decision-Making:* **K Semmens**, R H Carr, K Maxfield, B Montz, P Painter

1927882 *Evaluation of IMERG and CMORPH Satellite Precipitation Products with Respect to Extreme Precipitation from Sub-daily to Multi-day Scales Against in-situ Reference Network:* **O P Prat**, D A Coates, J Uehling, B R Nelson, M A Palecki

1970958 *Evaluation of Low-Cost 3D-Printed Automatic Weather Stations (3D-PAWS) for Operational Use:* **R Zieber**, P A Kucera, K Payne, B Smith, M Steinson, W Nicewonger

1874361 *Evaluations of Gauge-Based and Satellite-Derived Gauge-Corrected Gridded Precipitation Datasets Across Diverse Climate Zones of the Brazos River Basin, Texas, USA:* **T G Tarkegn**, R Ray, G Tefera

1915043 *Examination of Future Changes in Global Extreme Precipitation Based on CMIP6 Climate Models:* **J Baker**, S Y Wu

1876169 *Exploring Snow Surface Variability over Alaska's Glaciers Using Airborne SWE and Precipitation Observations:* **Y Song, PhD**, A Behrangi

1965784 *Global Validation of Satellite-Only Ensemble Precipitation Dataset (STREAM-Sat) against multiple Radar Networks:* **Y Derin**, K Peng, D B Wright

1903546 *High-Resolution Depth-Duration-Frequency Curves from Radar-Derived Precipitation: A Case Study of Puerto Rico and the U.S. Virgin Islands:* **A Mejia-Manrique**, S Mejia-Manrique, N Devineni, R Khanbilvardi

1918015 *How satellite-based precipitation advances multi-scale flood modeling and prediction:* **H Wu**, Z Huang, G Gu, K Yilmaz

1969866 *MSWEP V3: Machine Learning-Powered Global Precipitation Estimates at 0.1° Hourly Resolution (1979–Present):* **X Wang**, A Abbas, H Beck

1974873 *Noisy Sampling Inherent to Daily Precipitation Observations and Some Implications About Return Level Inferences:* **A Weyant**, R E S Clemesha, A Gershunov

1971875 *Rainfall Reality Check: Unraveling Monsoon Regimes Across India via Triple Collocation-Based Assessment of Precipitation Products:* **S Paul**, H Alemohammad, PhD

1861806 *Spatial Clustering Patterns of Precipitation Indicators Across the Continental United States (CONUS):* **S Eero**, A Dietrich, D Sutley

1973325 *Suitability of Various Gridded Datasets for Representing Sub-daily Rainfall Event Properties across the US Gulf Coast:* **S Kaiser**, E Ahmadisharaf, C Polatel

1862816 *The Changing Distribution of Daily Precipitation Intensity Across the Chesapeake Bay Watershed:* **M Khatiwada**, A W Ellis

2003691 *The future depends on objective use of uncertainty quantification:* **G Elsaesser**, M van Lier Walqui, K Loftus, F Tornow, A M Fridlind, S Bauer, A S Ackerman, J Wu, G A Schmidt

1963283 *Translating AI-enhanced forecasts and automatic weather station observations into trusted, accurate, and actionable predictions of rainy season onsets in Kenya:* **C C Funk**, M Kilavi, F Sedah, G Flaspohler, P Ochieng, A H Fink, W Turner, J Adkins, P A Kucera, C Shitote, S Shukla, J Sirengo, L Harrison, F Davenport IV, PhD, B Das, D C Alaso, G J Husak, A Jong

252843
Water and food security: discovery and engineered solutions for a changing world

(cosponsored by AMS: American Meteorological Society) *(joint with GC, NH, SY)*

Conveners: **Francisco Munoz-Arriola**, University of Nebraska Lincoln; **Anna Wilson**, Center for Western Weather and Water Extremes (CW3E), Scripps Institution of Oceanography, UC San Diego; **Michael Dettinger**, Scripps Institution of Oceanography

1876331 *A Review of Water Security: Definitions, Indicators, and Emerging AI & ML Applications:* **K Baburaj**, A Aavudai, P Natarajan, D Sundar

247777
Water and Society: Water Resources Management and Policy in a Changing World

(joint with GC, NH, SY)

Conveners: **Antonia Hadjimichael**, Organization Not Listed; **Matteo Giuliani**, Politecnico di Milano; **Christine Kirchhoff**, Pennsylvania State University Main Campus; **Rafael Schmitt**, Stanford University

1892920 *Exploratory Modeling to Better Understand How Changing Drought Extremes May Shape Water Supply Vulnerabilities in the Delaware River Basin:* **T Amestoy**, P M Reed

1973689 *GIS-Based Screening Framework for Green Infrastructure Prioritization in Flood-Prone Urban Neighborhoods: A Case Study from Cherry Hill, Baltimore:* **X Zhou**, J Atayi, J G Hunter

1848976 *Trends in Extreme Precipitation in the Missouri and Upper Mississippi River Basins: A Comparative Study of 1950 -1986 and 1987–2023:* **C Gupta**

1876151 *Uncertainty Mapping of In-Situ Hourly Precipitation Datasets Along the U.S. East Coast in the Context of Instrumentation Change:* **M Rahimi Golkhandan**, B Rosenzweig, A T Degaetano, P Gurian, F A Montalto

1979165 *Validation of Gridded Precipitation Products in the Ohio River Basin:* **M Fomaca de Sousa Junior**

1860550 *Building Resilient Water and Healthy Food Systems in the Hilly Regions of Bangladesh: A Transdisciplinary Approach Integrating Hydroclimatic, Landscape-based Analysis, Community Realities, and Expert Insights:* **N Dey**, G Rasul Shohan OR, G A Singh Sr, L Ghose OR, J Malakar Sr, T Habib JR, S Saha SR

1959215 *Drought effects on soybean yield and economics in Brazil:* **G Parisoto**, F Munoz-Arriola, F G Pilau

1966105 *From Projections to Practice: Visualizing Climate Data for Agricultural Resilience in Africa:* **M Perera**, M D Leh, N M Velpuri, G Fernando, S Ekanayake, K Mekonnen, K Akpoti, A Owusu, L Maduskanka, P Thilina-Prabhath, T Perera, A Seid

1900481 *Innovative, Low-Energy "High Performance Biodigester–Downflow Hanging Sponge (HPBD–DHS) System" for On-Site and Decentralized Blackwater Treatment:* **A Tomar**, V Tyagi, A Rajpal, A A Kazmi

2004328 *A Collaborative Risk Informed Decision Analysis Vulnerability Assessment Framework for the Trinity River Basin:* **J Harrell**, S Benson, G Mendoza, M Bridgers, L Ostadrahimi

1977488 *A Holistic Modeling Framework for Resilient Water Management in the Colorado River Basin:* **B Tezcan**, S Danekar, M E Garcia

1873792 *A Human-Water Systems Perspective on Vegetation Cooling and Water Constraints in Arid Regions:* **M C Levy**

1880851 *A Regional-to-Local Scale Framework for Water Security Assessments:* **A N Birnbaum**, C Chini, PhD, T B Wild

1961853 *Advances in Decision Support to Aid Participatory Colorado River Basin Water Management:* **J R Kasprzyk**, E A Zagona, C Jerla, J R Prairie, A Butler, R Smith, N Bonham

1850603 *Advancing Clean Energy and Environment Resilience through CSR in Lakhra's Coal Mining Region, Pakistan:* **A L Junejo**

1894969 *Assessing and Managing Interrelated Water Supply and Financial Risks in the Colorado River Basin – a Dynamic Basin-scale Approach.:* **I Burnett**, G W Characklis, P M Reed, S V Sunkara, T Thurber

1865058 *Assessing Climate Impacts on Agricultural Water Requirements in the Upper Colorado River Basin through a Stochastic Weather Generator:* **A B Thames**, A Hadjimichael, J Quinn

1857940 *Can large language models replicate human decision-making in water system management?:* **W Arnold**, J D Herman, M Giuliani, A Castelletti

1863072 *Clarifying How the Drivers of Future Water Shortages Change across Regional to User-level Scales in Colorado's West Slope River Basins:* **S V Sunkara**, D Gold, P M Reed

1980813 *Climate Extreme-Induced Economic Impacts on California Crops, Livestock, and Communities:* **J Medellin-Azuara**, S Kishore, A Escriva-Bou, A Konialian, J M Gilbert, J T Abatzoglou, J H Viers

1979053 *Co-adapting Drought Indicators and Management to Shifting Hydrologic Conditions:* **K Willebrand**, S Vicuña, J A Gironas, O Melo, D Sallis, S Fletcher

1904258 *Collaboration between science and law to contribute to Japan's new flood management policy:* **T Tebakari**

1914045 *Combating riverine saltwater intrusion with reservoir operations: combining machine learning and multi-objective reinforcement learning:* **E Heidtman**, A Hadjimichael

1868228 *Community-Engaged Modeling of Urban Flood Adaptation Pathways for Baltimore:* **A Spangler**, A Hadjimichael

1878110 *Dam Heightening as a Climate Adaptation Strategy in the Italian Alps:* **M Merlo**, M Giuliani, R Boes, F Di Marco, D Avesani, B Majone, A Castelletti

1987205 *Decision rules for salt –feedback loops in One Water systems and their implications for collective management:* **M Rippy**, B Roston, S Misra, S B Grant, T Schenk, T A Birkland, S Kaushal

1931378 *Dynamic Flood Adaptation Pathways: A Data-Driven Framework for Strategic Infrastructure Planning Under Climate Uncertainty:* **J Oh**, M D Bartos

1884015 *Dynamic Modeling of Livestock Water Use: Integrating Machine Learning and Physiological Variability:* **H T Dagne**, M M Mekonnen

1967732 *Dynamic Optimal Reservoir Control in the Panama Canal:* **J Prieto**, S Galelli, A Ortiz Bobea

1983994 *Exploration for High-Strength Ammonia Removal in Recirculating Aquaculture Systems using Microbial Consortium:* **G Lee**, K Yoo, H Kim

1961046 *Exploring Alternative Formulations of Multi-Objective Reservoir Operations Using Borg-RiverWare:* **J R Kasprzyk**, E A Zagona, D Neumann, P Lynn

1895840 *Exploring Irrigation demand response of the post-2026 Colorado River Operations Alternatives:* **F Hung**, B Mohajer, J S Famiglietti, Y C E Yang

1899464 *Freezing the Socio-Environmental Footprint of Hydropower on Rivers:* **R Almeida**, C Arantes, S Bhattarai, S Cardoso, A F M K Chowdhury, A Del Claro, C R D C Doria, E Fluet-Chouinard, S Galelli, K Garrett, S Heilpern, G A Herrera-R, R Kelman, J Laufer, Z Li, P B McIntyre, R McManamay, I Miqueleiz, M Miranda, J Opperman, F Pacheco, T V Royer, R J P Schmitt, S Sethi, S Thomas, Y Upadhyay, T B Wild, A C Wilcox, A Valerio, C Gomes, A Flecker

1937961 *From Grande to Chico: 125 Years of Human-Driven Water Discharge Decline in the Lower Rio Grande/Bravo:* **A Casillas**, T Y Dong, J Benavides, S Dee

1949089 *Future Dynamics of Water Availability and Hydropower Potential at Existing US Reservoirs:* **C Hansen**, C J Bastidas Pacheco, J Gallego-Calderon, G R Ghimire, S Gangrade, S C Kao

1907795 *Global Mapping of Forecast Uncertainty Constraints on Reservoir-Supported Managed Aquifer Recharge Potential:* **H Chen**, X He

1974459 *Humans and Hydroclimate in the US: Tackling Complex and Evolving Water Problems in the Anthropocene:* **T Schneider**, S A Tessendorf, P J van Oevelen, A L Dugger, K Skalak, Y Li, C Kirchhoff

1987025 *Hydro-Social Analysis of Micro-Watershed Sustainability in Coastal Bangladesh:* **J Alam**, S B Murshed

1912054 *Hydropower Efficiency Is Declining. By How Much, and How Can We Adapt?:* **V Yildiz**, N Voisin, M Zaniolo

1905331 *Impacts of Climate Change on Domestic and Industrial Water Demand: Focusing on Regional Socioeconomic Vulnerability:* **E Kim**, H Yoon

1878512 *Integrating Deep Learning and Thermal Control into Water Management Modeling of the Delaware River Basin to Better Capture Stream Temperature and Salt Front Dynamics:* **C Y Lin**, T Amestoy, J A Zwart, G Gorski, P M Reed

1861339 *Integrating Quantitative and Qualitative Approaches to Address Saltwater Intrusion and Sea Level Rise Impacts on Coastal Forestry in Maryland:* **J Sharapi**, E White Jr

1903632 *International Approaches to Freshwater Ecosystems: the Noce River, Italy and Yuba River, California, USA:* **S Triantafillou**, J Rees, J Hampton, K Alford, L Bouzan, K Evans, M Hallmark, J Israel, L Murdoch, E Pandrin, B Riddle, K Waldman, N Pinter, S M Yarnell

1906546 *Long-Term Socio-Hydrological Responses to Governance Design and Climate Change in Agricultural Drainage Systems:* **J Kim**, P Ranjan, D J Yu, R Bhattarai, H Jeong, K Kim

1911692 *Macroeconomic Impacts of a Changing Water Cycle: Evidence from Global and Chinese Subnational Data:* **Q Tang**, Y Ren, M Kotz, G Leng, S Sun, L Rosa, G Zhao, D Chen

1959316 *Modeling With Expert Stakeholders: Building Audience and Improving Usability of Scientific Models:* **B C Anderson**, D M Hall, PhD, S R Adelsperger, D L Ficklin

1998991 *Modeling Freshwater Inflows to Estuaries under Climate Change: A Physically-Based Approach:* **H Ji**, Y Song, T Bindas, C Shen

1962821 *Optimizing Reservoir Operation Under Changing Climate in the Central Himalayas:* **R Baniya**, Y S Neupane, R Talchabhadel, S Sharma, J Panthi, G R Ghimire, S Bista, R Prajapati, B R Thapa

1980127 *Re-designing reservoir operations for a decarbonizing grid under climate change:* **S Singh**, J Quinn, J Wessel, J Kern, J D Herman, R I Cuppari, G W Characklis

1850845 *Scalable Estimation of Reservoir Dynamics Using Remote Sensing, Machine Learning, and Geospatial Analytics:* **H Eldardiry**, S S Mahto, J D Herman, S Galelli

1954805 *Simulating Community Dynamics in Rural-Urban Water Transfers through an Integrated Agent-Based and Input-Output Modeling Approach:* **E Beyer**, M Amaya, L Marston, B Franklin

251344
Advances in Urban Flood Risk Assessment and Adaptation *(joint with H, SY)*

Conveners: **Vivek Srikrishnan**, Cornell University; **James Doss-Gollin**, Columbia University; **Adam Pollack**, Dartmouth College; **Abby Sullivan**, Philadelphia Water Department; **Marissa Webber**, Carnegie Mellon University

1963949 *20 years of revising, amending, and reducing the U.S. Regulatory Floodplain-when, where, and why do these changes happen?:* **B Tellman**, S Bryant, J Weill

1889906 *A Flood Vulnerability Assessment Approach for Aging Buildings Using National Building Registry Data:* **H Kim**, H Lee, S O Lee

1871290 *A Framework for Evaluating Soil Softening and Foundation Stability under Urban Flooding Based on Imperviousness and Inundation Duration:* **H Lee**, H Kim, S O Lee

1866927 *Spatiotemporally Explicit Energy Storage Deployment Strategy for a Resilient, Decarbonized Power System in Mainland Southeast Asia:* **Z LI**, Z Liu, R J P Schmitt, X He

1922038 *Structural uncertainty in the representation of reservoir management in hydrologic models:* **A Sánchez-Gómez**, J D Herman, H Eldardiry, S Galelli

1975191 *The human right to water in a changing climate: Shifting government roles and responsibilities in water allocations for human health and safety:* **J L Rempel**, K Dobbin

1856800 *To What Extent Are Carbon Sequestration Programs Relying on Indigenous Land and Water Resources?:* **P D'Odorico**, B Reade Malagueno, L Ricciardi, M Muller, M Tatlhego, M C Rulli

1969833 *Trends in Water Quantity, Quality, and Use in the Conterminous United States: Assessing Changes in Water Availability for Human and Ecosystem Use (1980-2023):* **O Miller**, E Stets, G Gorski, T Partridge, A Martinez, A Archer, S A Archfield, M J Cashman, A Dondero, M L Erickson, PhD, PE, B Linhoff, L Medalie, M F Meyer, J Peschman, K Powlen, S Lindsey, M A Scholl, M E Shoda, T Stagnitta

1906154 *Understudied and Overlooked: A Global Scan of Water Research Gaps Across River Basins:* **S Alsharari**, J C Adam, M Liu, K Rajagopalan

1891230 *Using GIS for Spatial Assessment of Saltwater Intrusion of DAF Installations:* **A Kincaid**, C Chini, PhD

1898726 *Vulnerability of Urban Water Systems to Changing Droughts: The Case of Santa Rosa, California:* **S Vicario**, M E Garcia

1974756 *A Hydrological Framework to Aid Prioritization of Aging USDA Watershed Program Dam Rehabilitation in Texas:* **B Devkota**, K Greenwood, E Langendoen, L Heintzman, D Li, N Fang

1938097 *A Multi-Scale Optimization Framework for Water-Level Monitoring in Urban Drainage Networks under Extreme Rainfall:* **T Kim**, D Rhee, S Sim, H J Kim

1897210 *A Novel Framework for Non-Stationary Frequency Analysis of Compound Flooding in Urban Coastal Areas:* **A Aryal**, D Lassiter, J Quinn, K A Schiro

1856846 *A Reduced Order Modeling Framework to Compare Urban Resilience to Flooding:* **D Amini**, F J Ulm

1880668 *Advanced Methods to Evaluate Compound Flood Risk and Forecast Flooding in Real-Time for the City of Jacksonville:* **B McMann**, J Fischbach, M S Bartlett Jr, M Narayanaswamy, P Kane, Z Cobell, N Tebyanian, M Bregman, O Diaz, P Panakkal, A Khalid

1960428 *Assessing Housing Market Responses to Flood Exposure: A Case Study of the 2016 Louisiana Flood in East Baton Rouge Parish, Louisiana:* **I J Tama**, R De Jesus Crespo, T Douthat

1949572 *Assessment of pluvial flood events based on monitoring and modeling of an old urban storm drainage in the city center of Yangon, Myanmar:* **A K Min**, T Tashiro

1891217 *Building Resilient Environments: An Integrated Geophysical Approach to Gully Erosion Susceptibility Mapping:* **N C Idowu-Anifowoshe**, V Agwinede, B Ojo, D Umoh

1965042 *Catastrophic "Hyperclustering" and Recurrent Losses: Diagnosing U.S. Flood Insurance Insolvency Triggers:* **A Nayak**, M Zhang, P Gentine, U Lall

1862808 *Classification and Spatial Patterns of Drainage Infrastructure in Miami-Dade County, Florida:* **S Wang**, K J Mach, E M Martin, B F Sanders, J E Schubert, M C Sukop

1982994 *Comparative Analysis of 1D/2D Urban Flood Simulations based on One-Way and Two-Way Coupling Schemes:* **S Sim**, T Kim, D Rhee, H J Kim

1957931 *Comparing Flood Susceptibility Across Contrasting Texas Watersheds: A GIS-Based Prioritization Approach in Kerr County and the Dallas-Fort Worth Region:* **Y Zhang**, F H Jaber

1895817 *Compound Flooding Escalates Unequal Access to Critical Facilities in Urban Areas:* **R Dave**, D Zhou, D M Tantary, U Bhatia, A Ganguly

1988292 *Deep Learning-Based Prediction of Foundation Failure Mechanisms in Flood-Prone Areas Subjected to Scour:* **A Eskandarinejad**, R Nazari, M Nikoo

1909871 *Development of Depth-Damage Curves for Urban Flood Damage Assessment: A Case Study from India's Silicon Valley:* **A Pathak**, A Mathad, A Gagnon

1859882 *Efficient Design Storm Selection Using Inverse Reliability and Stochastic Storm Transposition:* **M A Hussain, PhD**, D B Wright

1881478 *Flood Inundation Mapping and Vulnerability Analysis of the Lower Madi Watershed, Nepal:* **A Shrestha**

1932356 *Flood Risk Mitigation by Applying Various Urban Planning Methods Under the Future Population Decline:* **K Taniguchi**

1944701 *Flood Susceptibility Assessment in the Chittagong Hill Tracts (CHT), Bangladesh, Using GIS-Based AHP and Multicriteria Analysis:* **S M T Zahid**, H Moulik, M M Sarker, M F Khan, M H Nahian

1949672 *High-Resolution Flood Simulation and Validation in Coastal Texas Using ATS and Sensor Networks:* **S Barbosa**, S S Rathore, E Coon

1957874 *High-Resolution Modeling of Flood Hazard and Infrastructure Risk in Philadelphia:* **Y Son**, N Sun, C Reesman, X Li, M Deb, D Judi

1976235 *High-Tide Flood Prediction Enables Micro-Adaptation, Prolonging Neighborhood Habitability:* **P M Orton**, Z Chen, H Eisler Burnett, K T Mandli

1914251 *How Creek Widening and Wetland Buffers Flip Urban Flood Hazards to Protection:* **A Kumar**, A Datta, U Bhatia

1902408 *Hybrid Vegetation-Seawall Systems Enhance Coastal Flood Protection Under Sea Level Rise: Integrated Modeling and Economic Analysis:* **E Amini**, R Marsooli

1863567 *Hydrogeological And Flood Risk Assessment Of A Riverine Terrace Along Chilime River in Aamachhodingmo Rural Municipality, Rasuwa, Nepal:* **A Shrestha**, K R Kafle, R Kayastha, T Ale, B Rai

1976799 *Impact of Sedimentation in Open-drainage Channels on Pluvial Flood Severity in Lowland Cities in the Asia Monsoon Region:* **T Tashiro**, A K Min

1924649 *Innovative Hybrid Explainable AI and Process-Based Modeling Approach for Enhancing Urban Flood Inundation in the Lower Blue Nile Basin (LBNB), Sudan:* **S M A Berama**, A Sharma, PhD, G Elshafie

1868969 *Insights on Urban Flooding Information Needs from Social Science Research to Inform Product Development of an Urban Rain Rate Dashboard:* **K Semmens**, R H Carr, K Maxfield, B Montz, P Painter

1850748 *Integrated Geotechnical Strategies for Climate-Resilient Flood Infrastructure: Advances in Design, Monitoring, and Risk Management.:* **K Eze**, T Kehinde, C Anosike, C Dirisu, K Turoti

1942281 *Integrating Climate-Induced Non-Stationarity into Dynamic Stage-Damage Curve Modelling:* **S Bhere**, M J Reddy

1942095 *Integrating Surveillance Camera Data and Physics-Based Modeling for Urban Flood Risk Mapping:* **M Kim**, H Choi, Integrated Master's and PhD Program, E Shin, C G Song, S J Noh

1891947 *Mapping disability-specific flood risk using GIS-Multicriteria Decision Analysis in the coastal city of Norfolk, VA:* **H N Christensen**, R Weghorst, J L Goodall, M Reidenbach

2003572 *Mapping Urban Flash Flood Extent and Damage in North Carolina Using High-Resolution Satellite Imagery:* **M G Tulbure**, D Boast, M Gaines, J Caineta, R Composto, E Vail

1998325 *Mapping urban flood risk in Miami-Dade County:* **T Islam**, E B Zeleke, A M Melesse

1881233 *Multi-Objective Urban Observational Strategies: A risk-based framework for expanding flood sensor networks.:* **C Brelsford**, E Coon, M K Wang, N Rosenheim, N Brake, L Haselbach, P Passalacqua

1980541 *Quantifying Hidden Hazards: A Flood Risk Assessment Framework for Urban Underground Spaces Under a Changing Climate:* **K Boukin**, K M Strzepek

1915746 *Quantifying Urban Development Impacts on Historic Floods in Philadelphia:* **N Kacharava**, C Reesman, N Sun, V Srikrishnan

1893570 *Relationship Between Urban Growth and Flood Susceptibility: A Case Study of Tuyen Quang City, Vietnam:* **H D Nguyen**, S D Pham, Q T Bui

1879898 *Simplified Urban Risk of Flooding (SURF) Estimation due to Reduced Capacity under Compound Flooding:* **M M Lewis**, S Radfar, H Moftakhari

1976432 *Spatially Aware Machine Learning for Flood Risk Mapping: A Comparative Analysis of RF and GWR-RF in Houston:* **F B Ibrahim**

250102
Advancing Flood Modeling in Latin America and the Caribbean: Challenges, Innovations, and Solutions *(joint with EP, H, NS, SY)*

Conveners: **Felix Santiago-Collazo**, University of Georgia; **Luciana Iannone Tarcha**, University of Georgia; **Walter Silva-Araya**, University of Puerto Rico Mayaguez; **Rodolfo Scarati Martins**, EPUSP Polytechnic School of the University of Sao Paulo; **Orlando Viloria**, University of Georgia

1979218 *Spatially Varying Controls on Flood Duration Trends Across the US:* **L Ohenhen**, A AghaKouchak, M Shirzaei

1861389 *Street-Level Compound Flood Modeling of Philadelphia and the Schuylkill River: Present and Future Risks:* **D Xuan**, M A Hsieh, D J Jerolmack, H Ulloa

1916681 *TrackCtrl: Controllable Hurricane Track Generation via Physically-Constrained Diffusion Models:* **N Law**, A Nayak, Y Miura

1994829 *Understand and Modeling the Biophysical and Socio-Economic Performance of Nature-Based Approaches for Flood Risk Reduction in Coastal Urban Areas:* **P H Kirshen**

1922022 *Unveiling Coastal Cities at High Risk of Flooding Along the U.S. Gulf and Atlantic Coast: A Machine Learning Driven Approach:* **H Dey**, W Shao

1888262 *Urban Flooding and Household Adaptation: Why Decision-Making Goes Beyond Technical Solutions in Manville, New Jersey:* **N Fatema**, M Bollempalli, A Li, D Bennett Gayle, E Gilmore, V Ramenzoni

1859043 *A New Coupled Land-Atmosphere Framework for Modeling Rainfall and Flooding in Northeast Brazil:* **V Arraes Rocha Felix**, D Porinchu, A Grundstein, T L Mote, D R Nelson

249382
Advancing Solid Earth Hazard Assessment Using Integrated Digital Twin Approaches *(joint with IN, S, T, V)*

Conveners: **Alice-Agnes Gabriel**, Ludwig-Maximilians-Universität München; **Margarete Jadamec**, University of Houston; **Leif Karlstrom**, Stanford University; **Mark Behn**, WHOI

1918507 *A Digital Twin for identifying unrest and dike propagation patterns at Mount Etna volcano, Italy.:* **C P Montagna**, R Bruni, E De Paolo, M Allegra, D Garg, F Cannavo, P Papale

1998916 *Digital Rock Physics: A Simulation-based Approach to Constraining the Physical Properties of Partially Molten Rocks using a Digital Representation of Experimental Samples:* **L Montesi**, W Zhu

1944124 *Digital Twin for tsunami disaster resilience, incorporating data Assimilation of ocean bottom pressure data - preparing for great Nankai earthquakes-:* **Y Tanioka**, R Ratnasari, T Suzuki, S Koshimura, A Musa, N Morimatsu, Y Sato, J Yoshino

1990725 *Real Time High Fidelity Bayesian Inference and Forecasting of Tsunamis:* **O Ghattas**, S Henneking, S Venkat, A A Gabriel

1954854 *The Virtual Earthquake Machine: Towards Digital Twins of Fault Zones:* **A E Elbanna**, M Abdelmeguid, M S Mia

1878099 *Towards a Digital Twin Framework for Soil Liquefaction Assessment Using Explainable Machine Learning:* **S Tiwari**, S K Das

1907047 *Tsunami Digital Twin : Progress and Applications to Japan and the US:* **S Koshimura**, Y Tanioka, D Melgar, B Crowell, R T Eguchi, Y Ohta, E Mas, B Adriano, A Musa, Y Sato, J Yoshino, N Morimatsu, T Suzuki, H Takizawa, H Kobayashi

250286
AI-Driven Approaches to Monitoring Fault Activity and land subsidence in Urban Environments *(joint with EP, G, IN, S)*

Conveners: **Ava Osman Pour**, Bu-Ali Sina University; **Mimmo Palano**, Università degli studi di Palermo; **Franz Antezana Lopez**, Beihang University; **Peyman Heidarian**, School of Transportatting Science and Engineering,Beihang University

251491
Applications at the Intersection of Science, Practice, and Policy to Proactively Address Natural Hazard Risk *(joint with A, GC, H, SY)*

Conveners: **Colby Fisher**, Hydronos Labs LLC; **Elinor Benami**, University of California Davis; **Mona Hemmati**, Gallagher Re

1991924 *Operationalizing Flash Flood Guidance in South Asia: Integrating Science, Institutions, and Early Warning Systems.:* **H Bharwani**, R Saxena, M Kumari, M Mohapatra

1984239 *Targeting Field Data Collection for Effective Agricultural Monitoring and Disaster Relief with Earth Observation and Machine Learning:* **E Kirchner**, M Cecil, PhD, E Benami, I Becker-Reshef, J Wagner, R Sahajpal

1871814 *A Scalable Satellite Based Framework for Sub-National Yield Modelling to Strengthening Agricultural Risk Management in Africa:* **M Poretti**, S Coutu, J Wagner, J Dumelow

1858409 *Advancing science–practice interactions to manage complex risks:* **K J Mach**, B F Sanders

1992023 *After 10 Years: Toward an Integrated Climate Risk Framework for Three UN Post-2015 Agendas:* **M H Lin**, C P Tung

1999018 *Aftermath Response to Natural Disasters Using Alternative Means of Aviation:* **J Rakas**, J Kim, E Gaper, J M Fernandez, J Kim, K Nguyen, V D Le

1957316 *AI-Driven Global Parametric Flood Insurance: Synthesizing Satellite, Streamflow, and Rainfall Data with Hydrologic Models:* **B Tellman**, T Nair, S Chakrabarti, C Doyle, M Thomas, M R Ehsani, K Potapov, S Zwiep

1929937 *Applying the Swiss Cheese Model to Wildfire Risk Management in the Built Environment:* **K A Hereid**, M Hernandez Jr, PhD, E Kianirad, I Mezzina, E Sambuco, T Yanco

1877161 *Integrated InSAR, Optical and Deep Learning-Based Fissure Monitoring in Nakuru County, Kenya.:* **F Wawira**, N Njuguna, I Jelimo

1876292 *Machine-learning analysis of regional seismicity around the Korean Peninsula after the 2011 M_W9.0 Tohoku-Oki megathrust earthquake:* **B Kim**, T K Hong, J Lee, S Park, J Lee, D G KIM

1978196 *Climate Change and Sovereign Debt: Estimating the Impact of Tropical Cyclones and Rising Temperatures on Credit Ratings and Borrowing Costs in Developing Countries:* **J Choi**, R Jing, C Callahan, M Burke, N S Diffenbaugh

1996907 *De-risking Energy Infrastructure and Improving Energy Resilience through Nature-based Solutions:* **S Bhattacharya**, R O'Neil, D Rucavado Rojas, N P Qafoku, M Heiland

1881924 *Developing Wildfire Susceptibility, Vulnerability, and Risk Maps for Maui, Hawaii:* **H Khoshkam**, S Janizadeh, S M Bateni, B Morioka

1847339 *Enhancing Disaster Resilience Through the Integration of Disaster Risk Reduction and Response in Environmental Impact Assessment:* **V Bhanwala**

1887570 *From Non-Extreme Stresses to Catastrophe: Amplifying Effects of Spatio-Temporal Vulnerability Coupling in Flood Disasters:* **S Qi**, R Li

1985755 *Homelessness, Adaptation and Vulnerability to Extreme Weather EveNts (HAVEN): A mixed-methods analysis of extreme weather events on unsheltered populations:* **S Shrivatsa**, K Osman

1967123 *Hydro-Stochastic Model to Inform the Design of Environmental Impact Bonds for Wildfire Resilience:* **L Mangney**, M W Brand, A Jong-Levinger

1934817 *Meter-Scale Hail Detection from Space:* **T Pu**, G Villarini, C Wang, I Arauz

1957941 *Myths and Misconceptions held by Hazard Scientists and Practitioners: Lessons from Co-production of Science:* **K A Jagannathan**, N L Freitas, A D Jones, Y Li, S Buddhavarapu, V Ford

1968691 *Open and Actionable: Building Natural Hazard Risk Tools for Widespread Use:* **C K Fisher**, M McHugh

1980615 *Operationalizing Risk Tolerance for Natural Hazards: A Framework Using Frequency-Number (F/N) Charts:* **I Kavvada**, Y Chong, V Loh, Y Oum

1981669 *Pooling Rain and Risk: How Forecasts Affect Enrollment in Rainfall Indexed Insurance:* **A Carroll**, E Benami

1971489 *Post-Fire Flood Hazard Model Calibration for Assessing Downstream Financial Benefits of Wildfire Mitigation Intervention:* **H Jiang**, L Mangney, M W Brand, A Jong-Levinger

1979398 *Quantifying Readiness Gaps: A Multiscale Composite Index Framework for Flood Resilience in Mississippi:* **U Bhatta**, N G Pricope

1863055 *Research on the Algorithm for Identifying Seepage and Piping Hazards of Embankments by Coupling Thermal Infrared Remote Sensing and Deep Learning Technology:* **R Li**, S Qi, Z Wang Prof

247661
Assessing Tropical Cyclone Hazards and Risk in a Changing Climate System *(joint with A, GC, H, SY)*

Conveners: **Shuai Wang**, University of Delaware; **Hiroyuki Murakami**, University Corporation for Atmospheric Research; **Wei Zhang**, Michigan State University; **Chenxi Hu**, The University of Texas at Austin

1895493 *A Hybrid Physics-based and Machine Learning Approach for Hurricane Wind and Rainfall Hazard Assessment:* **A Gori**, Y Weng

1851544 *A New Post-Identification Approach for Tropical Cyclone Tracking:* **G Li**

1905763 *Analyzing Cyclone-Prone Settlement Patterns along the Bay of Bengal Coast Using Nighttime Light Data:* **S Eanan**, L J Marzen

1847423 *Anomalous Land Heatwaves at Coast is Explained by Marine Heatwave–Tropical Cyclone–Heatwaves over Land Event Chains:* **P Ganguli**, N Lin

1956202 *Assessing Vulnerability and Capacity of Coastal Community of Baliapal Block: A Study of Balasore, Odisha:* **S Verma**, D Tripathi

1984034 *Building Confidence in Modeled Wind Risk: A Claims-Based Evaluation of the First Street Wind Model:* **D Melecio-Vazquez**, Z Flamig, J P Kossin, E J Kearns, B Zambri

1988269 *Coastal Erosion Under Tropical Cyclone Waves in a Changing Climate: The Role of Sea Level Rise:* **R Marsooli**, M Jamous, A A Al Azad, C M Appendini, P R Salcines, R Duran

1851254 *Decadal Variability in the Characteristics of the North Indian Ocean Pre-monsoon Cyclones and its Ambient, Climatological and Tele-connection Reasons:* **G Zahid**, R Harikumar Dr

1904772 *Development of Geospatial Digital Twin Platform for Coastal Disaster Prevention and Management:* **H S Lim**, M Han, H Choi

1882153 *Sensing Mean Radiant Temperature in Arizona Public Gardens to Evaluate Human Thermal Exposure During Heat Waves:* **P Price**, A Middel, J Vanos, P Coseo

1876142 *Spatial Selection Undermines Flood Protection in U.S. Wetland Markets:* **I Roychowdhury**, F C Moore

1859152 *The resolution of risk: covariance-informed spatiotemporal clustering improves the detection of hazardous weather events:* **H C Quintal**, A Sebastian, M L Serre, W Jäger, M C de Ruiter

1942425 *Toward Developing Risk-Consistent Seismic Design Maps for Taiwan:* **H J Liu**, Y N Huang

1849787 *Towards Disaster-Responsive Environmental Impact Assessments:* **V Bhanwala**

1868066 *Downscaling Projections of Future Post-Tropical Cyclone Activity over the North Atlantic:* **D Y Li**, K Reed, S J Camargo, C Y Lee, C M Zarzycki, B Fosu

1910601 *Future Climate and Urbanization Amplify Typhoon-Induced Compound Flood Hazards:* **Z Tian**, J Liu, L Sun, S Dobbie, A N Ross

1996091 *Global assessment of tropical cyclone risk for real estate portfolio analysis:* **T L Hsieh**, Z Flamig, E J Kearns, J P Kossin, K Emanuel

1846672 *Global Warming Influences on Intense Tropical Cyclones in the Arabian Sea: Convection-Permitting Model Experiments:* **A Pathaikara Mana**, M Lee, S K Min, D H Cha, D S R Park, S I An, R M Koll, R Attada

1891285 *How Model Resolution Influences Modeling of Tropical Cyclone-Related Precipitation?:* **S Zhao**, H Murakami

1882791 *Increasing Tropical Cyclone Rainfall and Landslide Risk in Southern California:* **L Zhu**, Y Wang, K Emanuel, S Tolstoff, N S Diffenbaugh

1901082 *Industrial Hazards and Increasing Storm Surge Risk Along the Coast of Florida:* **E Angell**, A Hoffman-Hall

1998542 *Interpretable Machine Learning for Tropical Cyclone Genesis and Track Prediction over the Bay of Bengal:* **A Gupta**, S Pentakota, D Kundu

1896202 *Modeling Philippine Tropical Cyclone Wind Hazard in Present and Future Climates:* **A Ocampo**, S J Camargo, A H Sobel

1967593 *PepC-Global: A Basin-Tuned, Environment-Dependent Probabilistic Tropical Cyclone Model:* **C Gao**, N Lin

1909597 *PROLONGED INLAND PROPAGATION OF PRE-MONSOON TROPICAL CYCLONES OVER THE NORTH INDIAN OCEAN: CHARACTERISTICS AND IMPLICATIONS:* **A K Jena**, M R Behera, S Vk

1864387 *Quantifying Riverine Sediment Transport due to Tropical Cyclones in the Eastern United States:* **L Vieira Lucchese**, J Gardner, C J Gleason, A Sebastian

1850901 *Recent Reduction in the Frequency and Intensity of Rapid Intensification of the Tropical Cyclones over the West Coast of the Bay of Bengal during October-December:* **A Sahoo**, G M S

1951821 *Revisiting Underlying Techniques for Statistical Dynamical Downscaling of Tropical Cyclones:* **A Bolivar**, C Zarzycki

1997238 *Role of Physical Oceanographic Parameters in Impacting the Cyclogenesis over Indian Ocean:* **A Gupta**, D Kundu, S Pentakota

248198
Bridging Disciplines: Architecture, Engineering, and Climate Science for a Resilient Future

Conveners: **Joshua Weinberg**, American Geophysical Union; **Heather Goss**, American Geophysical Union

1852878 *AI-Enhanced Prediction of Microscale Cooling Performance in Water Spray Systems:* **T Kim**, J Kim

1884445 *Analyzing Thermal Performance of Climate-Resilient Structures Such as Mud Houses & Comfort Analysis of the Residents Using ML Models:* **H Kabir**, M E Ahmed, A R Rahman, B C Mazumdar

252947
Climate-Informed Risk Assessment for Extreme Events *(joint with A, GC, H, IN)*

Conveners: **Joshua Hacker**, Organization Not Listed; **Patrick Harr**, Jupiter Intelligence

1903958 *A Hierarchical Bayesian Spatial Framework to Assess Nonstationary Rainfall Intensity, Frequency, and Duration in Texas:* **Y Lu**, J Doss-Gollin, J W Nielsen-Gammon, B S Lee

1908972 *City-Level Heat Stress in Bangladesh: Historical Patterns and Future Climate Projections:* **F I Mou**, A S Islam

1968147 *DeepRisk: An End-to-End AI-based Framework for Real-time Decadal Projections of Extreme Weather and Climate Risk and their Uncertainty Across Assets at Multiple Scales and Fidelity:* **S Hazarika**, M Darman, S Mursel, A K Chattopadhyay, R Vuppala, A Wong, S Misra

1974624 *Designing for Tropical Cyclone Wind Loads under Non-Stationary Climates:* **C Blackshaw**, N Lin

1893586 *Seasonal Forecasts of Tropical Cyclones Using GFDL SPEAR and HiFLOR-S:* **H Murakami**, T L Delworth, N Johnson, F Lu, C McHugh, L Jia

1918438 *Skill assessment of regional and sub-basin seasonal tropical cyclone activity in the CMCC-SPS3.5 model:* **G Giuliani**, L Cavicchia, S Pascale, S Gualdi, A Sanna, P L Vidale, E Scoccimarro

1974747 *Spatiotemporal Assessment of Tornado Impact on Power Transmission Infrastructure in Colorado (1950–2024):* **B Mohammed**, C P Gupta, R Karki

1937816 *Tides and Predecessor Rainfall Primed Typhoon Flooding in 1905 Shanghai:* **S Wang, PhD**

1939177 *Unraveling Global Landfalling Tropical Cyclone Decay Trends and Drivers:* **C Hu**, X Sui, D Niyogi, C Dawson, Z L Yang

1997954 *Building Climate-Informed Hourly Profiles for a Resilient Future via the Co-Produced Cal-Adapt: Analytics Engine:* **O M Doherty**, J Roman, V Ford, N Keeney, C Chen, A C Ordonez, M D Koenig, N L Freitas, J Bui, K A Jagannathan, A Conrad-Saydah, W Krantz

1999769 *Evaluating the Influence of Residential Complex Morphology on Urban Heat Island Intensity in Los Angeles, CA:* **H Razavi**, S Sheikhfarshi

1851795 *Quantifying Human Thermal Comfort Impacts of Urban Surface Material Changes using CFD and UTCI Framework:* **J Kim**, S Park, G Lee Sr

1849038 *Global supply chains amplify economic costs of future extreme heat risk:* **Z Shupeng**, Y Sun, D Wang, D Guan

1955379 *Louisiana Multi-Hazard Web Map:* **L P Kunku**, C J Friedland, R B Mostafiz, M Franks, S Kleinpeter

1992089 *Natural Hazard Vulnerability and Wealth Inequality: A Geospatial Analysis of Socioeconomic Disparities and Natural Hazard Outcomes Across CONUS Counties:* **Y Yu**, D Connor, S Meerow, M Gall, J Elliott, A Flores

1957381 *Next-generation tropical cyclone risk modeling: an integrated, scalable, and climate-responsive approach:* **J Rogers**, H Hampson, A Hoffman, H Scannell, E Dennis, J Oyler, C McNicholas, E Perry, A Kapoor, M Woelfle, J Pucciarelli, J Exby, S R Sain

1980401 *Quantifying Rapidly Growing Chronic Perils' Physical Risk:* **M Khater**, A Bagnell, A Wang, H Vepuri, J Sam, L Vulis, R Siddique, U Thapa

1923936 *Reliably Simulating Extreme Events with Machine Learning Weather Models:* **G J Hakim**, Z Meng

1940031 *Selecting GCMs for fire regime modeling: accounting for spatial and temporal variability in climate:* **A Cale**, B W Sullivan, E J Hanan

1846307 *The effect of wildfire on drinking water quality:* **J Blumberg**, T Warziniack, M Merritt

252471
Community Session for Wildfire Science and Technology Commons - Open Collaborations for a Wildfire Resilient Future *(joint with GC, IN, SY)*

Conveners: **Claire Stirm**, UCSD/Scripps Institution of Oceanography; **Ilkay Altintas**, University of California San Diego; **David Saah**, Spatial Informatics Group, LLC; **Marissa Christiansen**, Climate & Wildfire Institute

1999571 *The S.M.O.K.E.Y. Drone: An Autonomous Wildfire Detection System:* **G Enghauser**, S Khosa, A Scott, A Kock, P Kandula

1896804 *A Statistically-Based Model of Global Wildfire Risk in a Changing Climate:* **H Song**, Z Flamig, C W Ross, K Fuller, P Cunningham, J T Abatzoglou, E J Kearns

1960999 *Accounting for Wildfire Hazard Mitigation Efforts in California:* **K Greenspan**, B Franklin

1915716 *AI and Soil Moisture Insights: Predicting Forest Fire Risk in Nepal:* **B Pathak**, B Khadka, B Bimali, B Ghimire, P K Bhattarai, P K Shrestha, P Banjara, O Rakovec

1952598 *Deep Learning and Explainable AI for Mapping Wildfire Susceptibility in Florida:* **N Ghimire**, G Golmohammadi, S M Biazar Seighalani, S Shaghaghi Khajehdehi, G S Tiwana

1951425 *Deep learning based wildfire prediction from an ecological perspective:* **S Kim**, D K Lee

1994376 *Deep Learning-Based Spatiotemporal Models for Bushfire Detection Using Himawari-9 Satellite Data:* **H AL-Najjar**, Z Yang, B Kalantar, G Beydoun, N Ueda

1949835 *Drought, Agriculture, and Fire: Structural Drivers of California's Wildfire Crisis and the Need for Policy Reform:* **W Song**

1954213 *From Orbit to Action: FireSat's Early Adopters are Helping Shape the Future of Data-Driven Wildfire Response:* **A Kapusta**

1975806 *From Street to Sky: A Comprehensive, Open Imagery and 3D Model Dataset of the Impacted Communities of the 2025 Eaton and Palisades Fires:* **K Dedinsky**, D Abramson, E Austin, J Berman, B Cetiner, R Chen, N Cutler, D P Eisenmann, N Elhami Khorasani, N Errett, E Fischer, M Grilliot, J Horney, J Hutchins, M Korfmacher, A W Lyda, E Taciroglu, J Wartman, E Wilson, J Zdebski

1905836 *The Potential of AI Models to Forecast Regional Gray Swan Extreme Events:* **Y Q Sun**, P Hassanzadeh, A K Chattopadhyay, M Zand, D S Abbot, J Weare, H Alizadeh Pahlavan, T Shaw

1953851 *Modeling staged wildfire evacuation in wildland-urban interface communities with transient populations by coupling wildfire and traffic simulation models:* **M Maha Gamage**, D Li

1889825 *Modernizing the management and policy framework to prevent future catastrophic wildfires in China:* **J J Li**

1899285 *Municipal-Scale Monthly Forest Fire Risk Mapping Over a Decade at 500m Resolution Using Deep Learning: A Case Study in Southwest China:* **Z Huang**, A Gong

1942011 *NASA's Fire Information for Resource Management System (FIRMS): Enabling Global Wildfire Management Through Collaborative Earth Observation Technologies:* **D Davies**, J Hewson, B Quayle, O Olsina, A Radov, D Mendes, L Giglio, J Hall, S Devadiga

1945726 *Predicting Wildfire Escalation Risk and Suppression Difficulty with Machine Learning:* **Y Kim**, S Lee, K Suh

1958253 *Spatiotemporal Wildfire Risk Prediction in California with a Hybrid Graph-Temporal AI Approach:* **F Kordi**, H Alemohammad, PhD, J Rogan

1886218 *Towards an Earlier Fire Detection by using Advanced Geostationary Satellite Data and Methods:* **V Tramutoli**, R Colonna, V E Di Leo, A Falconieri, C Filizzola, M Lisi, F Marchese, G Mazzeo, N Pergola, C Pietrapertosa

1901271 *Understanding the Role of Cultural Background in Shaping Wildfire Risk Perception in WUI Communities:* **K Ojha**

1967076 *When open data feels the heat: lessons from wildfire exposure and risk maps in Alaska:* **J Schmidt**, J Delamere

1870999 *Design and Development of Modular Sensor Suites for Environmental Hazard Monitoring and Research via Unmanned Aerial and Terrestrial Vehicles:* **A Dwivedi**, P Kamble

1868482 *How to Prevent a Water Contamination Crisis: A Data-Driven Analysis of Water Utility Response Following the 2023 Maui Wildfires:* **C K Shuler**, L McLatchy, A J Whelton, J Stufflebean

1856751 *AI for Climate Change Adaptation: Analyzing Machine Learning's Role in Combating California's Wildfires:* **N Lehmer**, N Anguelov

1852899 *Scaling Open Science and AI for Wildfire Resilience: Operationalizing the Wildfire Commons Community-Driven Model Through the AI Collaborative, Pyregence, and Planscape:* **D S Saah**

249228
Compound and Cascading Extremes: Understanding & Predictability for enhanced resilience *(joint with H, IN)*

Conveners: **Somnath Mondal**, Northeastern University; **Sushree Swagatika Swain**, Scripps Institution of Oceanography; **Goutam Konapala**, NASA Goddard Space Flight Center; **Daniel Fiifi Tawia Hagan**, Ghent University; **Sudhanshu Kumar**, Auburn University

1929498 *Quantifying the Role of Vegetation Structure in Tree Trimming Effectiveness on Grid Resilience:* **S A Saki**, K Udeh, X Zhang, E N Anagnostou, V Anderson, D Cerrai

1999763 *Advancing Understanding and Prediction of Drought-Heat-Wildfire Extremes:* **Y Yin**

1990185 *Arctic Lake-Permafrost Compound Extremes: Multivariate Analysis of Temperature and Active Layer Depth:* **R Jane**, M Nagaraj, P Devò

2001167 *Assessing Compound Hazards: Integrating Fire and Post-Fire Debris Flow Risk in Southern California:* **S Babagiray**, A AghaKouchak, A Hjelmstad, J Duku, A Boschee, D Y de Oliveira

1846576 *Atmosphere-Lithosphere Interactions in Tectonically Active Regions: Evaluating Seismic Triggers from Tropical Cyclones:* **E Gebremichael**

1867018 *Automated Workflow for Climate Data Processing and Impact Attribution Using CDS and EU-Supported Datasets:* **P Terefenko, PhD**, J Sledziowski, D Paprotny, K A Tanwari, A Giza

250718
Compound Climate Events: Accelerating Hypothesis-Driven Science through Dataset Development and Analysis Techniques *(joint with A, GC, H, IN)*

Conveners: **Leila Rahimi**, South Florida Water Management District; **Carlo De Michele**, Politecnico di Milano; **Flavio Lehner**, ETH Swiss Federal Institute of Technology Zurich; **Colin Raymond**, University of California Los Angeles

1968708 *An Integrated Framework Towards Strengthening Transportation Infrastructure Resilience to Compound Flooding Impacts:* **D A Thakur**, M Nujhat, H Moftakhari, S Radfar, J Liu, H Moradkhani

1999275 *Assessing Compound Coastal Flooding from Storm Surge and Precipitation Using Hydrodynamic Simulations and AI Surrogates:* **M R Najafi**, A Shaygani, Y Taleghani, M Fereshtehpour, M Casas-Prat, J Cousineau

1923554 *Changing Patterns of Annual and Seasonal Hydroclimatic Extremes Across Kansas' Reservoirs:* **A Howlader**, S C Zipper, J Kastens

1929104 *Evaluating the Impact of Wildfire on Runoff using Automated Geospatial Watershed Assessment (AGWA) Tool: A Case Study of Eaton Fire, Los Angeles, California:* **F Rafi**, D Rowland, S Gao

1954892 *Flash Flood Alley Unleashed: Hydrometeorological Factors and Consequences of the Guadalupe River Catastrophe on July 4, 2025:* **A Bose**, C Furl, M Giacomoni, H O Sharif

1863769 *Flood after Fires: A Scalable Decision-Support Framework for Post-Fire Debris Flow Risk:* **M Kim**, A Dodd, J Radke, V Ulyashin, A Serra-Llobet, A Falzone, G M Kondolf

1935516 *Hydrometeorologic Analysis of Hyperclustered Flood Damage for Compound Risk Assessment:* **T Gu**, A Nayak, U Lall

1885922 *Modeling Cascading and Compounding Multi-Hazard Risks In A Changing Climate: An Explainable Boosting Approach Using CMIP6 Scenarios:* **K Shrestha**, P Lal, M M Rahman

1908551 *Projecting the Unequal Global Risk of Compound Hot-Dry Extremes:* **D Cai**, G Lohmann, M Ionita

1942025 *Rapid Transitions in Soil Moisture Extremes Across India, 1951–2024:* **P Sharma**, V Mishra

1850870 *The Role of Drought Early Warning Information Systems in Building Resilience to Drought:* **M D Svoboda**

1851764 *Towards a resilience framework for compound extremes and cascading failures:* **A R Ganguly**

1975519 *Assessing Future Compound Coastal Flooding Along the Pacific Coast of North America Using Multi-model Projections and Copula-Based Analysis:* **Y Taleghani**, M Fereshtehpour, M R Najafi, M Casas-Prat

1879084 *Beyond One-Size-Fits-All: Evaluating Flash Drought Detection Methods and Impact Assessment Across CONUS Catchments:* **G C Gesualdo**, M Madruga de Brito, A Hadjimichael

1939881 *Classification and Analysis of Flood Events from a Compound Perspective:* **J Zhao**, C De Michele

1856753 *Identification of Climatic Vulnerable Zones in the Phalgu River Basin, Middle Ganga Plain, India, Through Analysis of Demographic Shifts, Land Use Transformation, and Temporal Climatic Indices Using Non-Parametric Methods.:* **B Mohapatra**, P Singh Prof

1994824 *Integrating Data- and Process-Driven Approaches for Early Warning of Compound Climate Risks:* **M Reichstein**

1972201 *Multi-scale versus time scale-specific spatiotemporal dependency patterns among heavy rainfall events during the Indian summer monsoon revealed by complex network analysis:* **R V Donner**, G Bishnoi, C T Dhanya

1922524 *Remote sensing improves multi-hazard flooding and extreme heat detection by fivefold over current estimates:* **M Preisser**, P Passalacqua

1886292 *Spatio-temporal Dynamics of Propagation-induced Compound Droughts and Pluvials under Climate Change:* **H M Wang**, X He

249746
Compound, Consecutive, and Cascading Events: Challenges for Risk Assessment and Management *(joint with A, GC, H, OS)*

Conveners: **Sara Santamaria-Aguilar**, University of Central Florida; **Mona Hemmati**, Columbia University; **Colin Raymond**, University of California Los Angeles; **Eunkyoung Choi**, Colorado State University; **Pravin Maduwantha Mahanthe Gamage**, University of Central Florida

1910055 *From Definition to Action: Leveraging Climate Impact-oriented Indicators for Compound Hazard Assessment:* **S Silvestri**, M Marani, A Montanari, C Agnini, G Antolini, C Arrighi, A Barausse, G Bertoldi, G Besio, L G Biolchi, M Borga Sr, F Borile, E Bresci, E Caporali, C Carlini, L Carturan, G Cossarini, F Costantini, A Crespi, M Della Seta, P Devò, C Favaretto, G Freni, B M S Giambastiani, G Iacobucci, P Lazzari, A Lira Loarca, M Meli, M Michetti, D Molinari, C Morino, P Oddo, L Pezzolesi, L Piemontese, D Piacentini, A Piazza, N Pinardi, G Pisacane, M Pittore, M Reale, C Romagnoli, P Ruol, V Ruscitto, S Salon, M Sambito, A Serra, C Solidoro, M V Struglia, F Troiani, S Unguendoli, A Valentini, G Villani

1971548 *A Cumulative Perspective Reveals Urbanization Exacerbates Disparities in Exposure to Compound Extreme Heat–Air Pollution Events in China:* **J Li**, W Zhou, J Wang, K Chen, M Georgescu

1855458 *Beyond the Poison distribution: Global Analysis of Temporal Clusters of Storm Surges:* **A Martin Oliva**, R Jane, A Rodriguez Enriquez, T Wahl

1969758 *Characterizing Drought Synchronicity Across the Contiguous United States (1980–2021):* **L Nguyen**, M Ombadi

1867153 *Characterizing the Spatial Footprints of Cascading Dry Extremes: Compound Heatwave, Drought, and Fire Sequences:* **D Abella**

1952102 *Temporal Dynamics and Sequencing of Compound Drought Types:* **L Rahimi, PhD**, M Imani Borhan, A Mirdarsoltany

1919781 *The May 2023 Flood Events in Emilia-Romagna, Italy: A Compound-Event Perspective:* **C De Michele**, F Banfi, M P Russomando

1947749 *The Role of Soil Moisture and Rainfall Characteristics in Flash Flood:* **L Rahimi, PhD**, M Imani Borhan, A Mirdarsoltany

1969681 *Understanding Causes of Extreme Variability: Renyi Information Transfer in Analysis of Non-Gaussian Data:* **M Palus**

1932263 *Disproportionate Increases in Climate Risk Driven by Compound Drought-Heatwave Events in a Warming World:* **Y Kim**, S W Yeh

1849473 *Dry versus Humid Heat Seasonality and Drivers in the North American Monsoon Region:* **C Ivanovich**, B Cook, S S McDermid

1970211 *Evolution and Influences of Land-Atmospheric Coupling and Synoptic Drivers of Compound Droughts and Heatwave Events in The US Southern Plains:* **H O Olayiwola**, J C Furtado, J B Basara, J Christian, S Edris, J Lee, T M Grace

1923269 *From Entanglement to Action: Multi-Hazard Risk and Resilience in the U.S. Power Grid:* **R M McGranaghan**, S Lenhart, N LaHaye, S Blumsack, Y Marchetti, A Ganguly, J Watson, D M Tantary, A Dunant

1960613 *Future Projections of Tropical Cyclone-Heat Compound Events Using High-Resolution Global Climate Models:* **S Frucht**, J W Baldwin, C Y Lee, H Murakami, G A Vecchi, S J Camargo

1844962 *Impact of deer traffic on physical soil erosion and changes in infiltration capacity at forest edges:* **H Akita**, S Yusa, H Yokoyama, M Kawasaki, K Kamida, Y Usuda, M Ikeda

1993962 *Improving Messaging Coordination for Compounding and Cascading Hazards:* **M Hurwitz**, K Abshire, A Bruschi, J Lee, A Haynes, R Heffernan, H Hockenberry, D Nagele

1869039 *Increasing Synchronicity of Global Extreme Fire Weather:* **C Yin**, J T Abatzoglou, M W Jones, A Cullen, M Sadegh, J Wang, Y Liu

1922192 *Influence of Coastal Sea Levels and River Discharge on Water Levels in the Mississippi Delta:* **K P Sah**, S Santamaria-Aguilar, T Wahl

1948928 *Integrated Multi-Hazard Susceptibility Mapping across India Using U-Net Deep Learning Architecture:* **R** , V Tripathi, M P Mohanty, A Pandey, A K Gupta

1962976 *Investigating the spatial connections of compound flooding along the U.S. coastlines:* **M M Rashid**

1867812 *Leveraging Early Warning Systems to Manage Compound, and Cascading Climatic Events to reduce Food System risks in Bangladesh:* **F Parvin**, T Rahman, T Rifat, A Mahmud

1915073 *Progress and Challenges in Modeling Compound Events Associated with Hurricanes, Atmospheric Rivers, and Pollution Transport:* **M Huang**, Y Zeng, G R Carmichael, A Verhoef, J K Entin, V H Grassian, D T Kleist

2001899 *Quantifying Compound-event Risks to Power Grid Reliability:* **B Ho**, O Pfeiffer, T Ivancic, R Cirincione

1921748 *Rapid Assessment of Compound Flood Transition Zones using a Quasi-Static Flood Model:* **T Carasella**, R Jane, T Wahl, K Serafin

1916611 *Reframing Groundwater Resilience: A Data-Driven Risk Assessment Framework for Climate-Responsive Water Management in Southern Taiwan:* **W P Tsai**

2004749 *Research and Education for Cascading Hazards And Resilient Group Engagement:* **H Chang**, J Fink, L Frank, P C Loikith, A Hiller, A Streig, A Khosravifar, D Moug, Y Xiao, M Nation

1896198 *Simulating Urban Flooding Under Joint Rainfall and Coastal Forcing: A PCSWMM-Based Analysis of Harrison Avenue, Camden, NJ:* **A H Payab**, P M Mahanthe Gamage, T Wahl, F A Montalto

252763
Data Science for Weather and Climate Extremes: Risks, Drivers, and Impacts

Conveners: **Mukesh Kumar**, Los Alamos National Laboratory; **Sridhara Nayak**, Japan Meteorological Corporation; **Somnath Mondal**, Northeastern University; **Raju Attada**, Indian Institute of Science Education and Research Mohali

1978363 *A data-driven causal perspective on the origin of the 2021 Pacific Northwest heatwave:* **J S Pérez Carrasquilla**, M J Molina, J J Nichol, D L Bull

1855003 *A Global Database of Glacier Break-offs: Spatio-Temporal Patterns and Implications for Hazard Assessment:* **E Bashkova**, S Rupper, S Brewer, C Markovsky, R R Forster, S Wolvin, C Strong, D H Shugar

1906387 *A Multi-Parametric Heat Risk Assessment through Integrated Climate, Demographic, and Land Use Analysis: A Divisional-Scale Case Study from Bangladesh:* **F I Mou**

1908348 *Assessing the disparities in air conditioning use for heat management across Southern California:* **D Ramos Aguilera**, Y Wang, J Zhang, K Sanders

1861946 *Data Driven extreme weather event attribution using Granger causal inference:* **M F Wehner**, M D Risser

1869646 *Tracking Climate Extremes in California's Central Valley: Hotspot Shifts and Crop Resilience Strategies (1951–2025):* **S Fazli**, W Li, R Thomas, S Maharjan, M S Jahangir, A Daccache, H Morgan, H M El-Askary

1849643 *Tracking Multi-Hazard Footprints under Climate Change Using Machine Learning:* **M Sano**, D M Ferrario, S Torresan, A Critto

1955763 *Uncovering tropical cyclone–related flash flood patterns using text mining:* **Y Zhou**, C J Matyas, P Liu, H Li

1858389 *Understanding and managing complex hazards and risks:* **K J Mach**, A C Clement, M Hino, A Siders

1965801 *Understanding Compound and Cascading Hazards During Cyclone Remal in Coastal Bangladesh:* **M H Rahman**, F A Mishu, N Tabassum, M R Islam, Shampa, S B Murshed, S Haque, L T K Purnata, F Rahman, M Salehin

1920341 *United States Compound Weather Extremes and Their Climate Teleconnection Dependencies:* **A Aljoda**, N Dhakal, E Coughlan de Perez, G I T Masukwedza

1970267 *Which optimal sampling scheme is best for natural hazard modeling? Bayesian Quadrature vs Clustering-driven Optimal Sampling: A theory-driven investigation and stylized case study.:* **N Geldner**, D Johnson

1891411 *Discrepancies in Heat Metrics Across the United States:* **C Frank**, M Huber

1959295 *Extreme Humid-Heat Disentangling, Stickiness, and Responses to Local Sea Surface Temperatures in Future Climates of the Arabian Peninsula:* **D Bose**, C Tuholske

1904351 *FireConformer: Fine-tuning Continuous Transformer based Weather Forecasting Model for Wildfire Forecasting:* **H Saleem**, F Salim, C Purcell

1960854 *How Interpretable Machine Learning Advances Our Understanding of Climate Extremes and Their Impacts on Ecosystems and Infrastructure:* **W Zhao**, B Zhu, K W Bowman, J Fang, G Y Qiu, P Gentine

1857224 *Investigating Commonalities and Differences between Different Ignition Sources and Their Drivers: A Machine Learning-based Predictive Approach:* **Y Pourmohamad**, J T Abatzoglou, M Sadegh

1960298 *Investigating the Impact of Hurricane Helen on Turbidity Dynamics in the Tennessee River Using Remote Sensing Technology:* **A A A Hossain**, M Smith, M Shields

1960849 *Multi-Decadal Assessment of Hydrometeorological Droughts across Ravi River Basin:* **S Hina**, M Fatima, A Habib, A Arshad

1929807 *Natural variability was primarily responsible for the elevated January 2025 Los Angeles County fire weather risk:* **A K Srivastava**, M D Risser, P A Ullrich

1969673 *Operationalizing AI Weather Forecasts of Monsoon Onset for Farmers in India:* **K Kowal**, C Aitken, R Masiwal, A Marchakitus, M Gupta, W R Boos, A Jina, M Kremer, P Hassanzadeh

1935475 *Patterns and Trends of Wildfire Ignitions, Burned Area and Their Drivers in the Western United States:* **A Montazeri**, J T Abatzoglou, J Prestemon, Z Holden, K Short, A Akbari Asanjan, M Sadegh

1986603 *Rapid Disaster Response and Damage Estimation with Social Media and Pretrained Large Language Models: Insights from Multiple Hurricanes:* **B Zhou**, L Zou, M Yang, B Lin, D Mandal, J Abedin, H Cai, H Tian, A G Klein, S Ji

1951622 *River discharge and short-term forecasts of fire risk in Amazon Forests:* **A D D A Castanho**, D C Morton, M Machado, M T Coe, M Macedo

248532
Disaster risk cognitive science: Is there anything we can do for future landslide hazards in advance? *(joint with EP, H, NS, SY)*

Conveners: **Koichi Hayashi**, Kyoto University; **Gonghui Wang**, Kyoto University; **Shintaro Yamasaki**, Disaster Prevention Research Institute, Kyoto University; **Makoto Matsuzawa**, Kyoto University

1928948 *A Case Study of Investigation and Analysis on a Highly Active Landslide:* **K Shinjo**, H Ishida, K Hayashi, S Shiraki, Y Morita, T Aomatsu

1935041 *Analysis of Rainfall-induced Landslide Depth Patterns and the Effect of Slope Angle Using Airborne Laser Survey Data:* **Y Kudo**, T Uchida, Y Yamakawa, M Tsushima

1905469 *Application and Challenges of a Machine Learning-Based Zero-Order Basin Extraction Method for Preventive Maintenance Against Large-Scale Disasters During Havey Rainfall: A Case Study the 2024 Noto Peninsula Heavy Rain:* **M Yabe**, S Hamada, D Nobuoka, N Itoya, Y Katsume

1905096 *Challenges and Applicability of Geophysical Exploration Methods in Investigating Slip Surfaces of Large-Scale Landslides:* **H Ishida**, K Shinjo, K Hayashi, S Shiraki, Y Morita, T Aomatsu

1999306 *Debris Flow Hazard Analysis Caused by Climate Change-Induced Intense Rainfall in Vermont.:* **T Dutta**, E Ghazanfari, J Lens

1941042 *Disaster in Words and Images: Sentiment and Visual Framing of Landslides in Indian Media:* **H Mohammed S**, V V Binoy

1900325 *The application of climate projections to predictive failure modeling for electric infrastructure:* **E Kuhle**, R Muralidharan, O Kavvada

1861060 *The Complexity of Wildfire: Insights from Data-Driven Approaches.:* **M Forrest**

1908187 *Unveiling the Physical Drivers of Short-Term Heat-Cold Compound Extremes with Explainable Machine Unlearning:* **C Sun**, Y Chen, D Zhang

1951048 *Using Deep Learning to Constrain Coastal Subsidence with InSAR:* **R Bussard**, C Wauthier, R Housego, A Piliouras

1851079 *Using Machine Learning to Understand the Environments of Lightning-Ignited Wildfires in Northern California and their Recent Changes:* **L R Leung**, S S C Wang, Y Qian, R Grotjahn

1971493 *Vulnerability of U.S. Power Generation to Extreme Weather: A Data-Driven Analysis:* **Y Lu**, T Sun, R Rajagopal

1935699 *Instability of a Rainfall-Induced Landslide Driven by Pore Pressure Generation in the Basal Shear Zone:* **X Kang**, W Wu, S Wang

1999551 *Integrating SBAS-InSAR and Risk Modeling for Geohazard Surveillance in Nainital.:* **M Rautela**, V Mishra

1939655 *Investigation of Weathered Zone Related to Shallow Landslides Triggered by the 2024 Noto Peninsula Earthquake in Oku-Noto, Japan:* **M Matsuzawa**, T Watakabe, M Sato

1969641 *Landslide time-to-failure - Comparing rate-and-state friction laws:* **S Mukherjee**, P Bhattacharya, S Misra

1964826 *Numerical Simulation-Guided Machine Learning for Landslide Risk Assessment:* **S J Kang**, Z Sheng, Y Liu, O Owolabi

1871107 *S-wave velocity profiles estimated by active and passive surface wave methods at the Portuguese Bend Landslide:* **K Hayashi**, M Matsuzawa, A J Martin

1954821 *Satellite images reveal progressive slope deformation triggered by mountainous road construction in China:* **X Huang**, P Ma

1979391 *The coupled evolution of urban growth and landslide risk: Lessons from a century of disasters in Medellín, Colombia:* **E Aristizábal**, U Ozturk, S Nieto Ms, A Guerra sr, A Aguilar sr, J D Moreno

1934354 *Topographic and Lithological Controls on Landslide Size and Mobility:* **S Neranjan**, T Uchida, Y Yamakawa, A Kawakami

1939326 *Understanding Earthquake-Induced Submergence through Lake Biwa Shimosakahama Sengen Site and Global Case Studies:* **Y Qian**, S Yamasaki, K Hayashi, H Nakagawa

252993
Earth Observations for Monitoring and Assessment of Risk and Resilience of Communities and Infrastructure *(joint with GH, IN, SY)*

Conveners: **Margaret Glasscoe**, University of Alabama in Huntsville; **Bandana Kar**, Oak Ridge National Laboratory; **Albert Kettner**, University of Colorado Boulder; **ZhiQiang Chen**, University of Missouri Kansas City; **Guy Schumann**, ImageCat, Inc.

1994676 *A Hybrid Deep Learning-Based Tool for Policy-Informed Future Land Use Change Prediction:* **L Pal**, A Jadhav, V Shah, R Ghorbani, S Saksena

1864529 *Analyzing Post-Harvey Recovery through Nighttime Lights: A Case Study of Harris County, Texas:* **A Shakya**, M Davlasheridze, S Parker

1975084 *Assessing Global Multiple Hazard Impacts on Human Society with High-Quality Nighttime Light Remote Sensing Data:* **Y HU**, P Reich, K Grace, A Agrawal, D Yamazaki

1858847 *Assessment of deep learning models integrated with weather and environmental variables for wildfire spread prediction and a case study of the 2023 Maui fires:* **Y Hu**, J Kim, N Elhami Khorasani, K Sun, R Z Zhou

1973152 *Bridging Data Gaps for Resilience: Integrating Earth Observation and Socioeconomic Data for Flood Risk Assessment and Decision Support in Africa:* **G Amarnath**, K Jayamini, N Alahacoon, D Bhatpuria, S K Padhee, Y Umer, A Seid

1983295 *Daily Inundation Extent Forecasting for the Hindu Kush Himalaya by Combining Sentinel-1 SAR with River Discharge Information:* **F J Meyer**, K Knicely, V Devaux-Chupin

1914033 *EARTHQUAKE RISK MAPPING using PROBABILISTIC and EXPOSURE-VULNERABILITY MODELLING*[Sharmistha Sonowal1,3, Donato Amitrano2, Antonio Elia Pascarella3 , Ravi Kumar1,3, Giovanni Giacco3]*1Department of Civil, Building and Environmental Engineering, Sapienza University of Rome*[2]*Italian Aerospace Research Centre*[3]*Latitudo40:* **S Sonowal**, D Amitrano, A E Pascarella, R Kumar, G Giacco

1986848 *Evaluating Bridge-Adjacent Slope Stability Using a Multi-Resolution Remote Sensing Framework:* **A Khosravi**, Z Ghorbani, Y Maghsoudi, R Velasquez

1990557 *Evaluating Machine Learning Models for Predicting Post-Disaster Reconstruction Using InSAR: A Case Study of the 2015 Nepal Earthquake:* **S Loos, PhD**, S Kethireddy, P Burgi

1966895 *Evaluating the Feasibility of Using Nighttime Light Imagery to Detect Tornado-Induced Power Outages:* **M Appiah**, M Fankhauser, S Jia

1993884 *Finite Element Analysis and UAV-Based Thermal Monitoring of Prestressed Concrete Bridges: A Case Study on Temperature-Induced Structural Behavior:* **O Özcan**, O Ozcan, Y Gedik

1920152 *Harnessing CYGNSS for Humanitarian Impact: Co-Designing Flood Products for Disaster Risk Management:* **A Kettner**, B Downs, A Kruczkiewicz, N Rodriguez-Alvarez, C Zuffada

1887686 *Heat exposure of transit users in the three largest metro systems in the US:* **L E Ortiz**, A Ermagun, F Janatabadi

1846971 *Improving Risk and Hazard Assessment using Airborne and Spaceborne Observations of Surface Topography and Vegetation Structure:* **A Donnellan**, C L Glennie

1985301 *InSAR-Derived Land Subsidence at Louis Armstrong New Orleans International Airport:* **I Isiaka**, N S Daud Masungulwa, M Shirzaei

1986937 *Linking Ground Displacement and Moisture Estimates at Tailings Impoundments Using Sentinel-1 SAR Data:* **A Pierce**, N Ismail Medhat, K Marlor, T Oommen, S Paheding

1848601 *Mapping the Impact of Wildfire in the Pacific Palisades, California, Through Remote Sensing and GIS:* **M S Alam**

1927983 *Multi-Regional Geospatial Modeling of Land Subsidence in Louisiana Using InSAR and Machine Learning:* **A Abdalla**, D Kangah, C Dwira

1923366 *Pan-Arctic Exposure of Buildings to Permafrost Degradation Is Higher than Previously Estimated:* **E Manos**, C Witharana

1964369 *Sensory-Driven Blending and Machine Learning-Based Quality Assessment of Assam Tea: Toward Sustainable Food Evaluation and Security:* **O Sarma**

1947791 *The Design and Implementation of an Automatic Generation System for Comprehensive Service Materials of Meteorological Disasters:* **L Zhongliang**

1953811 *The role of satellite analysts in hazard response:* **E Smail**, W Schroeder, J Kibler, J Velasco, M Turk, I Zelo

1954678 *Uncovering Levee Failures: Remote Sensing Approaches for Early Detection:* **R Rajappan**, N Ismail Medhat, D Ghosh, P Bhaskar, T Oommen, A Puppala

252013
Emerging Technologies and Data-Driven Approaches for Informal Settlement Management and Risk Analysis *(joint with GC, IN, SY)*

Conveners: **Chang Liu**, Massachusetts Institute of Technology; **Fábio Duarte**, Massachusetts Institute of Technology; **Felipe Mandarino**, City of Rio de Janeiro; **Luiz Coelho**, Municipal Institute of Urban Planning Pereira Passos (IPP)

1950747 *A global 10-meter resolution map of informal settlements derived from satellite imagery and open datasets:* **S Jiang**, L Zhao, X Li

249172
Extreme Hazards across the Earth: Observations, Modeling, Outlooks, Mitigation, and Restoration *(joint with A, B, GC, H)*

Conveners: **Chul-Hee Lim**, Kookmin University; **Seung Hee Kim**, Chapman University; **Chang-Bae Lee**, Kookmin University

1935624 *Accuracy Evaluation of Sunshine Duration Estimation Using the Clearness Index:* **E KIM**, J Kim, Y G Lee

1972856 *Advancing Global Wildfire Hazard Assessment: A Data-Driven Approach:* **E Chaussard**, W Skene

1889703 *Agriculture in a Changing Climate: Policy and Empirical Perspectives from Sri Lanka and South Korea:* , P Jayaratne, S W Jeon, H C Sung

1986897 *Attributing Anthropogenic Climate Change: A Global Framework for Hydrological Disaster Risk and Damage:* **H Kim**, J Pak, E Goo, A Akhmetbek

1988347 *Beyond Risk: Mapping of Wildfire Evacuation Vulnerability in the Republic of Korea:* **C H Lim**, H E Lee, W Kim, S Kwon, J S Park

1889448 *Biotic and Abiotic Drivers of Aboveground Biomass in Broadleaved Forest Restoration Sites of South Korea:* **J Kwak**, C B Lee

1888710 *Cost-Effective Optimization of BMP Placement for Water Quality Improvement:* **Y Jang**, Y Kim, C Woo, N Tuvshinjargal, S Kim, S W Jeon

1931653 *Deep Learning-Based Automated Landslide Detection Framework: Fusing Multi-Band Optical and SAR Image:* **Y Roh**, C H Lim, D Yang

1935396 *Developing a Decision Support System for Climate Change Adaptation in Korea: Mitigating Extreme Hazards and Enhancing Societal Resilience:* **H Jung**, Y Lim, T Kim, J H Yoon, C S Park, H Chang, D K Lee

1937465 *A Novel Tunnel Settlement Risk Mapping Model Based on Ground Settlement and Multi-source Data Analysis:* **L Chai**, X Xie

1934022 *Enhancing Ventilation in Informal Settlements through LiDAR-Informed CFD Modeling:* **T Hermann**, F Duarte, M Mazzarello, C Ratti

1939223 *Evaluating Deep Learning Approaches for Refugee Dwelling Detection:* **S M Ahmed**, H Yin

1908015 *From Informal to Formal Settlements in Istanbul: Measuring Connectivity Loss:* **E Aksoy**

1973672 *Mobility Enthalpy: A Data-Driven Metric for Spatial Adaptation Burden Across Hazards and Informal Urban Systems:* **R Ding**, R Wang

1915637 *Developing an Environmental Disturbance Index for High Mountain Asia:* **M M Lummus**, L A Stearns, S Rupper, C Roychoudhury, K Y Kim

1955417 *Development of an Interactive Flood Risk Sandbox Tool Integrating Multi-Decadal Projections and Elevation Ordinance:* **L P Kunku**, C J Friedland, R B Mostafiz, M A Rahim, M Franks, Y Wang, J Brooks

1898797 *Future Flood Risk Assessment in the Contiguous U.S. Using IDF-Based Classification and Projections:* **Z Xu**, W Sohn, X Lan

1933927 *Geostationary Satellite-Based Monitoring of Volcanic Ash and SO_2 Plumes Using RGB Composites:* **J Choi**, Y G Lee

1982469 *Hourly Fire Hazard Forecasting in Hawai'i Using High-Resolution Weather Prediction:* **N Moisseeva**, S Businger

1860748 *Hydrological Tolerance of Two Restoration Tree Seedlings in Tropical Peatlands under Different Water Levels and Durations:* **H Yang**, M Cahya, F Adriansyah, I Irmawati, D Adriani, R Agus Suwignyo, E Choi

1908033 *Identification of Tree Pathogenic Fungi Associated with Slope-Stabilizing Vegetation and Their Implications for Landslide Prevention and Restoration:* **K M Koo**, G S Shin, J H Park

1932191 *Improved Topographic Effect Parameterizations for Fire Weather Forecasting over Complex Terrain:* **S H Kim**, Y G Lee, Y H Jo, M Kafatos

1915832 *Improving forecasts of the impact of wildfires before the flames:* **M Billmire**, M E Miller, S Liu, R Sechrist, P Robichaud

1942481 *Improving the global fire model for future projections of fire impacts on the biomass carbon sink:* **C Park**, A Akihiko, K Takahashi, S Fujimori

1889349 *Landslide Risk Analysis in Post-Wildfire Areas of Gyeongsangbuk-do, Korea:* **H NAM**, S Hong, W Kang

1883141 *Month-Ahead Fire Weather Index Forecasts with Deep Learning for Global Fire Risk Preparedness:* **S Lee**, Y Kang, D Cho, J Im

1905897 *Preventing Forest Hazards through Biomass Utilization: Predictive Optimization of Pine Saccharification via BBD-RSM and Machine Learning:* **S KIM**

1890593 *Rainfall-induced landslide hazard assessment using physically-based model: A case study from South Korea:* **N Chung**, S Park, D W Ko, Y Jeon

1963551 *Seismic Study of China-Nepal Floods Using the National Seismic Network in Nepal:* **B P Koirala**, L B Adhikari, L Bollinger, T Pokharel

1995013 *Spatiotemporal Assessment of Erosion Dynamics in Selected Coastal Towns of Bangladesh:* **N N Nasir**, M P Hossain, H M Muktadir, Shampa, A S Islam, M A Hussain

1883577 *Study on controlling factors affecting species richness of native herbaceous plants and seedlings in the herbaceous layer of forest restoration sites, South Korea:* **J Woo**, C B Lee, M Lee, Y Lee, H Chae

1868906 *Synthesis Study of Land Cover, Land Use, and Demographic Change in Southeast Asia - Project Progress and Results:* **S V Nghiem**

249364
Extreme Sea Levels: Modeling, Impacts, and Risk Management *(joint with EP, GC, H, SY)*

Conveners: **Ariadna Martin Oliva**, University of Central Florida; **Sönke Dangendorf**, University of Siegen; **Katherine Serafin**, University of Florida; **Alejandra R Enriquez**, University of South Florida Tampa; **Meghana Nagaraj**, Department of Civil, Environmental, and Construction Engineering & National Center for Integrated Coastal Research, University of Central Florida

1872611 *Advanced statistical extreme value models for sea levels: A novel approach for selection of independent events:* **S Sithara**, C Favaretto, P Ruol, M Marani

1935496 *Assessing Future Storm Surge Hazards on U.S. Coasts Through Statistical Downscaling of Climate Projections:* **M K Amin**, H Moftakhari, G Boumis, H Moradkhani

1926157 *Assessing the Impact of Sea Level Rise and Increased Storminess on Flood Risk in Norfolk, Virginia Using the Integration of the ADvanced CIRCulation (ADCIRC) Hydrodynamic Model into GIS:* **R Weghorst**, H N Christensen, Q Zhu, M Reidenbach

1891451 *Testing the M8 earthquake prediction algorithm: The 2025, M7.7 Myanmar earthquake:* **V G Kossobokov**, A Nekrasova

1930608 *The Hidden Threats: Why Ensemble Climate Change Scenarios Underestimate Landslides Probability:* **H K Ahn**, C H Lim, H D Choi

1903294 *Thermal Comfort-Based Assessment of Urban Heatwave Resilience: A Case Study of the Seoul Metropolitan Area:* **S Kim**, I Kim, Y Kim, N O Lim, Y Shin, Y Jang, S W Jeon

1915575 *Towards Equitable Wildfire Forecasting for Vulnerable Communities:* **Y Kang**, S Lee, D Cho, J Im

1934184 *Utilization of GEMS and OCO-3 data on the CO2 emission estimation in Asian Urban areas:* **Y G Lee**, J Kim

1885870 *Wildfire Burned Area Mapping with MODIS and Landsat 8 in Google Earth Engine: A Performance Comparison of Random Forest and Support Vector Machine:* **T E Kwon**, G Thurston

1905656 *Wildfire Risk Mapping on Oahu in Hawaii to Reduce the Impact of Wildfires on Communities:* **S M Bateni**, S Janizadeh, F Sajedi Hosseini

1902004 *Compound Effects of Synthetic, Low-frequency Tropical Cyclones and Sea Level Rise Scenarios on Nonlinear Tide–Surge Interactions:* **M S Sakib**, D F Muñoz, T Wahl, J L Irish

1979744 *Drivers of Water Level Variability and Flooding in Back-Barrier Estuaries:* **N Nwogwu**, P M Orton, R Marsooli, T Herrington, S A Talke, T Wahl

1936506 *Estimating Fine Resolution Local Sea Level Scaling Factors Using Ensemble Deep Learning:* **F Maghsoodifar**, H Moftakhari, W Sweet, J Obeysekera

1858716 *Extreme Sea Levels from One Million Synthetic Hurricanes, Modeled Efficiently with Deep Learning:* **J Rice**, K Balaguru, M Deb, B Daniel, J Wilson, D Judi, L R Leung

1999113 *From Tides to Extremes: GESLA-4 Sets a New Benchmark for Global Sea-Level Analysis:* **I D Haigh**, S A Talke, M Marcos, T Wahl

1876239 *Integrating Agent-Based and Life Cycle Modeling to Evaluate Engineered, Nature-Based, and Hybrid Coastal Adaptation Strategies:* **M Abdelhafez**, H Mahmoud, B Ellingwood

1897678 *Is the Sea Level Fingerprint of Terrestrial Water Storage via Dam Impoundment Visible in the Global Tide Gauge Record?:* **S Ludtke**, P J Huybers, J X Mitrovica

1919233 *Modeling Salinity Intrusion in the Gorai-Pashur River Network Under IPCC AR6 Projected Sea-Level Rise Scenarios:* **S M T Zahid**, S Dey, K M A Hossain

1895497 *Reconstructions of Hurricane Storm Tides Along the US Coastline From 1940 to Present:* **A Gori**

1918931 *Spatiotemporal Analysis of Local and Remote Storm Surge Dynamics: A Case Study of Tropical Storm Alberto (2024):* **F Hasan**, A Gori

1913174 *Statistical Modeling of Hydrometeorological Events in Poorly Gauged Coastal Areas:* **P Devò**, T Wahl, M Marani

248648
Fostering Resilience in Communities with Geohazards *(joint with A, ED, GC, H)*

Conveners: **Ella Neumann**, Georgia Institute of Technology; **Adelaide Johnson**, Self-Employed; **Lindsey Pierce**, Central Council of Tlingit and Haida Tribes of Alaska, Environmental Coordinator; **Melenda Lekanof**, Yakutat Tlingit Tribe, Council Member

1998174 *Social Media Networks in Support of Geohazard Preparedness: Collaborative Community Response to Disaster on Hawai'i Island Through Physical and Digital Resilience Hubs:* **P Ong**, D DuPont

1880176 *Cascadia Culture And geoScience Exchange (CCASE): Building Community Resilience to Cascadia Geohazards and Fostering STEM Identities of Indigenous Youth:* **J Grossman**, M C Lucas, R Parra, A Horn, A Ryan, H Keedy, S Fasola, H J Tobin

1985002 *Empowering Vulnerable Communities through Inclusive, Community-Based Landslide Early Warning Systems: Lessons from the Dynaslope Project in the Philippines:* **M Teodoro**, R A Kaimo, C Cordero, S Joan, A Daag, J Perez

1907302 *Experimental Mapping of Debris Flow Extents in Wayanad, India Using VolcFlow.:* **K Sharma**, M Van Wyk De Vries, Y Chen, C K Vishnudas

1973564 *Incorporating Youth Perspectives into Disaster Planning: Piloting Drone-Based Photovoice (DBP) to Map Community Assets:* **M Korfmacher**, D Abramson, N Errett, A Mirante, R Patel

1901236 *Integrating hydrodynamic modelling and System Dynamics: A Framework for Assessing the Dynamic Resilience of Socio-Economic Systems to Flooding:* **A Shanko**, F Castelli, A M Melesse

1992097 *STORM-DRIVEN CONTINENTAL SHELF SEICHES AND ASSOCIATED HAZARDS:* **T T Trinh**, P M Orton, S A Talke, M Ayyad

1849408 *Tracking Coastal Water Level Extremes from Space: A Global Assessment of Satellite Altimetry Products:* **G Quadrado**, T Wahl, A R Enriquez, M Nagaraj

1917057 *Understanding the Role of Storm Seasonality and Tidal Variability on Extreme Coastal Water Levels:* **C Jackson**, A Gori

1953128 *Unraveling Regional Differences in Storm Surge Hydrographs and Characteristics Along the U.S. Coastlines:* **A Alipour**, J L Irish, R Weiss, D F Muñoz

1856308 *Integrating Remote Sensing and Multi-Criteria Decision Analysis for Basin-Wise GLOF Susceptibility Mapping in the Western Himalayas:* **R Ahmed**, A V Kulkarni

1989667 *Landslide Hazard Assessment for a Vulnerable Community by an Undergraduate Natural Hazards Course:* **M P Dahlquist**, L Aronson, B Bell, M Congeni, M Gallivan, C Ganter, S Goetze, C Hagler, M L LeMieux, B Middendorf, E Muller, H Nash, O O'Neill, S Parker, B Pond, S Rogers, O Root, Z Smart, A Sponsler, C Teague, J Thomas, M Thompson, E D Tillman, C Vaughan

1934824 *Noondawind: Web Platform to Strengthen Tribal Resilience and Manoomin Preservation:* **A Cabral**, J McKenna, S J Carter, J Graveen, J Hester, K Marion Suiseeya

1873800 *Rivers in the Sky, Landslides on the Ground: Community Science on Prince of Wales in Southeast Alaska:* **D Nash**, A C Johnson, S Isaak, E Aboudara, M Christopherson, X Lawnicki, R Plescher, N Mathews, J J Roering, C Udell, A Ord, L Silva, L Bell, L Pierce, K M Prussian, J Hanlon, A B Jacobs, J Foss

1847068 *Simulating flood resilience with an Agent-based model in the Vietnamese Mekong Delta:* **T P Ho**, L Yang

2002086 *Temporal Effects of Major Floods on Social Vulnerability Across U.S. Counties:* **M A Khan**, A Zia, S Merrill, T Shrum, R Soares, R Quainoo, J Balerna

1954205 *Used and useful: Usability research on geohazard event pages:* **M Macias**, S McBride, A Davis, L Palermo, E Hunter

1881953 *When Rain Falls, Communities Rise: Tracking Precipitation Together:* **E Neumann**, L Silva, L Bell, A C Johnson

253325
Gilbert F. White Distinguished Lecture

Conveners: **Christelle Wauthier**, The Pennsylvania State University; **Christelle Wauthier**, The Pennsylvania State University; **Guido Cervone**, The Pennsylvania State University; **Vesta Afzali Gorooh**, University of California, Irvine

247357
Global Flood Damages and Underlying Drivers *(joint with H, SY)*

Conveners: **Seon-Ho Kim**, Department of Civil Engineering, The City College of the City University of New York, and CUNY-CREST; **Naresh Devineni**, NOAA Center for Earth System Sciences and Remote Sensing Technologies (CESSRST); **Stacey Archfield**, USGS Office of Groundwater; **Chandramauli Awasthi**, North Carolina A & T State University; **Seon-Ho Kim**, Department of Civil Engineering, The City College of the City University of New York, and CUNY-CREST

1919495 *A Geospatial Analysis of Flash Flood-induced Agricultural Loss and Damage Using Satellite-derived Disaster Vegetation Damage Index (DVDI) in Feni District, Bangladesh:* **S R Singha**, K M Ibtehal, M F Methila, M K Das, S F F F Sowrav, P Biswas Paul, S Hossen, S T Ovi, A R Shawon

1940095 *A Spatially- and Temporally- Disaggregated 21st Century Global Flood Record for Flood Impact Analysis:* **N Keeney**, F V Davenport

1905944 *Assessing the global economic impacts of flood-induced business interruptions and their potential propagation through international trade:* **S Mtibaa**, K Maeno, K Islam, M Motoshita

1849019 *Demystifying Future Floods Amidst the Fog of Climate Model Simulations:* **A Sharma**

1893716 *Extreme ffood events in the Yi and Shu river basins of the Haidai region (Shandong Province, China) during the late Holocene:* **X Miao**, T Shi, S Wang, Y Su, P Chen, H Shen

1985806 *Projecting Near-Term Changes in Global Flood Risks:* **J Hwang**, K Bae, C Awasthi, S Fang, S Kim, N Devineni, S Arumugam

249582
Hurricane Katrina 20 Years Later: Turning Tragedy into Resilience *(joint with A, GC, PP, SY)*

Conveners: **Joshua Bregy**, Clemson University; **Davin Wallace**, University of Southern Mississippi; **Clay Tucker**, University of Southern Mississippi; **Jill Trepanier**, Louisiana State University

1926831 *A Coastwide Risk Reduction Hindcast: Katrina to Present:* **B McMann**, J Fischbach, D Johnson, P Kane, O Diaz, M Bregman, D Di Leonardo

1987651 *Assessing resilience of the Gulf Coast through sediment records: What we know about Holocene sea-level rise and storms, and what it may mean for Alabama's future:* **R L Totten**, D J Wallace

1916486 *Community-Based Assessment of Spatial Vulnerability in Coastal Mississippi:* **S Han**, S Mun, N Lee

249784
Hydrometeorological Extremes in Data-Scarce Arid Regions: Modeling, Observation, and Risk Assessment *(joint with H)*

Conveners: **Myriam Benkirane**, Mohammed VI Polytechnic University; **Nabil El Mocayd**, Mohammed VI Polytechnic University; **Abdelaziz Chaqdid**, Mohammed VI Polytechnic University; **Raja BEN Harraf**, Mohammed VI Polytechnic University

1904203 *A Comparative Study of Flood Inundation Mapping using Coupled Hydrologic-Hydrodynamic Modelling and SAR-based Remote Sensing in the Kabul River Basin, Pakistan:* **M Adnan**

1963125 *A Hybrid Copula-Bayesian Network Approach to link propagation from meteorological to agricultural drought in the North African semi-arid region:* **Y Dahhane**, V Ongoma, A Hadri, M H Kharrou, A Chehbouni

1906199 *Advancing Hydrometeorological Networks in Arid and Semi-Arid Lands: Demonstrating River Flow Regeneration in ASALs through Output-Led Validation of Satellite-Based Hydrological Simulation.:* **F Mongo**, S Seto

1867486 *Assessment of Drought Spatiotemporal Dynamics over Morocco:* **A Oubaha**, V Ongoma, B Ait Hssaine, L Bouchaou, A Chehbouni

1966912 *Climate-informed sediment transport prediction using a GAN-based approach (ExGAN):* **N Lachhab**

1850785 *Earth Observation-based tools for improving water management in data-scarce regions:* **N M Velpuri**, M D Leh, A Owusu, K Akpoti, K Mekonnen, D Wickramasinghe, P Thilina-Prabhath, L Maduskanka, T Perera, M Dembélé, M Perera, P Tinonetsana, E Mortey, P Schmitter, A Seid

1873730 *Extreme Intermittency in Arid Regions: Climate Networks, AI and Multifractals:* **D J M Schertzer**, J Kurths, H Zhou, A J Thomas, I Tchiguirinskaia

1918053 *Hydrological Response to Climate Change in a Semi-Arid Basin: A Case Study of the Tensift Watershed (Morocco):* **H Bouamri**, M H Kharrou, H Bate, O Jaffar, E M El Khalki, A Chehbouni

1966345 *Improving Spring Flood Simulations in a Mountain Basin with SWE Assimilation and Temperature-Index Modeling:* **M Benkirane**, N El Mocayd

1864199 *Investigation of Dam Siltation Dynamics in Arid and Semi-Arid Regions: Case Study of the Assif El-Mal Watershed, Morocco:* **M Abidare**, L Daoudi, A Rhoujjati, N Fagel

247735
Impacts and Resiliency of Coastal Ecosystems to Transient Disturbances *(joint with H, OS)*

Conveners: **Z. George Xue**, Louisiana State University; **Kanchan Maiti**, Louisiana State University; **Xinping Hu**, Texas A&M University - Corpus Christi; **David Lagomasino**, East Carolina University; **Xiaochen Zhao**, Louisiana State University

1983606 *Assisted migration of coastal vegetation dominants in a south Texas estuary:* **L Battaglia**

1903619 *Biodiversity Loss Under Rainfall Deficit Undermines Coastal Wetland Stability:* **X Wang**, L Yan, M Jiang, Z Wang, H Li, J Shi, W Liu, G Han, J Xia

1984318 *Characterizing Forest Response Pathways in the Blackwater National Wildlife Refuge Region:* **S Typrin**, B Alveshere, L Haber, K Preisler, M Martinez, C M Gough

1976541 *Circulation of Fecal-contaminated Floodwaters in Back-barrier Bay Marshes Following Tidal Floods:* **A Jacobson**, T Thelen, K Anarde, E Farquhar, N Nelson, A Harris, D J Grimes, B Middour, N Volp

1996216 *Enhanced estuarine respiration caused by coastal vegetation die-off after a winter storm:* **X Hu**, C Amos, Z Liu

1855063 *Morphometric Analysis for Prioritizing Sub-Watersheds Based on Fuzzy Analytical Hierarchy Process and Geographical Information System, Case Study of Ouerrha Watershed, Morocco:* **B Layan**, B Bougdira, M ben Abbou

1853847 *On the Use of Inverse Hydrology to Improve Flood Modeling in Data Scarce Regions:* **H Bougrine**, M Benkirane, N El Mocayd

1980829 *Seasonal Prediction of Extreme Precipitation in Morocco Using Hybrid Machine Learning Architectures:* **A Chaqdid**, N El Mocayd, A Aloui

1958164 *Sedimentation in Saudi Arabia's 574 Reservoirs: Nationwide Assessment Using Remote Sensing and Erosion Modeling:* **S S Dash**, N Ivanovic, R Alharbi, G R Hancock, Y Wada, M McCabe, D Pal, H Marttila, H Beck

1952217 *Spatiotemporal Changes and Modulations of Extreme Precipitation Indices in Morocco Linkage With Large-Scale Atmospheric Oscillation and Their Changes from CMIP6:* **S Boughdadi**, M E Saidi, V Ongoma, Y Ait Brahim

1911533 *Typology of Extreme Precipitation Regimes in Morocco: Fuzzy Clustering and Regional Trend Diagnostics for Climate Risk Assessment:* **M EL Hafyani**

1981728 *Impact on Estuarine-shelf Exchange Flows Through the Barrier Island Tidal Inlets of the Mississippi Sound during the Extreme Events of Bonnet Carré Spillway Double Opening and Hurricane Barry in 2019.:* **A Rizal**, H Ajibade, M Diard, B Armstrong, S K Kuttan, M K Cambazoglu, J D Wiggert

1905733 *Investigation of the Morphological Responses of Benthic Foraminifera to Climate-Change-Induced Hypoxia in the Chesapeake Bay:* **S Mba**, R Bryant, A Burgess, B N Hupp

1894275 *Localized Decline in Tidal Overtides Reveals Anthropogenic Smoothing of the Delaware Estuary:* **M N Kadir**, T Naher, J Lorenzo-Trueba, S A Talke, T Wahl, S Dangendorf, S B Lee

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1981414 *Optimizing beach nourishment design for turtle nesting: A case study in southeast Florida, USA:* **L Novalvos Hernandez**, P Wang, R Trindell, D Thompson

1983551 *Performance Variation in the Cold Across a Subtropical-Tropical Latitudinal Gradient:* **R Wood**, R Earley

1910501 *Post-Hurricane Sediment Dynamics and Seagrass Resilience in Coral Bay, St. John, US Virgin Islands:* **A Belcher**, T Browning

1922695 *Regional Drivers of Coastal Forest Resilience under Saltwater Intrusion:* **S Liu**, X Yang

1913519 *Resilience of Lagoonal Estuaries South Texas Coast: Salinity Recovery from Compound Flooding Induced by Hurricane Harvey (2017):* **Z Lei**, X Zhao, Z G Xue, D Bao, Y Wang, Y Ou, Z Zang

252004
Innovative approaches and applications for damage assessment in crisis settings *(joint with GC, GH, SY)*

Conveners: **Andrew Zimmer**, Oak Ridge National Laboratory; **Jamon Van Den Hoek**, NASA Goddard Space Flight Center; **Marie Urban**, Oak Ridge National Laboratory; **Viswadeep Lebakula**, Oak Ridge National Laboratory; **Andrew Zimmer**, Oak Ridge National Laboratory

1875840 *Assessing building damage and vegetation loss after the 2025 Eaton Fire using optical remote sensing:* **S L Antoine**

1914585 *Coherent Change Detection for Post-Tornado Damage Assessment:* **H G Pankratz**, A Molthan, A Melancon, J R Bell

1950533 *Cutting-Edge Fusion of Modeling, Machine Learning, and Remote Sensing to Map and Analyze Cyclone Remal Wind Damage in Coastal Bangladesh:* **M H Rahman**

249693
Interdisciplinary Advances in Catastrophe Modeling and Disaster Resilience: Bridging Science, Policy, and Practice *(joint with GC, SY)*

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1942894 *An Agent-Based Catastrophe Model Driven by 2-D Hydrodynamic Flood Simulation for Risk Analysis:* **H Taysi**, Y C E Yang, B Davison, P Bocchini, M Sohrabi

1964704 *An Attention-Based Stochastic Simulator for Nonstationary Multisite, Multivariate Extremes to Evaluate Climate-Conditional, Cascading Flood Risk:* **A Nayak**, P Gentine, U Lall

1886255 *Entropy-AHP Combined Method for Measuring Risk-integrated Resilience (RiR) Index in Flood Affected Communities of the West Rapti River Basin, Nepal:* **A P Sharma**

1859223 *Evidence of increasing storm intensity, duration and frequency derived from a novel CONUS-wide database of severe convective storms defined by their discrete space time footprints:* **H C Quintal**, A Sebastian, G Tierney, M L Serre, K Dello

1932951 *Storm-Driven Responses to Carbon Cycling Along the Land-Estuary-Ocean continuum in the Mississippi River Delta:* **M Mahmood**, K Maiti, Y Wang, Z G Xue

1898216 *Water Quality Impacts in the Chesapeake Bay During 2011's Hurricane Irene:* **P St-Laurent**

1889212 *Do Less Predictable Tropical Cyclones Induce Larger Damages?:* **H V Y Fukuda**, M R Islam, Y Sawada

1899638 *Integrating GNSS Displacement Signals and Causal Machine Learning for Post-Earthquake Damage Assessment in Türkiye:* **M A Uge**, M Ozmen

1950538 *Intelligent Event Models:* **M Urban**, D Adams, A Zimmer, C Woody, B Swan, J Bowman, P Dias, J Moehl, D Lunga

1919509 *Multi-Scale Earthquake Impact Assessment Through Causal Diffusion Modeling:* **X Li**, S Gao, S Xu

1946781 *Post-Flood Damage Mapping without Ground Truth Data using Fully Polarimetric SAR and Interferometric Coherence:* **R Adhikari**, A Bhardwaj

1938376 *Scalable Structural Damage Detection Using Smartphone-Based Ambient Vibration Monitoring:* **U Kumar**, R M Allen, T Hutchinson, J Zhang, S Sorosh

1986238 *Smart Monitoring Framework for Subsurface Drainage in Landslide-Prone Terrain:* **C H Lee**, L Y Su, C C Fang, S Y Yang, C Y Hung

1863321 *Exploring Policy Impacts on Nature-Based Stormwater Management Through Coupled Agent-Based Modeling:* **Q Sun**, S Abuismail, Y C E Yang

1860927 *Global Tropical Cyclone Landfalls (1990-2024): Interannual Drivers and Trends:* **P Klotzbach**, C Allen, M M Bell, N Bloemendaal, S G Bowen, S Chand, M Hemmati, C M Patricola, M Ekström, H Ramsay, C J Schreck III, L G Silvers, K Wood

1942813 *Identifying Structural Holes in Institutional Networks for Flood Resilience: A Case Study of Urban Flood Risk Management in South Korea:* **S Park**, E Heo, J Park

1911256 *Improving Catastrophic Flood Modeling in Data-Scarce Catchments Using IoT and Machine Learning:* **S Abuismail**, X Zhu, Y C E Yang

1913499 *Integrated Exposure Analysis: Population versus Buildings in Flood Insurance Claims:* **K Karagiorgos**

1991165 *Integrating Financial Risk Assessment and Management into Catastrophe Modeling:* **G W Characklis**

1959718 *Leveraging Post-Earthquake Data and Machine Learning to Advance Rapid Damage Assessment and Resilience Planning:* **M A Laguerre**, K Erazo

1963442 *Modeling Catastrophe Risks in a Changing Climate: Gaps and Opportunities:* **M Hemmati**

1858567 *Modeling Household Adaptation to Climate Extremes Using Agent-Based Simulations for Floods and Droughts:* **M Sohrabi**, Y C E Yang, H Taysi, W Chiou

1890827 *Modeling Long-Term Flood Adaptation Action Across Marginalized and Non-Marginalized Groups: A Coupled Agent-Based Model:* **W Chiou**, Y C E Yang, T Tanaka, S Jamrussri, S Feng

1927472 *Quantifying Risk Propagation in Interdependent Infrastructure: Integrating Institutional Grammar, STAMP, and Bayesian Networks:* **S Gautam**, D J Yu, J Park, H C Shin, Q Li, D Eisenberg, C Gim, S Park, Y Cong

1971058 *Scaling Parametric Flood Insurance in the US and Globally with Deep Learning, Data Fusion, and Rapid Quoting:* **M Thomas**, S Chakrabarti, C Doyle, B Tellman, V Bouton, A Alloyer

252171
Interdisciplinary Tsunami Science *(joint with EP, H, SY, S)*

Conveners: **Robert Weiss**, Virginia Tech; **Patrick Lynett**, University of Southern California; **Deniz Velioglu Sogut**, Florida Institute of Technology; **David George**, USGS Cascades Volcano Observatory

1971728 *Advancing Tsunami Resilience in Türkiye: Implementing Multi-Scale Risk Reduction and Educational Strategies in Tuzla and Kartal under the CoastWAVE Project:* **H Ozener**, M Shafapourtehrany, D Koras, E Yavuz, M E Erkan, D I Vennin, D C Seng, M Kaya, İ Erten, O H Selmanpakoğlu, S Tütüncü

1927259 *Beyond the Sand; Mapping the Extent of the 1700 CE Tsunami Using Grain Size and Diatom Analysis in Central WA, USA:* **M Anderberg**, A Hawkes, S La Selle, J Padgett, T Dura, R C Witter, B Hatcher, J DePaolis

2003983 *ChaOperational tsunami forecast for zero-victim warning: ambition or reality?:* **V V Titov**

1871524 *Detection of a Deep-Ocean Meteotsunami Using the S-net Pressure Gauge Array off Northeastern Japan:* **T Kubota**, T Saito, N Y Chikasada, O Sandanbata

1878045 *Development of Tsunami Fragility Curves based on Detailed Survey Data and Inundation Analysis of the 2024 Noto Peninsula Earthquake:* **H Fujiki**, Y Fukutani

1907186 *Did Proudman Resonance Amplify the 2022 Tonga Meteotsunami Through Coupling with Atmospheric Lamb Waves?:* **T R Wu**, P Y Yang, C W Lin, M H Chuang

1887427 *Efficient Tsunami Arrival Time Prediction via Dijkstra's Algorithm:* **A Spencer**, J Whitehead

1981441 *Simulating Power Restoration Dynamics for Future Tropical Storm Scenarios: An Agent-Based Approach:* **C Mehta**, D Cerrai

1968174 *Social Vulnerability and Wind Risk Reduction through Enhanced Building Codes in Louisiana:* **N M Khan**, A S Al Assi, K Smiley, N Jayasinghe, R B Mostafiz

1903451 *Stochastic Storm Transposition (SST) for Flood Hazard and Risk Modeling at Multiple Spatial Scales:* **M Webber**, A Sebastian, B FitzGerald, D B Wright, L Yan, D Rosa, W Lehman, G S Karlovits

1898809 *Utilizing Neural Differential Equations to Identify Flood-Induced Tipping Points within Urban Environments:* **P Bhaduri**, J Koch, B Daniel, V Srikrishnan

1902191 *Influence of Future Sea-Level Rise on Tsunami Hazards in California: Preliminary Results:* **J R Patton**, N Graehl, P J Lynett, W Renteria, Msc, D Bausch, A Hoke, T Schmidt, T Becker

1927942 *Influence of Sediment Morphology Evolution on Tsunami Waves and Their Inundation:* **E Guerrero Fernandez**, Y Wei

1950616 *Integrating Risk Mapping and Community Preparedness for Sustainable Tsunami Mitigation in Coastal Areas: A Case Study of Tanjung Benoa, Bali:* **S Anggraini**, D N Martono, F Fatmah, D Daryono, N Riama, W Weniza, H Hidayanti, S H Pandadaran, M Apriani, A K Maimuna, R Rudianto

1896435 *Investigation into the Characteristics of Tsunamigenic Earthquakes:* **J Schroeder**, Y Geng, M Ishii, T Little

2002697 *Modeling Tsunami Inundation for Hazard Assessment of Aneityum, the Republic of Vanuatu.:* **N Sannikova**, C W Moore, L S L Kong, PhD, M C Eble

1999852 *Motivating Protective Action: A Content Analysis of Pacific Northwest Tsunami Alerts:* **J N Ghent**, E Mix, M Korfmacher, N Errett, A Bostrom, M Dixon, E Tappero, T Brown El, E Weller

1856159 *Numerical Modelling Chain for the Simulation of Landslide-Generated Tsunamis: Application to the Taan Fiord, AK, Case:* **A Romano**, C Cecioni, G Bellotti, G Barajas, J Lara

1877197 *Probabilistic Translation of Tsunami Inundation Depths across Tides:* **M Macaulay**, G Davies

1905959 *Quantifying Human Mobility Changes During and After the 2024 Noto Peninsula Earthquake and Tsunami Using Mobile Phone Network Data in Japan:* **S Nagata**, E Mas, W Yuan, S Koshimura, C Chen, L Chen

2004944 *Real-Time Tsunami Warning from the Ionosphere: GNSS Detection of Tsunami-Induced Electron Depletion:* **M Kamogawa**

1960091 *Recent updates in the NCEI water level processing system:* **G Mungov**

1965619 *Recovery of the tsunami wave at a buoy from the the shoreline readings:* **O Bobrovnikov**, M Jones, S Prasanna, J Smith, A Rybkin, E Pelinovsky

1948731 *Refining tsunami inundation limits for the 1700 CE Cascadia earthquake: detailed mapping of fine-grained deposits and diatom biostratigraphy at the Salmon River estuary, central Oregon:* **B Hatcher**, T Dura, A Hawkes, H M Kelsey, S La Selle, L Staisch, R C Witter, A J Meigs, E Hemphill-Haley, R Weiss, M Priddy, D Bruce, E Bustamante Fernandez, J Padgett, A R Nelson, C Garrison-Laney, PhD

1973422 *Sampling Tsunami Wave Height and Arrival Time from Synthetic Earthquakes with Heterogeneous Slip Distributions:* **N Suyama**

248526
Landslide Life Cycle: From Hazard Analysis to Risk Assessment (cosponsored by EGU: European Geosciences Union) *(joint with EP, H, SY)*

Conveners: **Lisa Luna**, Potsdam Institute for Climate Impact Research (PIK); **Ben Leshchinsky**, Organization Not Listed; **Stratis Karantanellis**, University of Michigan Ann Arbor; **Eric Bilderback**, Organization Not Listed; **Tobias Halter**, WSL Swiss Federal Institute for Forest, Snow and Landscape Research

1975117 *Regional identification of large, slow-moving, landslides and their 3D displacement using Satellite Radar Interferometry: a case study from Queenstown Lakes, New Zealand.:* **I J Hamling**, C I Massey

1888449 *Evaluation of a Downscaled Climate Model for Landslide Early Warning in Data-Poor Regions of Southeast Alaska:* **R Plescher**, J J Roering, D Nash, E Lawrence

1848750 *A Physics-Informed Machine Learning Framework for Landslide Susceptibility Prediction:* **Y Yuan**, L Zhang, L Wang

1978611 *Accounting for spatial dependence and heterogeneity in landslide susceptibility assessment:* **E Aristizábal**, L Lombardo, O Korup

1893551 *Advancing Landslide-Generated Tsunami Modeling with a Three-Dimensional Rigid-Fluid Method: Toward Coupled Slide–Slump Simulations:* **Y X Huang, PhD**, T R Wu, S K Hu, C R Chu, C Y Wang, C Zhou

1868968 *Analysis of Landslide Displacement and Kinematics through Near-Real Time Surface Monitoring with RTK-GNSS Arrays:* **B A Leshchinsky**, E Fulmer

1957469 *Application of InSAR technique for slope stability analysis in Indian Himalaya.:* **R Kaur**, A Gupta

1922915 *Source Selection Algorithm to Automate Tsunami DART Inversion:* **D Arcas**, C W Moore

1862942 *Spatially extensive probabilistic tsunami inundation hazard assessment: Translating offshore hazards and uncertainties onshore with multiple importance sampling:* **G Davies**

1998387 *Towards ensemble modeling for tsunami forecast:* **Y Wei**, C Pells, N Sannikova, E Guerrero Fernandez, V V Titov, C W Moore

2001031 *Transformational National Weather Service decision support during Tsunami Events:* **G Schoor**, A Reiss

1993031 *Tsunami Hazard Assessment for Coastal Villages in Maluku Province Based on Banda Sea Earthquake Scenarios:* **S D Anugrah**

1940495 *Tsunami Hazard Assessment for Kitimat-Kitimaat of British Columbia, Canada:* **R Amouzgar**, S Kouhi

1931529 *Assessing the failure risk of a highway slope under extreme rainfall conditions:* **S Khan**, F Rahman

1885916 *Assessing the Stability of Active Slow-moving Landslides through Integrated Geotechnical Modeling and InSAR Remote Sensing:* **X Li**, A L Handwerger, R M Skarbek, G Buscarnera

1918219 *Automatic Detection of Mass Movements Using Infrasound at Two Mountainous Catchments near Haines, Alaska:* **H Chandler**, J J Roering, L Toney

1929069 *Base-level Lowering Rates Control a Landslide Process Transition in California's Franciscan Mélange:* **N Fakrai**, J P Perkins, N J Finnegan, A L Handwerger

1869763 *Bayesian Landslide Frequency Estimates to Inform County Level Risk Reduction Across the United States:* **L Luna**, J Woodard, J L Bytheway, G Belair, B B Mirus

1868720 *Bedrock ledges, colluvial wedges, and ridgetop water towers: Geomorphic and atmospheric controls on the initiation and runout of the 2023 Wrangell landslide, SE Alaska, USA:* **J J Roering**, M M Darrow, A I Patton, A B Jacobs

1883413 *Characteristics of landslides and geological structure induced by the 2024 Noto Peninsula earthquake: Focusing on the relationship with existing landslides:* **N Sasaki**, T Sugai

1860321 *Co-seismic Landslide Hazard Assessment Constrained by Landslide Dynamics and Landslide Size Information:* **B Gao**

1877400 *Combining in-situ soil moisture data and precipitation in machine learning for national scale landslide early warning:* **T Halter**, P Lehmann, J Aaron, A Bast, M Stähli

1873637 *Connecting the Dots Between Storms and Landslides: Using Model Climate to Improve Improve Situational Awareness of Atmospheric River Related Hazards in Southeast Alaska:* **D Nash**, J Rutz, A B Jacobs, B Kawzenuk

1950223 *Ecohydrological Controls of Vegetation on Landslide Hazards in the Loess Plateau--A Case Study: Suide County, Yellow River Basin:* **X Liu**, H Lan, L Li

1881195 *Elucidating the Dynamics of Static Liquefaction in Landslide Mobility:* **M E Reid**, E Rivera

1879255 *Enhancing Landslide Detection Using Change Detection-Based Annotations and Deep Learning Segmentation:* **G Agboola**, L H Beni

2000438 *Evaluating UAV-LiDAR and Photogrammetry Techniques for Accurate Multi-Temporal Slope Deformation Monitoring:* **S Darothy**, A Q M Zohuruzzaman, S E Shifat, S Khan

1897145 *Fluvial Response to the 2021 Chamoli Landslide Quantified from High Resolution LiDAR Digital Elevation Models:* **S Kaushal**, S Masudul Islam, Y A Pulpadan

1845492 *From Sky to Slope: UAS and Airborne LiDAR Applications to Landslide Monitoring and Susceptibility Modeling in Yellowstone National Park:* **A Butterworth**, D Delparte, B T Crosby, J Mahar, M Belt

1853469 *From the Golden Years to the Graveyard: The Fluvial Fate of Landslide Debris in a Cascading Hazard Chain:* **B J Yanites**, Y S Lin

1912788 *Groundwater Fluctuations Drive Accelerated Failure of Rock Slopes:* **C Xia**, K M Cuffey, Q Zhao

1964596 *High-Frequency, Repeating Seismic Signals in a Creeping Landslide and What They Tell us About Friction:* **S Li**, N J Finnegan, S Y Schwartz

1975063 *Identification of Potential Slow-Moving Landslides Using PCA/ICA on InSAR Time Series and Terrain Analysis:* **G Chaves Fitzgerald**, M H Huang

1936737 *Identifying Landslide Patterns and Precipitation Thresholds Using Machine Learning: A Case Study in Oregon:* **T Pei**, M D Diokhane, N Devineni, Y Tian

1852181 *Impact of Riverine Toe Erosion on Slope Stability in the Himalayas: Insights from the Kali Gandaki Corridor:* **R Subedi**, P Gyawali, B R Adhikari

1955994 *Integrated Landslide Hazard Assessment Using Remote Sensing, GIS, and Crowdsourced Data: A Community-Driven Approach to Early Warning and Risk Mapping:* **M A Zeb**, P Bencivenga, M Zizi, G De Matteis

1964124 *Integrating Multi-Temporal LiDAR and AHP for Landslide Detection and Susceptibility Mapping in Prince George's County, Maryland:* **M Okegbola**, O Owolabi, Y Liu, Z Sheng

1988121 *Investigating Hydro-Mechanical Drivers of an Expansive-Clay Highway Slope via SHAP-Enabled Machine Learning:* **S E Shifat**, A Q M Zohuruzzaman, Y Li, S Khan, S Darothy

1883578 *Investigation on seismic source activity and active geological hazards of the M_S 6.8 Dingri earthquake in Tibet:* **C Liu**, X Wang

1990674 *IoT-AI System for Real-Time Landslide Monitoring and Risk Assessment in Slopes and Levees:* **A Q M Zohuruzzaman**, M Zulfikar, A Alzghoul, S Khan

1992845 *Land Deformation and Debris Flow Simulation of the 2024 Wayanad Landslide Using DinSAR, RAMMS, and Slope Stability Modelling:* **S Maji**, P Nath Singha Roy, S Bisoi

1885154 *Landslide Conditioning Factors in the Hilly Regions of Bangladesh:* **B Zannat**, S Silvi, K H Mahmud

1919696 *Landslide Susceptibility Mapping in Aizawl Municipal Corporation Area, Aizawl, Mizoram, India:A Comparative Study Using Machine Learning Models:* **S Sailo**, Z Ralte, L Tlau

1891852 *Landslide Susceptibility Mapping Using Frequency Ratio in Chure Rural Municipality and Godawari Municipality in Kailali, Far Western of Nepal:* **T Ale**, A Shrestha, B Rai

2001173 *Landslide watch Aotearoa: Detecting and forecasting insidious landslide displacement across New Zealand Aotearoa:* **C I Massey**, I J Hamling

1851035 *Landsliding follows signatures of wildfire history and vegetation regrowth in a steep coastal shrubland:* **M A Thomas**

1879577 *Leveraging transferrable predictors for enhanced rainfall-triggered landslide hazard assessments over regional scales:* **J Woodard**, B B Mirus, L Luna, M Sutton

1971793 *Linking fan surface morphology to erosional process regimes: A morphometric framework:* **M A Sanders**, J J Roering

1851923 *Living on the Edge: A 40-Year History of Ground Motion in Lettomanoppello (Central Italy) from Satellite InSAR Observations:* **M Albano**, M Polcari, M Moro, M Saroli, G Ciccone, M Fiorucci, V Ruocco, F Doumaz

1924545 *Locating Landslide Slip Surfaces Using Kinematic Elements: A Case Study for Slumgullion Landslide:* **L Hu**, R Bürgmann, Y Xu, X Hu, D Donati, G Landi, F Zama, L Borgatti

1860644 *Machine Learning-Based Landslide Susceptibility and Risk Assessment for Disaster Risk Reduction in Kyrgyzstan:* **G M Henebry**, E Duulatov

1959731 *Machine Learning-Based Landslide Susceptibility Mapping in the Blue Ridge of South-Central Virginia:* **L Rollins**, R Das, M Chakraborty

1983175 *Modeling Rainfall-induced Landslide Hazard in Failure-prone Slopes in Midhill Region of Nepal Himalaya:* **H P Kandel**, H Khanal, B Devkota, K Bhattarai, A Nelubow

1890613 *Modelling landslide runout using Physics-Informed Neural Networks:* **Y Chen**, L Nava, F Wang Prof, M Van Wyk De Vries

1927892 *Multi-Scale Observations and Modeling of a Slow-Moving Landslide Controlled by Frictional Heterogeneity and Pore Fluid Pressure:* **M Yang**, N J Finnegan, V Lambert, Y Iwasaki, E Brodsky

1948601 *Multi-Source Remote Sensing Analysis of Landslide Lifecycle and Failure Processes: The June 2018 Kakrud Landslide in Northern Iran:* **J Li**, M Motagh, H Jiang, B Akbari, S Roessner, M Rezaei, Y Xu

1874775 *Operational Landslide Hazard Forecasting in Vietnam Using Bias-Corrected WRF Rainfall and Soil Moisture Modeling:* **E G Tarouilly**, E Shamir

1979916 *Postfire Erosion Dynamics Revealed by Multiple High-Resolution LiDAR Surveys after 2025 Palisade Fire:* **B Tan**, T Horvath, A Koutsoukos, S Moon, L Bouchard, D A Paige

1998361 *Quantifying Vetiver Grass Evapotranspiration Performance for Sustainable Slope Management in Expansive Soils:* **R Pokhrel**, R Biswas, M A Israk, R Salunke, S Khan

1856594 *Regional detection and characterization of hundreds of slow-moving bedrock landslides in southern Alaska:* **L N Schaefer**, J Kim, D M Staley, K R Barnhart, Z Lu

1926408 *Regional Rainfall-Induced Landslide Hazard Assessment with CyberWater 2:* **S Aly**, A Sheba, Y Liang, X Liang, J S Lin

1882959 *Rethinking the Landslide Life Cycle:* **B M Higman**, N J Finnegan, C Dai, B A Leshchinsky, O Korup, S J Conway, K Hughes

1877089 *Risks from coseismic landslides due to the M=4.8 earthquake of April 2025, on the southeast slope of the Nevado de Colima, Jalisco, Mexico.:* **C Suarez-Plascencia**, G Reyes Alfaro, E Trejo-Gomez, S Ramirez-Lopez

1885200 *Sentinel-1 Consecutive Interferogram Stacking Approach (CIAS) for High-Resolution Landslide Monitoring: A Dynamic Method for Continuous Data Integration:* **B Pan**, S Hussain, A Tariq

1876865 *Spatial-temporal Landslide Susceptibility modeling in Data-Scarce Areas: utilizing Recurrent Neural Networks and Transfer Learning:* **Z Tian**, Y Zhang, Y Wang, Z Fang, S Zheng

1985106 *Spatiotemporal Landslide Hazard Analysis in Seoul using GIS and Machine Learning under Climate Change Scenarios:* **C Kim**, M Jang, Y Ahn, K Kim, M Kang, B Min

1869454 *The Need for Simple Landslide and Debris-Flow Runout Maps: Techniques for Applying Grfin Tools for Regional Landslide Susceptibility:* **I Leb**, M E Reid, D L Brien, C Cerovski-Darriau

1932905 *Thermo-Hydro-Mechanical Modeling of Creep Phase of Landslides:* **F Sobhbidari**, A Caneday

1984173 *Towards a disturbance variable for post seismic landslides:* **A Sridharan, PhD**, G G Reshma, L B, G Gutjahr, T Stanley

1858484 *Towards operational landslide hazard forecasting system in Gandaki Basin, Nepal using machine learning, remote sensing and multi-source data:* **P M Amatya**, T Stanley, S B Maharjan, S Bhattarai, B Bajracharya, T M Lahmers

1872609 *Twenty-five years of landslide mapping of the Collazzone study area, central Italy, to produce a detailed and updated multi-temporal landslide inventory map.:* **F Ardizzone**, M Cardinali, F Fiorucci

1930372 *Understanding Geo-Environmental Factors for Landslide Occurrences Using Geographically Explainable AI: A Case Study from the Northeastern United States:* **Q Liu**, T Pei, N Devineni, Y Tian

1875130 *Unveiling the 2023 Acceleration of the Portuguese Bend Landslide Complex: Insights from Long-Term 4D InSAR-GPS Monitoring:* **A Guo**, R Bürgmann, Y Xu, L Hu, A L Handwerger, E J Fielding

1938874 *Unveiling the Underappreciated Consequences of Landslides across the United States with Generative AI:* **X Wei**, V Balloli, L Palermo, B B Mirus, N J Wood, A Pennaz, A Wilkins, E Bondi-Kelly, S Loos, PhD

1856122 *Variable Velocity-Acceleration Scaling in Accelerating Creep:* **C Chang**, H Noda, D Huang, C Huang, Q Xu, T Yamaguchi

1865243 *Velocity derived from high-resolution ground-based radar interferometry: a case study of the slow-moving Rattlesnake Ridge landslide in central Washington State.:* **Y H Tung**, D A Schmidt

250688

Latest Developments in Planetary Defense *(joint with P, SY)*

Conveners: **Sean Wiggins**, University of California, San Diego; **Jessie Dotson**, Organization Not Listed; **Catherine Plesko**, Los Alamos National Laboratory

2000919 *A Comprehensive Analysis on Global Bolide Infrasound:* **M Ronac Giannone**, E A Silber, V Sawal

1925896 *A Metastatistical Model for Small Asteroid Impacts: Is Less More?:* **M F Caruso**, P Devò, S Andria

1938576 *A novel approach for simulating asteroid airburst events using smooth particle hydrodynamics:* **I Li**, V Korneyeva, E Bjonnes, J Pearl

1870748 *Automated light-curve analysis for bolide fragmentation classification:* **E A Silber**, V Sawal

1901793 *Comparative Assessment of Equations of State for Representing Meteorite ShockPhenomena in Hydrocode Modeling:* **J Vercher**, C S Plesko, J Guzik

1958794 *Comparing strength models in CTH and PAGOSA, including the Rock Model, when simulating planetary defense scenarios.:* **M Harwell**, C S Plesko, W K Caldwell, M Boslough, S A Becker

1960927 *Consequence Assessment of Airburst Capable Asteroids:* **K Romfh**, V Korneyeva, S Stokes, J Pearl

1848604 *Entry-geometry effects on infrasound detection of meteoroids and space debris:* **E A Silber, PhD**

1874613 *Experimental Calibration of X-Ray Energy Deposition Models for Planetary Defense with the OMEGA Laser:* **P King**, A Davis, D Graninger, M Wei, D Burns, H Steven, S Slingluff, M Sakai, M Burkey

1983207 *Hunting for Bolide Clusters in GOES GLM Data:* **K Chen**, J Smith

1999257 *Hydrocode pipeline validation efforts for assessing ground effects of airburst capable asteroids:* **V Korneyeva**, J Pearl, N Arnold-Medabalimi, A Cook

1999926 *Hypervelocity Penetrators for Nuclear Planetary Defense:* **B Bailey**, P Lubin, A N Cohen, M Boslough, S Egan, D Robertson, C S Plesko, G Spriggs

1913351 *Influence of Low-Density Dimorphos on Cratering from DART Impact:* **D Graninger**, K Kumamoto, E Bjonnes, S Wiggins

1869868 *Investigating the Classification of Infrasound Signals Generated by Bright Meteors:* **E Brown**, A Thompson, E A Silber, E A Silber, PhD

1861520 *Keyhole-Aware Target Site Selection for Kinetic Impact Missions to Near-Earth Asteroids:* **R Makadia**, S R Chesley, D Farnocchia, B Barbee, S Eggl

1893771 *Mitigation of Potentially Hazardous Objects (PHOs) by Nuclear Contact Burst, A Fresh Look:* **C S Plesko**, S A Becker, M Boslough, W K Caldwell, M Harwell, J Vercher

1922299 *Modeling Atmospheric Breakup and Energy Deposition of Incoming Bolides:* **E Bjonnes**, J Pearl, K Kumamoto, J M Owen

1935734 *Multi-parameter infrasound period-yield scaling for bolides:* **E A Silber**, R E Silber, J Trigo-Rodríguez, M Boslough, E Peña-Asensio, C Pilger, P Lubin, R Whitaker, V Sawal, C H Hetzer, P M M Jenniskens, E Mas Sanz, P Hupe, S Egan, M Ronac Giannone, A N Cohen, B Bailey, T Edwards

1875729 *Multiple Kinetic Impactors Perform Better Than a Single Kinetic Impactor for 50-100 Meter Diameter Space Intruders:* **M Hirabayashi**

1876636 *Quantifying Uncertainties in Nuclear Mitigation Design Resulting from Asteroid Composition:* **T Onyango**, M Burkey, N A Gentile

1880258 *Seismoacoustic characterization of a daytime fireball in Southcentral Alaska:* **L Scamfer**, E A Silber, M Fries, D Vida, D Šegon, V Sawal

1870442 *Simulating Asteroid Deflection and Disruption using an X-Ray Energy Deposition Model in SPH:* **I Santistevan**, M Burkey, J M Owen, K Kumamoto, R Managan

1927443 *The Influence of Micro- vs Macroporosity in the Deflection of Rubble-Pile Asteroids:* **S Wiggins**, J M Owen, J Pearl, K Kumamoto, C Raskin

1897968 *Validation of the X-ray driven deflection of Silicon Oxide and insights into momentum transfer for large targets:* **S Stokes**, M Burkey, K Kumamoto

1973337 *Very Low Solar Elongation Observations of Asteroids and Comets with NASA's PUNCH Spacecraft:* **S Porter**, K J Walsh, J M Hughes, R Deienno, C DeForest

247809
Monitoring, Mapping, and Modeling of Regional-Scale Slope Failure Hazards *(joint with EP, H, NS, S)*

Conveners: **Weibing Gong**, ; **Yimin Lu**, Texas Tech University; **Stratis Karantanellis**, University of Michigan Ann Arbor

1852989 *A Study on Replay Large-Scale Slope Failure Processes Using Numerical and Large-Scale Physical Simulation:* **C Kuo**, T Chou

1868424 *Applying TDR technology to the monitoring of sliding direction for a deep-seated landslide:* **I Chen**, Z Y Lee

1873020 *Assessment of transportation infrastructure resilience against landslides in hilly regions of Uttarakhand, India:* **A Vashistha**, S Siva Subramanian

1993444 *Characterization of groundwater and monitoring of hydraulic dynamics in fractured aquifers using active heating-based distributed fibre-optic sensing:* **A Acharya**, F Ito, T Sakaki, T Kogure

1960446 *Developing a framework to model the cascading impact on food supply chain due to debris flow-induced disruptions in mountainous road networks:* **S Priyadarshi**, S Bera, P Ghosh

1898663 *Engineering Geological Truth in Slope Instability: Integrating Rock Mass Structure and Geotechnical Characterization for Regional-Scale Hazard Modelling:* **V Marinos**

1921049 *Geomorphic Impacts and Terrain Recovery After Hurricane Helene: A Multi-Sensor Geospatial Analysis in Western North Carolina:* **P Regmi**, C White, H Mitasova

1912558 *Hillslope Stability Impacts of Cyclic Road Salt Exposure on Mudstones.:* **A Ayo-Bali**, D Bain

250101
Multi-Hazard Flood Modeling: From Inland to Coast *(joint with EP, H)*

Conveners: **Felix Santiago-Collazo**, University of Georgia; **David Muñoz**, Center for Complex Hydrosystems Research; **Francisco Peña Guerra**, Galt Group Inc.; **Avantika Gori**, Rice University

1993946 *Physics-Based Models for Simulation of Compound Flood Events: Navigating Consistency, Complexity, and Computational Demands:* **M Narayanaswamy**

1936608 *A Machine Learning Approach for Mapping Compound Inundation in Coastal Watersheds:* **O Viloria**, F L Santiago-Collazo

1983932 *Mundakkai-Chooralmala landslide: assessment of initiation, progression, and impact:* **M V Ramesh**, A Sridharan, PhD, H C Ekkirala, B Singh, N Kumar M, S Ramesh, S K Wadhawan

2001409 *Muon flux measurements of the tunnel overburden by compact cosmic ray muon detectors:* **S Goto**, S Obata, T Gotoh

1991733 *NALS: A New Algorithm for Mapping Landslide Susceptibility Across National Extension:* **A Scaioli Sr**, C Crippa, M Papini, L Longoni

1876527 *Regional landslide displacement prediction using InSAR and physics-informed machine learning:* **Y Yuan**, L Wang

1985518 *Regional Slope Failure Mechanisms and Support Compatibility Based on Geological Zonation and Climate Modeling:* **L Mu**, C Wang

1851542 *Scope of morphotectonic parameters in evaluating landslide susceptibility within tectonically inactive intra-cratonic basin: insights from knickpoint characterization, multivariate statistical analysis and hierarchical modelling:* **M Tetso**, S Bhadra Dr

1992802 *Seasonal and Precipitation Modulation of Movements of the Slow-moving Almenningar and Tungnakvíslarjökull Landslides, Iceland:* **H Geirsson**, T Saemundsson

1850593 *Seismic rockfall risk assessments and mitigation strategies for transportation infrastructurein high-risk regions:* **K Eze**, O Ilesanmi, G I Igah, A Abidola, F Ojefia, A Adekoya

1981438 *Simulating Future Landslide Hazards Under Extreme Rainfall Using Process-Based and Stochastic Modeling:* **J Thomas**, M B Kayastha, T Oommen, P Xue

1915094 *Slope Instability Predictor-Kerala (SLIP-K): A mobile/web application for landslide hazard prediction in Idukki, India:* **S Mohan**, R A, K P Velappan Kumari Lekha, T Oommen, S KS

1970292 *Bivariate Design Storms Don't Work: A theory-driven investigation and stylized case study:* **N Geldner**

1916365 *Effectiveness of Prairie Restoration to Reduce Compound Flooding in the Lower Brazos River Basin, TX:* **M Guerinot**, A Gori, T Furrh, P B Bedient, J Blackburn

1917642 *Enhancing Coastal Flood Hazard Modeling with Synthetic Event Design:* **S Mahmoudi**, D Rounce, M Weathers

1953097 *Evaluating Shifts in Riverine-Coastal Flood Transition Zones Under Changing Environmental Conditions:* **K Serafin**, A Recalde, R Jane, T Carasella, T Wahl

1891163 *Evaluating the Role of Storm Characteristics, Sea-Level Rise, and Land Use Change on Compound Flood Impacts in Jackson County, Mississippi:* **M Weathers**, D Rounce, S Mahmoudi, I Y Georgiou, M Bregman

1879075 *Fast Riverine Flood Modeling with SFINCS: Case Studies in Texas, North Carolina and Washington State:* **T Leijnse**, K Nederhoff, R de Goede, M Van Ormondt, K van Asselt, A Van Dongeren

1892245 *Generating Synthetic Storm Events for Compound Flood Modeling in a Tri-variate Probabilistic Framework:* **P M Mahanthe Gamage**, S Santamaria-Aguilar, T Wahl, R Jane, S Dangendorf, H Kim, G Villarini

1894591 *Geospatial Frequency Analysis of Transition Zones in a Multi-watershed ADCIRC Model:* **K Wu**, A Kiaghadi, M Loveland, S Cai, C Wichitrnithed, E Valseth, C Dawson, Y Zhang

1969667 *Improving Compound Coastal Flood Forecasting with Graph-Based Deep Learning along the Southeast U.S. Coast:* **S Sauda**, M Yu

1937605 *Modeling Compound Flood Hazards in the Fraser River Estuary Using SFINCS: A Multi-Hazard Approach for Coastal British Columbia:* **T De Jong**, S Weijs, E Murphy

250544
Navigating Risk in the 21st Century: A New Resilience Paradigm *(joint with GC, NG, SA)*

Conveners: **Ryan McGranaghan**, NASA Jet Propulsion Laboratory; **Auroop Ganguly**, Pacific Northwest National Laboratory; **Adam Sobel**, Columbia University; **Shanna McClain**, NASA Headquarters

1952275 *Analyzing Climate Risks and Trade Barriers: A Stochastic Frontier Gravity Approach to Pakistan's Agricultural Trade with South Asia:* **Z Batool**, N U Ain

1868334 *Charting- a new paradigm to combine 'hard data' based risk quantification and 'soft data' anecdotal reports of hazard:* **S C Chapman**

1909009 *Comparing Community Resilience to Natural Hazards at Two Geographical Scales: A Case Study of Louisiana Using the Resilience Inference Measurement (RIM) Model:* **N Lam**, C Li, V Mihunov, K Wang, X Zhang

1907344 *CoNetCADE: A Variational-Diffusion Model for Co-Evolving Networks and Post-Disaster Household Adaptation:* **S Gao**, R Chen, X Li, S Xu

1901917 *Decision-focused Sensing and Forecasting for Adaptive and Rapid Flood Response: An Implicit Learning Approach:* **G Hults**, Q Sun, S Xu

1988771 *Disentangling the complex drivers of and responses to heat-energy-housing problems:* **L Turek-Hankins**

1961264 *Multi-Driver Coastal Flood Hazard Mapping for India Using Indicator-Based Approach:* **S Singh**, A Chakraborty, R Ranjan, S Karmakar

1993798 *Probabilistic Flood Risk Assessment of Road Transportation Networks Under Coastal and Compound Flooding:* **P Panakkal**, A Khalid, M Narayanaswamy

1953649 *Reducing the Coastal/Inland Divide, how USACE's HEC and CHL are Working Together to Model Compound Flooding Hazards:* **W Lehman**, T C Massey, G S Karlovits, M Carr

1939631 *Standardizing Performance Evaluation for Compound Flooding: Challenges and Recommendations:* **M Nujhat**, H Moftakhari, F Maghsoodifar, H Moradkhani

1955817 *Statewide screening of the compound flood hazard:* **R Jane**, T Wahl, G Villarini

1967504 *Tackling the Triple Threat: An Integrated Modeling Approach to Assess Compound Flood Risk in Coastal Cities:* **K Boukin**, S Shokrana, S Ravela, K M Strzepek

1913062 *Understanding Climate-Driven Compound Flood Risk: The Role of Hurricane Evolution and Relative Sea-Level Rise in Hurricanes Harvey (2017) and Beryl (2024):* **W Lee**, A Y Sun, B R Scanlon, A Rateb

1989515 *Floods, Failures, and Flexibility: Resilience of Boston's Multimodal Transit Network to Climate-Driven Disruptions:* **D Mansoor**, D Zhou, R Dave, A Ganguly

1935341 *How Deep is Your Resilience? Lessons Learned, Not Learned, and Paths Toward Risk Reduction:* **R S Pulwarty**, M Gordon

1972975 *Integrating Atmospheric Science, Fire Science, and Public Policy to reduce Wildfire Risk in Southern California:* **A D Hall**, J T Randerson, S Rahimi, N Elhami Khorasani, R Sukhdeo, K Singh, C W Thackeray, R Scholten, E Taciroglu, M Frediani, F J Szasdi Bardales, P Hadinata, T W Juliano, W LIU, R Uddien Shaik

1984192 *Quantifying global and sub-global socioeconomic transition uncertainty for climate management and risk analyses:* **J F Morris**, S K Rose, A Gurgel

1983711 *Redefining Vulnerability Through Personal and Household Characteristics:* **J Kaur**, S Clark, J Whittington, H Yue

1895248 *Resilience by Design: Decision-Centered Metrics for Wildfire Risk in Electric Infrastructure:* **C Chini, PhD**, J Yoon, T Saltiel, L Miller, A M Coleman

2003496 *Using the EVDT Framework to Assess the Utility of CYGNSS Satellite Earth Observations for Decision-Making Needs in the Gulf of Mexico and Caribbean Region:* **D Wood**, A Farrar, M S Islam, A Kruczkiewicz, C S Ruf, J Salas, R Balasubramaniam, P Chardon-Maldonado, J M Morell

252032
Progress, Ethics and Accuracy in Building Stock Attribution. *(joint with GC, IN, SY)*

Conveners: **Charles Huyck**, ImageCat Inc; **Robert Stewart**, Oak Ridge National Laboratory; **Douglas Bausch**, NiyamIT Inc.; **Jibonananda Sanyal**, Oak Ridge National Laboratory

1947098 *Will you be my neighbor? Characterizing built environment patterns at scale:* **C Stipek**, J Gonzales

1944928 *A Data-Driven Probabilistic Approach to Regional Dynamics of Building Exposure and Physical Vulnerability Towards Global Disaster Risk Quantification Audit:* **J Dimasaka, MS, MA, MRes**, F Bendimerad, R M Tanhueco, R Muir-Wood, C Geiß, E So

1977717 *Advancing Access to Site-Specific Building Data for Multi-Hazard Risk Assessment:* **A Hoke**, D Bausch, T Schmidt

1880659 *Creating an IN-CORE Building Inventory by leveraging the NSI Dataset:* **R Kooper**, Y W W Kim, D Sanderson, C Navarro, J Lee, C Wang, R Panchani

1967408 *Global Gridded Built Environment Characterization Using a Scalable Intelligent System Based on Morphological Profiles:* **D Adams**, C Stipek, A Zimmer, J Moehl, R Stewart, M Urban

1881769 *How Exposure Data Synthesis Choices Shape our Understanding of Disaster Risk:* **M Lochhead**, A Huynh, A Zsarnoczay, G Deierlein

1953232 *Improving accessibility to building stock inventories across the nation through the National Structure Inventory API v2.0:* **W Lehman**, L N J, R Goss

1917633 *Learning to Impute Missing Building Attributes with Expert-Guided Graph Autoencoders:* **P Sankhe**, J Piburn, R Stewart, J Jacobs

1994242 *The 2025 National Structure Inventory: Foundations for Exposure Data in Risk Assessments:* **N Lutz**, A Ryan

1911167 *Toward a Statistically Representative Global Sample of Labeled Buildings: Challenges and Early Insights:* **J Piburn**, J Kaufman, B Reynolds, P Sankhe, J Moehl, D Adams

246755
Recent Advances in Flood Risk:Prediction, Monitoring, Assessment,Management, Mitigation and Adaptation Planning *(joint with EP, GC, H)*

Conveners: **Dhruvesh Patel**, Pandit Deendayal Energy University; **Cristina Prieto**, Imperial College London; **Benjamin Dewals**, University of Bristol; **Dawei Han**, University of Bristol

1907653 *A Multi-Scale Index-Based Approach for Flood Risk Assessment in Urban Areas: The Case of Cosenza, Southern Italy:* **D Biondi**, G Capparelli, D Spina, F Cruscomagno

1980511 *A Scalable Flood Risk Assessment Method for Pavements: Quantifying Flood Damage at Segment and Network Scales Utilizing High Resolution Hydrodynamic Flood Modeling:* **K Boukin**, K M Strzepek, R Kirchain

1978145 *AI-Enabled Coastal Resilience via Storm Generation, Surrogate Modeling, and Optimization:* **A New**, J Markowitz, J Sleeman, G J Brett, PhD, N S Winstead

1892150 *An Integrated Framework for Flood Risk Forecasting Utilizing Global Weather Predictions and Hydrodynamic Modelling: An Appraisal of the Krishna River Basin Case Study, India:* **A Chakraborty**, K Mondal, M Ghosh, S Ghosh, S Karmakar

1891840 *Assessing flood risk in a rapidly urbanizing basin: a logistic regression approach for Istanbul (Türkiye):* **E Hamidova**, A Bosino, M E Cihangir, M De Amicis

1866605 *Assessing the characteristics and impact of unexpected 2024 flood in the Bagmati River basin of Nepal:* **B B Shrestha**, M Rasmy, K Tamakawa, S Joshi, D Kuribayashi

1952211 *Assessment of flood (inundation extent and flood depth) mapping using Synthetic Aperture Radar (SAR) in the OpenSARLab platform:* **K P Mondal**, S M A Habib, M N H Sharifee, M Sharif, M J Ashik, S T Islam

1987878 *Coastal Storm Tide Modelling for the US Northeast:* **D Kwon**, N Lin, A Begmohammadi, D Xi, C Blackshaw

1963449 *Data-driven Flood Risk Index for Downstream Decision-making:* **B Kar**, G Schumann, M T Glasscoe

1869673 *Demonstrating a Pipeline for Operational Use of the National Water Model for Responding to Community-scale Flood Hazards:* **M Vardaman**, N O Djan, K Adebayo, A Farshid, V Oladoja, A Simpson, S Zand, D Maidment, K McDonough, D Djokic, M D Bartos

1884959 *Flood Assessment and Mitigation planning using UAV, GeoHEC-HMS, GeoHEC-RAS and GeoSTORM tools- A case of Palej Industrial Area, Gujarat, India.:* **D Patel, PhD**, K Darji

1885344 *Flood stress on Rice yield regarding flood depth and flood duration at different rice growth stages and response of different varieties:* **M O Faruq**, M F Islam, A K Paul, B Karmakar

1971499 *Flood Vulnerability Assessment in the Hilly Districts of Southeastern Bangladesh: A Multi-Criteria Approach:* **G Morsad**, M T Ahmed, S B Murshed

1962961 *Forensic Analysis of the Camp Mystic Flash Flood Event and Opportunities for Early Warning Systems Using Low-Cost Sensors:* **A M Nemnem**, A Downey, J Imran

1867221 *Glacial Lake Outburst Flood Mapping and Risk Assessment Using Combined Approaches of Satellite Remote Sensing, GIS and Dam Break Modelling in Upper Indus Catchment:* **M Amin**, D A Abbasi

1990687 *Hydrodynamic and Risk-Based Assessment of the August 2024 Bangladesh Floods:* **A Nahian**, R Biswas, A Q M Zohuruzzaman, S Khan, J Imran, A Downey

1973967 *Improving Real-Time 2D Urban Flood Prediction in Southwestern India Using Physics-Informed Deep Learning:* **J I Montenegro Gambini, MSc**, G Corzo Perez, C Zevenbergen, T Kuzniecow Bacchin

1860623 *Integrating physics-based and AI-enhanced disaster modeling with decision analytics for urban disaster-recovery master planning: Phnom Penh, Cambodia:* **S O Lee**, J Won, D Hwang, B So, D Lee, E Jung, D K Woo, G Lee

1978577 *Integration of Geospatial and Geomorphic Data for a Novel, Satellite-based, Emergency Alert System for Flash Floods in the Backcountry of Grand Canyon National Park:* **E Byerley**, T Gushue, P Grams, J Thomas, M Taylor, T Carter, D J Topping

2002005 *Laboratory experiments and numerical simulations on levee breach by overtopping:* **Y Ozeren, PhD**, E Dumlu

1938986 *Mapping Wetland Inundation Dynamics through Python-Based Mathematical Simulation: A Case Study of Deepor Beel, a Ramsar Wetland of India:* **A K Sarma**, B Baishya

1980867 *Modeling the Effect of Erodible Coastal Sandbars on Urban Flash Flood Hazard:* **S Nash**, C R Escauriaza

252469
Toward Reliable and Scalable Geohazard Intelligence: From Multi-Scale Sensing to Open Data Foundations *(joint with EP, GC, H, NS)*

Conveners: **Xin Wei**, University of Michigan; **Chuxuan Li**, University of California Los Angeles; **Jingxiao Liu**, Massachusetts Institute of Technology; **Bingxu Luo**, University of Arizona; **Ann Sinclair**, Northwestern University

1932958 *A Hybrid Domain Adaptation Framework for Cross-Region Landslide Segmentation:* **R Deb**, T Pei, Y Tian

1980603 *A Machine Learning Benchmark Dataset for Generalizable Landslide Susceptibility Mapping:* **R Goldberg**, T Pei, F Moshary, Y Tian

1953356 *AI-based fusion of multi-source data for earthquake damage assessment:* **X Yu**, X Hu, Y Song, F Lin

1989661 *Near Real-Time Flood Forecasting Using Integrated MRMS Rainfall and HEC-HMS with Probabilistic Hydrographs:* **S Mahat**, A Paudel, D Li, N Fang

1993954 *Physics Informed Neural Network for flood vulnerability modeling of residential properties in data scarce environments:* **M Museru**, R Nazari, M Karimi

1862465 *Probabilistic Assessment of Flood Damage from Levee Breaches for Flood Insurance:* **M D'Oria**, A Maranzoni, M Mazzoleni

1967029 *Probabilistic Assessment of Levee Breach under Variable Overtopping Conditions:* **E Kurter**, A M Nemnem, I Karakan, L Micheli, H Chaudhry, J Imran

1958623 *Projecting Future Flood Risk in Feni District: Impacts of Land Use Dynamics and Changing Multi-Scenario Rainfall Patterns:* **M Ahmed**, Z Alam

1917906 *Quantifying Anthropogenic Impact on Geomorphic Surfaces Through Flood Modeling: A HEC-RAS 2D Assessment of NCT Delhi:* **V Shankar**, V Singh

1914416 *Rapid Need Assessment for Disaster Response in Sathkania Upzila for Chittagong Flood 2023:* **M M Hasan Saikot**, N Shahriar, M R Rajib, A Rahman, M Ahmed, S B Murshed

1953628 *Real-Time Flood Monitoring and Forecasting for Mumbai using 2D-Hydrodynamic Modelling .:* **P Tripathy**, R Murtugudde, S Karmakar, S Ghosh

1865512 *Real-Time Flood Risk Prediction Using Temporal Transformer-based Deep Learning and Multisource Remote Sensing Data:* **S B Haji Seyed Asadollah**, A Safaeinia, S Jarahizadeh, S Jarahizadeh

1977075 *Urban Coastal-Pluvial Flood Forecasting: Insights from LSTM-Based Data-Driven Modeling:* **S Kasaei**, P M Orton, K Liu

1915796 *Building a Community-Curated, Open-Access Platform of Global Landslide Datasets to Support Reliable and Scalable AI Models:* **X Wei**, R Chen, M Gereghty, E Bondi-Kelly, S Loos, PhD

1900364 *Cross-Regional Generalizability of Deep Learning for Automated Landslide Detection Using Spatio-Temporal Satellite Imagery:* **M Sutton**, G E Hilley

1856760 *Exploring automatic segmentation of landslides using deep learning:* **H J Koch**, J Zhu, J Dortch

1855640 *Foundational geospatial databases and long-term monitoring to support the next generation of data-driven landslide hazard and risk assessments (Invited Paper 1855640):* **B B Mirus**, J Woodard, M Sutton, L V Luna, X Wei, S Loos, PhD, G E Hilley

1951628 *From Complexity to Clarity: Enhancing Landslide Susceptibility Mapping with Backward Elimination and Explainable AI:* **B Harandi**, W Zhan

1986652 *Improving Landslide Susceptibility Prediction with Terrain Patterns, High-Resolution Data, and Ensemble Models:* **J Liu**, C Shen, T Pei, D Kifer, K Lawson

1936478 *Integrating Machine Learning and Spatial Analytics for Landslide Detection and Monitoring with Satellite Images and Topographic Data:* **F Tsai**, S N Tsai, C C Lo

1849625 *Leveraging conventional and DAS seismic networks through novel processing paradigms:* **E Biondi**, J Li, W Zhu, Z Zhan

1993379 *Living Models for Reliable Real-Time Flood Situational Awareness:* **P Panakkal**, M Narayanaswamy

248174
Weathering the Risk: Climate Change and the Future of Insurance & Reinsurance

Conveners: **Joshua Weinberg**, American Geophysical Union; **Heather Goss**, American Geophysical Union

260027
Natural Hazards Student and Early Career GeoBurst Session

Conveners: **Christelle Wauthier**, The Pennsylvania State University; **Leila Rahimi**, South Florida Water Management District

256924
Advances in Fiber-Optic Sensing for Near-Surface Imaging and Geohazard Assessment

(joint with H, NH, S)

Conveners: **Feng Cheng**, University of Rochester; **Jonathan Ajo-Franklin**, Rice University; **Ettore Biondi**, California Institute of Technology; **Eileen Martin**, Stanford University; **Ahmad Tourei**, Virginia Tech

1973436 *High-resolution Near-surface Imaging of the Southern San Andreas Fault in Mecca Hills, California, Using Multiple Geophysical Techniques Applied to Distributed Acoustic Sensing Data:* **K Cannon**, B Cox, A K Ault

1986879 *Case study of deep learning-based DAS monitoring data phase picking for safety monitoring in the Southeastern Korea Peninsula:* **J PARK**, C Lee, M Kim, K G Park

1907847 *Characterizing Reservoir Seiches Using Ultra-Low Frequency Record by Distributed Acoustic Sensing:* **H Kou**, B Luo, H Meng, Z Guo

1983069 *Multi-Scale Imagery and AI for Extreme Events: Integrating UAS and Ground-Level Sensing with Machine Learning for Post-Event Assessment:* **J Wartman**, B Cetiner

1956917 *Physics-Informed Multi-Scale Sensing Framework for Cascading Geohazard Assessment:* **X Li**, S Xu

1889428 *Time-Series Landslide Detection with Multi-Scale Satellite Data and Unsupervised Machine Learning:* **Y Sun**, S Moon, L Bouchard, C Li, A L Handwerger, G Peltzer

1982949 *Utilizing Multi-Model Training for Landslide Detection with Satellite Imagery:* **E Song**, T Pei, Y Tian

1950117 *Bringing Environmental Data to Insurers and Reinsurers: NOAA's New and Improved Tools for Extreme Weather Preparedness and Recovery:* **B Smith**, S Luce, M Coates, C Schrems, B Donaldson

2003893 *Innovating Climate Risk Transfer: Weather Index Insurance and Early Warning Systems for Smallholder Coffee Farmers in Malawi:* **J N Ngaina**

1870766 *When Does Forecast-Based Insurance Benefit?:* **L Poole-Selters**, V Anand, A Gozdiff Spognardi, B Bekele, E Coughlan de Perez

1991514 *Decoding Sub-Basin Effects for Seismic Amplification in Los Angeles:* **R Shams**, C C Nweke

1990664 *The New Norm? Modeling Population Vulnerabilities to Stronger and More Frequent Hurricanes:* **S Mullins**, J A Uelmen Jr

1897656 *Coastal Aquifer Hydrostratigraphic Characterization Using Distributed Fiber Optic Sensing: Insights from Post-Pump Test Recovery:* **H Fitzpatrick**, M Becker, B Partington, M Santillan, V Robino

1867448 *DAS Acquistion Optimization for Monitoring Low-Frequency Dynamics:* **J P Morten**, Y Cubuk Sabuncu, V Hjorleifsdottir, O H Waagaard, K Jonsdottir

1955581 *Dike/Levee Stability Monitoring System for Rainfall Events Based On Fiber Optics Based Distributed Temperature System:* **J P Aguilar-López**

1883053 *Distributed Fiber-optic Sensing Captures Tidal Dynamics along the Qiantang River:* **F Cheng**, K Zhao, H Sun

1857532 *Distributed Temperature Sensing On A Dark Seafloor Telecommunications Fiber Reveals Seafloor Temperature at the Beaufort Sea Between 2023-2025:* **J M Frederick**, C Stanciu, E W Conley, M G Baker, R E Abbott, K R Jones

1886911 *Evaluating DAS and Seismometer Signals from Active Sources at the UNR Farm Fiber Test Area, Reno, NV:* **A Kim**, S Sayyadi, C B Kratt, M B Hausner, E Martin, H Glover, A Harpold, T Little

1996165 *Experimental Observations of Highly Variable Strain Sensitivity Along Single-Mode Fiber Optic Cable with Distributed Acoustic Sensing:* **M Ahmed**, J Vantassel

1915345 *Ground Resonance Induced by Large Wind Turbine Arrays:* **F Yin**, J Ajo-Franklin

1921722 *High-Resolution Imaging of Shallow Sub-Surface in a Dense Urban Environment Using DAS and Ambient Noise Tomography to Identify Potential Hazards and Monitor Groundwater flow:* **T Fushille**, L April, A A Velasco, M S Karplus

1993105 *Laboratory simulation of rainfall-triggered landslides using distributed acoustic sensing:* **P Wu**, C Gu, Y Zhong, Z Yuan, J He, C Fan

1885790 *Linear dense array ambient noise attenuation tomography and application to permafrost monitoring in plateau regions:* **R Wu**, F Cheng

1884924 *Monitoring Seismo-Acoustic and Thermal Signals in Geyser Eruptions Using Fiber-optic Sensing:* **P Caraccioli**, A Yates, J Pätzel, C Munoz-Saez, S Saltiel, F Suarez, C Caudron

1970037 *Multi-scale spatiotemporal subsea monitoring using 5-10% smartly sampled DAS data:* **A Verma**, A Goyal, A Micallef, PhD

249408
High-resolution Imaging and Monitoring in Environmental, Urban, and Energy Contexts through Seismic, Remote Sensing, and Electromagnetic Methods *(joint with EP)*

Conveners: **Ettore Biondi**, California Institute of Technology; **Shujuan Mao**, Peking University; **Jingyi Chen**, Stony Brook University; **Qifei Niu**, University of Kansas

1946513 *2D Acoustic Full Waveform Ambient Noise Interferometry: Methodology and Application to a Himalayan Glacier:* **A Mahesh**, A Datta, B Shekar

1908515 *A multi-messenger approach to assess geothermal resources in two southern Italy regions:* **V Giampaolo**, M Balasco, M Blasone, P Capuano, V Cataldo, G De Martino, L Martino, G Mungiello, F Napolitano, S Panebianco, A Perrone, V Serlenga, T A Stabile, O Amoroso

1897066 *Assessing Aquifer Permeability Using Tube Wave Attenuation in Groundwater Monitoring Wells: Insights from a DAS Field Survey and Slug Tests:* **R Zhu**, J Ajo-Franklin, J Patterson, V Sobolevskaia, Y MA, Q Shi

1891806 *Critical Zone Subsurface Structure Characterization of a Mountainous Catchment Using Seismic Refraction and Drone-based Electromagnetics:* **J Kietzmann**, S Wu, J Sun, Q Niu

2000723 *Permafrost characterization with passive cryoseismic DAS events in Utqiaġvik, Alaska:* **A Tourei**, E R Martin, G Rocha dos Santos

1922565 *Quantitative Comparison of Seven DAS Interrogators from an Active Source Field Experiment at the UNR Farm Fiber Test Area, Reno, NV:* **S Sayyadi**, C B Kratt, M B Hausner, E Martin, H Glover, A Harpold

1950443 *Seeing Without Eyes: Deep Learning and FOS-DTS based method for Dike Desiccation Crack Detection:* **J P Aguilar-López**, L Duarte-Campos Sr

1918405 *Tracking riparian subsurface flow with fiber-optic sensing and differentiable modeling:* **H Sun**, F Cheng, J Xia

1893181 *Unveiling type of fiber and coupling conditions effects on DAS measurements:* **V Carrillo-Barra**, D Mercerat, V Bremaud Sr, A Sladen, O Sèbe, C Madelaine, A Vallage, J P Ampuero

1996735 *Urban Snowstorm Monitoring and Traffic Impact Assessment using Distributed Acoustic Sensing:* **Y Zhong**, C Gu, P Wu, Z Yuan, J He, C Fan

1969591 *Decoding Fault Zones in Coastal Plain Settings: Python-Driven Analysis in Memphis Aquifer Using High-Resolution Airborne EM Imaging:* **K Karki**, D Larsen

1950389 *Enhancing Spatial Resolution in Surface Wave Imaging Using Multi-Station 6-Component Seismometers and Active Sources:* **Z Zhou**, Z Huang, Y Chen, Z Li

1870919 *Geophysical Characterization of the Near Surface in Periglacial Landscapes with Interferometric Synthetic Aperture Radar (InSAR):* **R J Michaelides**, T Meng, V Follingstad

1945972 *High-Resolution Multi-Frequency Seismic Inversion Using a Hybrid CNN-Transformer Network:* **Y Qi**, S Yang, T Yang, B Ren, Y Su

1937578 *Long-Term Near-Surface Monitoring of Seismic Attenuation in Coastal and Inland Singapore Using Traffic-induced Signals:* **P Wang**, Y S Li

1971307 *Physics-Informed Neural Network enabled Radar Sensing for Continuous Subsurface Material Characterization:* **I Aziz**, M Alipour

2005432 *Searching for unmarked burials in historic African-American cemeteries in Houston, Texas using airborne drone imaging:* **M N Bugti**, M Allison, R R Stewart, C Clapsaddle

1928852 *Seismic Ambient-Field Monitoring of Geological Carbon Sequestration at the Illinois Basin - Decatur Project (IBDP):* **H Li**, S Mao, W L Ellsworth

1944335 *Study on underground structure model and site amplification factor based on microtremor array observations at seismic stations in Japan:* **S Senna**

1932276 *Subsurface Structure and Water Stores Beneath Giant Sequoias:* **B Eppinger**, S Holbrook, D Grana, S P Bemis, S M Gupta, D Burgett, A Gupta, C E Lukens, C S Riebe

1944093 *Surface Manifestation of Hydrocarbon Indicators: A Case Study:* **P Sivaraj**, C Jalluri, S Yeggina, J Kravitz

247994
Integrating physical, statistical and AI-enhanced methods in seismic hazard -Towards real-time forecasting of natural and induced earthquakes *(joint with NG, NH, T, V)*

Conveners: **Davide Zaccagnino**, Southern University of Science and Technology; **Ilaria Spassiani**, INGV National Institute of Geophysics and Volcanology; **Robert Shcherbakov**, University of Western Ontario; **Jiancang Zhuang**, Institute of Statistical Mathematics; **Giuseppe Petrillo**, Institute of Statistical Mathematics

1883870 *3D Physics-Based Ground Motion Simulation and Near-Surface Structure Effects of the 2024 Feidong M4.7 Earthquake:* **G Zhou**, H Yao

1985878 *bEST – universal estimation of the Gutenberg-Richter b-value, with a MATLAB/Python toolbox:* **G Falcone**, M Taroni, D Zaccagnino, I Spassiani, G Petrillo, G Vitale, A Figlioli

1865100 *A Case Study of Area-Based Earthquake Ground Motion Hazards in the San Francisco Bay Area:* **S E Minson**, S Wu, S K Au, E S Cochran, K Yano, G A Parker, A Baltay, K Milner, M Page, C Henze, R C Turner

1993895 *A Restricted Maximum Likelihood Approach for Regional Earthquake Magnitude Conversion Along the East African Rift:* **M Al-Ajamee**

1884744 *ALL MODELS ARE WRONG, BUT SOME MODELS SEEM IMPLAUSIBLE:* **S Stein**, J S Neely, B D Spencer, L Salditch

1907587 *Challenging our degree of belief in paleoseismic magnitudes:* **M M C Carafa**, D Di Naccio Dr, D Zaccagnino

1917498 *Characteristics of the Ms7.6 Earthquake Sequence and Post-earthquake Trend Assessment in Noto Region, Ishikawa Prefecture, Japan on January 1, 2024:* **B Wu**

1972659 *Temporal and Spatial Characterization of Groundwater Aquifers Using Ambient Noise Tomography: Integration of Velocity Structure and Azimuthal Anisotropy:* **L W Chen**, N Nakata

1882741 *Temporal Velocity Variations of Shallow Subsurface Structure and Seismicity Triggered by Reservoir Impoundment at the Baihetan Reservoir, Southwest China:* **T Sun**, H Yao

1943673 *The Long-Term Impact of Industrial Fluid injection on Regional Geomechanical Properties: Time-Lapse Seismic Velocity Monitoring in the Montney Play, Western Canada Sedimentary Basin:* **D Zha**, H Yu, S Mao

1871861 *Comparison of b-value estimation methods for real-time aftershock forecasting in Japan:* **T Ueda**, H Kubo, K Shiomi

1873779 *CRUSTAL DYNAMICS AND SEISMIC HAZARD STUDIES IN WEST AFRICA:* **U A Kadiri**, A Kijko

1937555 *Earthquake Forecasting Using Single-Station Waveform Detection:* **E E Brodsky**, Y Iwasaki, K Dascher-Cousineau

1905732 *Estimation of Crustal Heterogeneous Attenuation Structure in Japan Based on Generalized Inversion Technique:* **Y Tomozawa**, T Hikita

1890370 *Evaluating Frequency Contributions to Pseudo-Spectral Response Spectra Using Physics-Based Earthquake Simulations Across Geological Settings:* **S K C**, C C Nweke

1846108 *Forecasting Aftershock Ground-Motion Hazards based on Short-term Earthquake Occurrence Probability Information after a Large Earthquake:* **H Kubo**, K Shiomi

1887886 *Generation of Synthetic Seismograms for Crustal Earthquakes Across Japan Using Conditional Generative Adversarial Networks and Generalized Inversion Technique:* **J Yamaguchi**, Y Tomozawa, Y Li, T Saka

1940515 *Is the Bay of Bengal becoming a potential source zone for future moderate-to-strong intraplate earthquakes?:* **M Shahabuddin**, P Pathak, W K Mohanty

1920515 *Modeling Multicycle Fault Slip and Instabilities Using Fourier Feature-Enhanced Physics-Informed Neural Networks:* **S Sapnawat**, S Ray

1907201 *Physics-based Ground Motion Simulation of the 2016 Gyeongju Earthquake Sequence in South Korea Using the Spectral Element Method:* **M K Layek**, S Jeong

1957959 *Physics-Based Seismic Hazard Assessment Using RSQSim and Monte Carlo Simulation: Validation Against USGS NSHM for Los Angeles:* **V Olawoyin**, J Ebel

1910001 *PROBABILISTIC SEISMIC HAZARD ANALYSIS OF NORTHEAST INDIA USING CLUSTERED SEISMICITY AND FAULT-BASED SOURCE MODELS:* **T J Sharma**, A M Nair, B K Nayak

1877900 *Real-Time Detection of Volcanic Seismic Precursors at Campi Flegrei using the PreD-Net Deep Learning Model:* **V Convertito**, F Giampaolo, S Izzo, F Piccialli Prof

1867141 *Reconstruction of Seismic Wavefields by Combining Physically-Based and Data-Driven Regression of Time-Frequency Characteristics:* **T Miyamoto**, H Kubo

1878082 *Rethinking Maximum Magnitudes: the Physics of Supercritical Ruptures in Fault Systems:* **D Zaccagnino**

1857325 *Seismic Hazard Assessment And Earthquake Forecasting In Northern Pakistan, NW Himalayas Using Machine Learning:* **M M Sahi**, P Khalid, A Ali, I Ehsan

1890048 *Site-Proxy Ground-Motion Waveform Generation Model Based on Similarity Evaluation of Temporal Characteristics in Waveforms Generated from a Conditional Generative Adversarial Network:* **Y Li**, J Yamaguchi, Y Tomozawa, T Saka

2003036 *Spatio-temporal background seismicity modeled using Gaussian processes:* **Y Niu**, J Zhuang

1877560 *Spatio-Temporal Localization of Rock Damage and Seismicity Before Large Earthquakes:* **Y Ben-Zion**

1889134 *Spatiotemporal analysis of seismicity affected by the Japanese major earthquakes using the Epidemic-Type Aftershock Sequence Model:* **H Uchida**, T Okada, R Fujimura, A Tagami

1948396 *Spatiotemporal Evolution Characteristics of Water Injection-Induced Earthquakes in the Southern Sichuan Region and Their Implications for Risk Assessment Research:* **D Li**, H Yu, S Zhou, R Lu, Y Guo

251977
Radio Solar and Heliospheric Observations, Instruments, and Modelling for Space Weather Research, Applications, and Forecasting

(cosponsored by AAS: American Astronomical Society,AOGS: Asia Oceania Geosciences Society,JpGU: Japan Geoscience Union,EGU: European Geosciences Union) *(joint with NH, P, SA, SM)*

Conveners: **Bernard Jackson**, University of California, San Diego; **Mario Bisi**, STFC Rutherford Appleton Laboratory

1979751 *A Time-of-Arrival Technique to Estimate the Source of a Solar Radio Burst:* **J Kirkey**, J Hendrickson, S Roman-Ramirez, M Akhavan-Tafti, J E Kooi, B Hicks, T Clarke

1957969 *Spatiotemporal Variability in b-values across Japan foreshock and aftershock sequences (2004–2020) with implications for seismic hazard:* **F Burkett**, Y Huang

2000644 *Statistical Analysis of Global Earthquake Patterns from USGS Data (2000–2025):* **R Saifullah**

1894284 *Surface Wave Amplification in the Bengal Basin: Theoretical and Numerical Insights into Basin-Induced Seismic Hazard:* **B Karmakar**, A Datta, S Mitra, V Chalakkatta

1911996 *Temporal Evolution of the b-value Prior to Recent Major Earthquakes in China:* **M Orlando**, M De Caro

1867539 *The 2025 Santorini Earthquake Sequence Unveils the Tail of the Magnitude-Frequency Distribution:* **G Zoeller**, S Hainzl

1882449 *Toward Ground Motion Forecasting:* **T Clements**, E S Cochran, S E Minson, N van der Elst, C E Yoon, A Baltay, M Page, M Schneider, T Norman, A Sabry, S Ranjan, J Gee, R Catchings

1878140 *Unobserved Microseismicity May Sustain Earthquake Cascades below Detection Thresholds:* **D Zaccagnino**, J Li, D Sornette

1978952 *Vertical continuation of seismic waveforms through the shallow structure with neural operators:* **S Huang**, Y Ben-Zion

1899202 *What Makes a Good Aftershock Forecast? Tracking the Performance of the Components of the USGS Forecasting System:* **M Schneider**, M Barall, J Hardebeck, A J Michael, M Page, N van der Elst, S Detweiler

1937652 *An Interplanetary Scintillation Kp Forecast Five Days in Advance Derived from 3-D Velocity, Density, and Solar Surface Extrapolated GSM Component Fields:* **B V Jackson**, A Buffington, K Iwai, M M Bisi

1856320 *Estimating Solar Wind Speeds Using Doppler Broadening: Results from MOM and Akatsuki:* **K Aggarwal**, R K Choudhary, A Datta

1981721 *Kilometric Type II Radio Bursts and Interplanetary Shocks: A Complete Survey:* **F Manini**, H Cremades, F López, T Nieves-Chinchilla

1863582 *Next-Generation IPS Observations for 3D Solar Wind Monitoring and Space Weather Prediction:* **K Iwai**, K Fujiki

1999391 *Predicting Full-Disk Solar F10.7 Images with a Deep Learning Method:* **M Wang**, H Jiang, S Yu, B Chen, P Zhang, J T L Wang

1981239 *Radio Investigations for Space Environment Research (RISER): Progress and Plans Two Year In...:* **M M Bisi**, B Forte, S E Milan, D Jackson, R Fallows, B V Jackson, D Odstrcil, E Henley, O Chang, D Barnes, M Bracamontes, S Gonzi, P Kinsler

250094
Volcanic Eruptions and Climate: Observations, Modeling, and Impacts (cosponsored by EGU: European Geosciences Union) *(joint with NH)*

Conveners: **Ciro Del Negro**, National Institute of Geophysics and Volcanology; **Vito Zago**, National Institute of Geophysics and Volcanology; **Eleonora Amato**, University of Palermo; **Federica Torrisi**, University of Catania

1992278 *Arctic climate response to explosive and effusive Icelandic eruptions:* **E van Dijk**, T Zoega, K Krüger, T Storelvmo

1951165 *Capturing Regional Climate Signals of Volcanic Eruptions: Toward Integrated Downscaling:* **V Zago**, E Amato, L Basile, S Cariello, C Corradino, G S Di Bella, A La Spina, A B Malaguti, F Torrisi, C Del Negro

1892479 *Does Climate Modulate Explosive Arc Volcanism? Re-Examining Pliocene-Pleistocene Distribution of Fallout Ashes at ODP Site 887, Northeast Pacific Ocean:* **M Stone**, S Straub, B Reilly, M E Raymo

NONLINEAR GEOPHYSICS

252254
Hydrology as a Physical Science in the Age of Machine Learning: Toward Theory-Driven Discovery *(joint with NG)*

Conveners: **Jonathan Frame**, University of Alabama; **Jasper Vrugt**, UC-Irvine; **Tadd Bindas**, Pennsylvania State University Main Campus

1871411 *A Physics-Enhanced Conservation-Augmented Net (PECAN) for distributed hydrologic modeling:* **Y Wang**, L Zhang, N B Erichson, T Yang

1845005 *Augmented Information Physical GeoIntelligence:* **R A P Perdigão**

1974712 *Building a Streamflow Reanalysis Dataset using Deep Learning-Based Geostatistical Signal Separation:* **Q Lee**, J Halgren, S Lama, P Chaudhari, H Lemons, J Cunningham

1963733 *Real-time Solar and Heliospheric Diagnostics with the Owens Valley Radio Observatory Long Wavelength Array:* **P Zhang**, B Chen, S Mondal, D E Gary

2001242 *Validating MHD Simulations of CMEs Using IPS Observations:* **N Nitta**, M Jin, K Iwai, D Shiota

2004758 *Integrated Observation and Modeling Reveal the 2024 Ruang Volcanic Plume within the Asian Tropopause Aerosol Layer:* **H Vernier, PhD**, G Berthet, N Rastogi, J P Vernier, N Dumélié, L Joly, R Meena, H Liu, P A Case, C D Boone, T N Knepp, R Das

1953066 *Investigating past, present and future volcanic impacts on climate using reduced-complexity aerosol-climate models:* **T J Aubry**, M M Chim, M Verkerk, C J Smith

1891705 *Modeling Volcanic Ash Impacts of the 2010 Eyjafjallajökull Eruption with CESM2:* **L Wu**, S Deutsch, A Hornby, D Meidan, E Gazel, F Galetto, L Li, M J Garay, O V Kalashnikova, H Elliott, C Gaston, N M Mahowald

1953656 *Monitoring volcanic SO2 Emissions using Foundation Model and Sentinel5-P TROPOMI data:* **S Cariello**, C Corradino, G S Di Bella, A La Spina, A B Malaguti, F Torrisi, C Del Negro

1907924 *Multi-mission Satellite Monitoring of Active Volcanoes Using Short-Wave Infrared (SWIR) Observations: Recent Advances And Future Perspectives:* **N Pergola**, E Ciancia, A Falconieri, C Filizzola, N Genzano, S Plank, G Mazzeo, C Pietrapertosa, F Marchese

1918637 *The atmospheric impacts of volcanic eruptions : From Disasters to Climate:* **J P Vernier**

1915544 *Demonstrating the Feasibility of DL-Based Pluvial Flood Mapping in Urban Settings:* **K Tavakoli**, S Seyvani, A Smith, M Saberian, M Abdelkader, J M Frame, M Temimi

1979006 *Developing a Machine Learning Framework for Seasonal Lake Level Forecasting of the Great Salt Lake:* **S Breuckman**, S A Koriche, S J Burian

1925177 *Do Process-Based Models Really Fall Short? Rethinking Channel Routing to Bridge the Gap with Machine Learning Models:* **E Sarkar**, A Kadu, B Biswal

1975758 *Explaining and Predicting the Model Performance via Convex Hull Analysis of Internal States of LSTM based NWM Surrogate:* **D Fernando**, J M Frame, C Mba

1968062 *Extracting Hydrological Information from LSTM Models Using Cell State Analysis:* **C Mba**, D Fernando, J M Frame, J Halgren

1958132 *Historical Streamflow Reconstruction Using Hydro-Transformer Models with High-Confidence Gage Estimates:* **T Akinrele**, P Chaudhari, S Lama, Q Lee, J Halgren, S Rahimi

1982689 *Neural Operator for Subsurface Soil Moisture Imputation:* **V Singh**, A Singh, PhD, K Gaurav

250496
On Parsimonious Mathematical Frameworks: Advancing Process-Based Understanding of Terrestrial Systems

Conveners: **Shashank Kumar Anand**, Texas A&M University; **Xue Feng**, University of California Berkeley; **Orencio Duran Vinent**, MARUM - University of Bremen; **Kaighin McColl**, Harvard University; **Sara Cerasoli**, Princeton University

1898505 *A General Model for Population Growth, Overshoot, and Collapse:* **S Perri**, C Kempes, S Levin, A Garg, G West

1906494 *A Stochastic Partial Differential Equation Model for Soil Moisture Dynamics:* **S Togo**, K Unami, M Fujihara

1924371 *Deducing Scaling of Shallow Storage from Streamflow Elasticity: Implications for Continental Moisture Recycling and Scale-Dependence of Evapotranspiration:* **A G Hunt**

249821
Partially miscible interfaces in porous media *(joint with MR, NG, V)*

Conveners: **Yashar Mehmani**, Pennsylvania State University Main Campus; **Benzhong Zhao**, McMaster University

1880977 *A theory for multicomponent Ostwald ripening in porous media:* **N Bueno**, L Ayala, Y Mehmani

248352
Upscaling of Multiphysical Transport in Porous Media: Advancements in Analytical, Numerical, Data-Driven, and Symbolic Computational Methods for Scale Translation *(joint with NG, NS)*

Conveners: **Ilenia Battiato**, San Diego State University; **Kyle Pietrzyk**, Lawrence Livermore National Laboratory; **Ziyan Wang**, Tsinghua University

1944544 *Advancing Methane Leakage Modeling in Shallow Aquifers with Wettability-Driven Capillary Heterogeneity Scaling:* **S Khandoozi**, S Gautam, C Dietsch, M Sahimi, D R Cole, R Soltanian

1859972 *Anisotropy in Multifractal Porous Media: A Simulation Approach:* **R Biswas**, B Sahoo, A Roy, D S Tripathy

1940909 *The North American Water Model (NAWM): Bridging the gap between hydrologic theory and actionable water predictions across large geographical domains.:* **M P Clark**

1993443 *Ecohydrological Controls on Convective Organization Across Heterogeneous Landscapes: Land-Surface Feedbacks and Long-Term Impacts on the Hydrologic Cycle:* **N J S**, E Cultra, J Yin, A M Porporato

1874452 *Geometric constraints on distribution networks:* **V R Voller**

1896842 *On the relation between rainfall intermittency and physical aridity: Insights from a scaling-based framework:* **M R Vargas Godoy**, G Villarini, A Molini

1966492 *Prediction horizon in river channel evolution: theoretical limits due to chaos and noise:* **O Wani**, B Noh

1934683 *Quantifying loop topology in coastal river channel networks:* **J Silvestre**, J Telushi, A Winn, E Katifori, J Shaw

1863036 *Transient States in Landscape Evolution: Branching, Overshoot, and Lasting Reorganization:* **A Hassanzadeh Bavojdan**, S K Anand, A Singh

1964428 *Why drying fronts should tend to catch wetting fronts in vertical infiltration.:* **E Jackson**, A G Hunt

1848903 *Influence of Pore-Scale Convection on Sea Ice Melt Rate:* **X Fu**, J Liu

1881472 *Ostwald Ripening in Underground Gas Storage:* **B Zhao**, M Salehpour, T Lan, M Z I Laku, N Bueno, Y Mehmani

1881539 *Predictive modeling of Ostwald ripening in porous microstructures:* **M Z I Laku**, M Salehpour, T Lan, B Zhao, Y Mehmani

1902456 *Role of miscibility and heterogeneities in determining supercritical CO_2 invasion patterns in sandstone:* **A L Herring**, R Huang, A Sheppard, M Saadatfar

1948662 *From Points to Polygons: Mapping Hydraulic Conductivities of Ohio's Aquifers:* **A Lanier**, M Potucek, M Scaccia, C Nelson

1896980 *Interception History: A Paradigm Shift for Particle Transport in Porous Media:* **B Al Zghoul**, W P Johnson, D Bolster, L Ullauri, S Volponi

1940093 *Macroscale Modeling of Microbial Reactions in Underground Hydrogen Storage Through Automated Symbolic Upscaling:* **M Ard**, I Battiato

1931026 *Multi-domain reactive transport modeling of GHG cycling in macroporous agricultural soils with a focus on N2O hotspots and hot moments:* **M Jia**, D R Lapen, D Su, U K Mayer

1991951 *Multi-scale Adsorption Behavior and Flow Mechanism of Capsule Polymers in Porous Media:* **B Wei**, Y Liu, J Hou

1955329 *Permeability Scaling Relationships from Core to Field Scale Measurements:* **D D Lucero**, S M Bourret, J P Ortiz, B Fritz, M Bodmer, J E Heath, K L Kuhlman, H Boukhalfa, S Otto, S M Ezzedine, B L Roberts, R Choens, M A Person, P H Stauffer

1854251 *Predicting multiphase flow and tracer transport for an underground chemical explosive test:* **J P Ortiz**, D D Lucero, E Rougier, E E Knight, S M Bourret, M Bodmer, B Fritz, J E Heath, C Neil, H Boukhalfa, K L Kuhlman, S M Ezzedine, B L Roberts, S Otto, R Choens, G Zyvoloski, P H Stauffer

247483
Advances in Data Assimilation, Data Fusion, Machine Learning, Predictability, and Uncertainty Quantification in the Geosciences
(joint with A, GC, H, OS)

Conveners: **Steven Fletcher**, Cooperative Institute for Research in the Atmosphere; **Brian Ancell**, Texas Tech University; **Matthias Morzfeld**, Organization Not Listed; **Derek Posselt**, NASA Jet Propulsion Laboratory

1855271 *Integrating Supervised and Self-Supervised Deep Learning to Develop Gap-Free Daytime and Nighttime Land Surface Temperature at 100-M Resolution:* **T Rashid**, D Tian

1859582 *We Need Better Long-Term Hazard Models: Building an unbiased model for volcanism and faulting in Kyushu (Japan):* **C Connor**, L Connor, M Connor

1860954 *Controlled Latent Diffusion Models for 3D Rock Reconstruction:* **D de Freitas Naiff**, B Schaeffer, G Pires, D Stojkovic, T Rapstine, F Ramos

1867657 *Explanation and Optimizing Multi-model Blending Algorithm Using Random Variables Theory:* **W Yu**, D Kan, C Yong, S Yue, Z Xiaoqing

1870413 *Can the Generative AI Shark Eat the Entire Data Assimilation System?:* **M Morzfeld**, D Hodyss

1872438 *Seismic Image Denoising via Diffusion Model by Signal Fitting:* **Y Zhang**, S Chen Prof

1873505 *Localizing High-Dimensional Covariance Estimates with Hierarchical Rank Structure:* **R Armstrong**, A Damle, S Otto

1877313 *Implementing an update of aerosol initial states for Community Multiscale Air Quality (CMAQ) model simulation through kriging method:* **T Choi**, C H Song, J Yu, S Y Park, D Lee

1878401 *Harnessing the Butterfly Effect: A Duality-Based Framework for the Efficient Control of Extreme Weather:* **T Miyoshi**

1875714 *SKB Task Force GWFTS: Pragmatic Validation of Models for Flow and Transport in Fractures at the Simplified Network Scale:* **B Gylling**, P Trinchero, M Kröhn, S Choi, J Hyman, P K Chen, T T Wang, J Jankovec, A Frampton, B Stock, M Hokr, S Finsterle

1916079 *Solute Mixing Under Unstable Miscible Two-Phase Flow in Heterogeneous Media:* **E Pescimoro**, M Dentz, J J Hidalgo, M Icardi

1925912 *Upscaling Nonlinear and Coupled Transport Systems in Heterogeneous Porous Media:* **K Pietrzyk**

1883875 *Upscaling Two-phase Flow with Capillary Heterogeneity Effects Using Optimization and Convolutional Neural Networks:* **A Rabinovich**, S Dhar

1880247 *Model discovery on the fly using continuous data assimilation:* **J Whitehead**

1890632 *Integrating ideas from nonlinear data assimilation into machine learning:* **P J van Leeuwen**

1892410 *Ensemble Data Assimilation Methods for Applications with Mixed Probability Distributions:* **J L Anderson**

1906121 *Investigating Mechanisms of Meso-Convective Systems with Large Ensemble DA: Meteorological Informatics Approach:* **T T Kawabata**

1910672 *Improving Extreme Rainfall Prediction over Northeast India through Hybrid Ensemble Data Assimilation Technique:* **A Kundu**, R B Gogoi, S S Kundu, A Chakravorty, A Srivastava, R Mahanta, K K Sarma, S P Aggarwal

1913488 *Physically Consistent Global Atmospheric Data Assimilation with Machine Learning in Latent Space:* **H Fan**, L Bai, B Fei, Y Xiao, Y Qu, P Gentine

1926576 *Seismic Low-Frequency Extrapolation via Physics-Aware Conditional Diffusion Models:* **I Deiana**, H Alswaidan, B L Biondi

1937239 *Nonlinear GenAI-Based Ensemble Data Assimilation Methods Applied to Convective-Scale Cloud Microphysical Parameter Estimation:* **D J Posselt**, H Chipilski

1937672 *Towards Developing Coupled Land-Atmosphere Data Assimilation for Improved S2S-Scale Predictability with the DOE E3SM Model:* **Z Pu**, S Zhang, B M Raczka, D Xu, J L Anderson, R Leung

1939509 *Bayesian Hierarchical Network Model for Disaggregation of Spring Seasonal Streamflow:* **C Jerez**, B Rajagopalan, U Lall

1950071 *Advancing Predictability of Extreme Weather through Data Assimilation and Machine Learning:* **S J Greybush**

1951571 *Applying a lognormal based 1DVAR retrieval to improve moisture values over the Mediterranean Region in the NVAP-M data set.:* **S J Fletcher**, J M Forsythe, T H Vonder Haar, S Liu

1958243 *Adapting a Neuro-Physical Inverter to Field Data: A Physics-Coupled Machine Learning Framework for Subsurface Resistivity Estimation in a Blind Geothermal System:* **J D Kim**, S Ravela, R L Evans

1962706 *Multiple Solutions to Geophysical Inverse Problems via Tracking Flights Across a Deeply Incised Model Landscape:* **M E Everett**

1968119 *AQcGAN - A Deep Conditional Generative Adversarial Network for Emulating and Extending Global Atmospheric Composition Forecasts:* **J A Sleeman**, V Shah, P Castellanos, C Keller, C J Ribaudo, A Hillier, C Tang, C Kofroth, A Chen, P Wales, J Kouatchou, R Govindaraju, K Breen, K E Knowland

1971118 *Data Assimilation for CONTIGO: Collaboration for Observational and Numerical Thermosphere with Integrated Geospace Orbits:* **N Mathews**, K Garcia-Sage, J Klenzing, P W Schuck, E Zesta

1974037 *Adaptive Ensemble Smoother – Multiple Data Assimilation (ES-MDA):* **K Ivey**, M Morzfeld

1985638 *An Approach to Improving the 4DEnVar-Initialized Deterministic Prediction Skill in a Global NWP System:* **S Zhu**, B Wang, L Zhang, J Liu, Y Liu, J Gong

250350
Advancing Data Assimilation for Earth System Prediction *(joint with A, GC, H, P)*

Conveners: **Soyoung Ha**, NCAR; **Moha Gharamti**, National Center for Atmospheric Research

1872307 *Towards Fully Coupled Ensemble Earth Data Assimilation and Prediction in the Red Sea: Progress and Challenges:* **I Hoteit**, S Sanikommu, R Sun, N Raboudi, M R Mazloff, S Masabathini, M Gharamti, A G Prajeesh, A Subramanian, P Zhan, B Ait-El-Fquih, G Krokos, H P Dasari, B D Cornuelle

1898886 *Recent Algorithmic Innovations in the Data Assimilation Research Testbed (DART):* **M Gharamti**

1904713 *The Role of Ocean Initialization in Improving the Decadal Prediction Skill of East Asian Summer Monsoon.:* **W Zhang**, Y He, B Wang

1910915 *4D sensitivity kernels, or time dependent observation operator, for assimilation of acoustic wave observations in atmosphere models:* **R Garcia**, S Gérier, R Martin

1919503 *Recent Developments and Applications of the Data Assimilation Research Testbed (DART) with Regional Chemical Data Assimilation and Emissions Estimation (Chem-DART):* **A Mizzi**, C H Hsu, A Raman, Y Cui, B C McDonald, M S Johnson, J L Anderson

1987932 *High-resolution wind fields for operational methane monitoring at oil and gas sites by integrating physics-based simulations, field observations, and scientific machine learning:* **A Fathi**, E Kharazmi, E Menezes, G E Karniadakis, A Sundaram

1991688 *Machine learning-based temporal tracking of volcanic umbrella clouds properties from spaceborne sensors: The 2022 Hunga and 2024 Ruang Eruptions:* **A Gupta**, R Bennartz

1994785 *Quantifying Information and Inferential Power in Incomplete Volcanic Eruption Records:* **C Harper**, L Karlstrom

1995346 *"A Skill-Optimized Reanalysis Ensemble with Cloud and Aerosol Integration for Assessing Spatiotemporal Trends in Precipitable Water over South and Southeast Asia":* **J Daluz**, K Fitch

2000239 *Learning Enhanced Ensemble Filters:* **B Chen**, E Bach, R Baptista, E Calvello, A Stuart

2001708 *Applying Machine Learning on Reflection Seismic and Well Logging Data to Identify Gas- and Brine-Saturated Reservoir Zones:* **M Hamdallah**, W Harbert

2001771 *GeoAttnUNet: A 3D Attention U-Net for CO_2 Plume Detection in Carbon Storage Sites:* **J Ali**, W K Mohanty, S Sarkar

1920538 *Challenges and Insights in Transitioning Hydrologic Data Assimilation from Regional to CONUS Scale:* **A Rafieeinasab**, M Gharamti, M Casali, I Srivastava, A L Dugger

1922165 *Toward a Unified Hybrid Linear Tangent Model for the Global Forecast System (GFS): Applications in Ensemble—Variational Data Assimilation:* **J Rotondo**, D Holdaway, T Hill, K Bhargava, C Sampson

1928144 *Improvements to ensemble-based data assimilation using stochastic parameterization in a global ocean model:* **K Boden**, I Grooms

1950874 *Land Surface Model Component and Data Assimilation for the Research-to-Operations Transition in the Unified Forecast System Development Framework:* **J Kim**, C H Jeon, G Petro, E Snyder

1957964 *Toward Consistent Aerosol Data Assimilation:* **C Dang**, B Johnson, S Ha, C H Lu, S W Wei, J Barré

1960279 *New Methods for Assimilating Highly Non-Gaussian Distributions and Recent Applications of the Data Assimilation Research Testbed:* **J L Anderson**, K Raeder, L Kugler, I Grooms, M M Wieringa, O Lewis, B M Raczka, B K Johnson

1999054 *Advancing Storm-Scale Ensemble Data Assimilation:* **S Ha**, J Park

253669
Applied Math Perspectives on Modeling, Analyzing, and Predicting Complex Nonlinear Geophysical Systems *(joint with A, H, IN, OS)*

Conveners: **Nan Chen**, University of Wisconsin Madison; **Di Qi**, Purdue University

1856918 *Probabilistic Digital Twins For Resilience-Based Recovery and Restoration:* **J M Restrepo**, J M Ramirez

1862970 *The Ensemble Kalman Inversion Race:* **R Gjini**, M Morzfeld, O Dunbar, T Schneider

1874010 *A Mathematical Framework for Quantifying Nonlinear Uncertainty Propagation in Eddy Identification Criteria:* **C Moser**, N Chen, S Wiggins

1882475 *A nonlinear full-field conceptual model for ENSO diversity:* **X Fang**, H Dijkstra, C Wieners, F Guardamagna

1884522 *A Physics-Informed Auto-Learning Framework under Partial Observations, with Applications to Developing Stochastic Conceptual Models:* **Y Zhang**, N Chen, X Fang, J Vialard

1887664 *Assimilative Causal Inference:* **N Chen**, M Andreou, E Bollt

1889318 *New Spectral Clustering-based Technique to Identify Coherent Stretching Structures in Arctic Sea Ice:* **L Puig Moner**, N O Aksamit

1890625 *What do we learn from looking at the Hasselmann model through two lenses: Stochastics meets statistics.:* **N W Watkins**, D A Stainforth

251241
Bridging Advances in Physics, Mathematics, Information Technologies and Complex Systems Intelligence across the Earth and Space Sciences *(joint with A, H, IN)*

Conveners: **Rui Perdigão**, Meteoceanics Institute for Complex System Science; **Julia Hall**, Vienna University of Technology (TU Wien)

251817
Developments in Machine Learning Across Earth System Modeling: Subgrid-Scale Parameterizations, Emulation and Hybrid Modeling *(joint with A, C, IN, OS)*

Conveners: **Simon Driscoll**, University of Cambridge; **Sara Shamekh**, New York University; **Akshay Subramaniam**, NVIDIA Corporation; **Aakash Sane**, Princeton University; **Karan Jakhar**, Rice University

1892744 *Spectral Decomposition of Nonlinear Coupled Thermal and Reactive Transport in Pore Networks for Aquifer Thermal Energy Storage Applications:* **B Gu**, B Tilley

1897977 *Parameter Estimation for Delay Differential Equations with Applications to Climate Models: A Galerkin Approximation Approach:* **J Hartman**, H Liu

1898840 *A stochastic precipitating quasi-geostrophic model:* **C Mou**, N Chen, L M Smith, Y Zhang

1899763 *Reduced Order Modeling of Multi-Scale Geoscientific Data with Shallow Recurrent Decoder Networks:* **H Bito**, M Denolle, Y Ni, C Jensen, M Gao, J R Bedford, E Latypova, N Kutz

1926244 *Extreme Event Aware Learning:* **K Chang**, T Sapsis

1928067 *Stochastic modeling of coupled climate variables and ice volume over the Pleistocene glacial cycles:* **P Patra**, L T Giorgini, J S Wettlaufer

1935848 *Data Assimilation Models for Computing Probability Distributions of Turbulent Geophysical Systems:* **D Qi**

1936838 *Efficient Implementation of On-the-Fly System Identification:* **N Schill**, J Whitehead

1946704 *Towards Dynamically Debiased andSuper-Resolved Emulators for Extreme EventPrediction in Climate Systems:* **S Stamatelopoulos**, Z Y Wan, I Lopez-Gomez, R Carver, L Zepeda-Núñez, F Sha, T Sapsis

1977982 *Non-asymptotic error bounds for nonlinear and linear ensemble transport filters:* **F Jorgensen**, Y Marzouk, R Baptista, F Hoffmann

1955407 *System-of-Systems for Multi-Hazard Risk Intelligence Networks (SoS4MHRIN): from Theory to Operation:* **R A P Perdigão**, J Hall

1978353 *High-Resolution Climate Projections Using Diffusion-Based Downscaling of a Lightweight Climate Emulator:* **M Darman**, H Guan, T Arcomano, R Maulik, A K Chattopadhyay, D Chakraborty

1986131 *A Convolutional Echo State AutoencodeR for High-Resolution Wind Forecasting:* **S Castruccio**, P Crippa, P Giani, M Bonas

2001918 *A Differentiable Meshfree Framework for Hybrid ML–Physics Forward and Inverse Modeling of Geomechanics and Geophysical Flow Hazards:* **Z Lin**, H Du, B Guo, Q He

1973648 *Can AI climate emulators quantify the statistics of unseen weather extremes?:* **A Wikner**, A Lancelin, T Arcomano, K Jakhar, D Patel, F Bouchet, P Hassanzadeh

1940186 *CERA: A Framework for Improved Generalization of Machine Learning Models to Changed Climates:* **S Liu**, P A O'Gorman

1931072 *Data-Driven Flux Parameterization in the Diabatic Atmospheric Boundary Layer:* **A Hammoud**, E Bou-Zeid, M Calaf, K Ghannam, M Bushuk, E S Titi

1959639 *Data-driven Models for Predicting Precipitation:* **R Saravanan**, C J Chen, C Schumacher, I Szunyogh, R Wong

1988373 *Data-driven models of a coefficient in a higher-order closure of atmospheric boundary layer turbulence:* **A Connolly**, B Stephens, E S Gentile, S Shamekh, M Kowalski, J Atkinson, V E Larson, P Gentine

1915286 *Differentiable Hybrid Neural-CFD Modeling of Spatiotemporal Dynamics in 3D Wall-Bounded Turbulence:* **X Fan**, M Hemant Parikh, Y Liu, M Wang, J X Wang

1963541 *Differentiable Land Model Reveals Global Environmental Controls on Latent Ecological Functions:* **J Fang**, K Bowman, W Zhao, X Lian, P Gentine

1940963 *Exploring the Dynamical and Physical Encoding of Idealised Baroclinic Waves in a Deep Learning Weather Model:* **C Bouvier**, S Driscoll, G J Hakim

1887278 *FedRAIN-Lite: Federated Reinforcement Algorithms for Improving Idealised Numerical Weather and Climate Models:* **P Nath**, S Schemm, H Moss, P Haynes, E Shuckburgh, M Webb

1980619 *First Coupled gSAM - Neural Network Simulations to Improve Representation of Precipitation in Climate Simulations:* **G Mooers**, P A O'Gorman, M Khairoutdinov, J Yuval

1896408 *Generalizable neural-network parameterization of mesoscale eddies in idealized and global ocean models:* **P Perezhogin**, A Adcroft, L Zanna

1886068 *Generalization of Machine-Learned Convection and Cloud Parameterization: Decadal Runs of a Hybrid GCM for Present-Day and +4K SST Climates:* **Y Han**, G J Zhang, Y Wang, H Wan

1939248 *Impact assessment of a Physics-informed Machine Learning Algorithm for Satellite, In-situ and High-frequency Radar Data Assimilation for West Coast Operational Forecast System using Joint Effort for Data Integration Framework: WCOFS-JEDI-AI:* **L Liu**, P Burke

1912336 *Incorporating Multivariate Consistency in ML-Based Weather Forecasting with Latent Constraints: A WC-4DVar Perspective:* **H Fan**, B Fei, Y Xiao, Y Qu, P Gentine

1895655 *JCM: A Differentiable Testbed for Hybrid Atmospheric Modeling:* **E Davenport**, V Madan, R Gjini, J Brzenski, N Ho, T Y Hsu, Y Liang, Z Liu, V Manivannan, E Pham, R Vutukuru, Z Yang, R Yu, N Lutsko, S Hoyer, D Watson-Parris

1865137 *Machine Learning for sensor placement and understanding the climates of Africa and Asia:* **S Driscoll**, L Joseph, K Hunt, E Black, R Maidment

1894623 *Machine Learning–Based Drag Parameterization in Stokes-Flow Suspensions:* **M Hiteh**, X Yu, S Balachandar

2000811 *Online learning of a machine learning cloud fraction closure in a hybrid earth system model:* **J Schmitt**, T Beucler, C Christopoulos, T Schneider

1859610 *Probing the Dynamical Response of Ocean Climate Emulators:* **A Subel**, L Zanna

1896240 *Reducing Coupled Model Biases with Machine Learning Corrections from Ocean Data Assimilation Increments:* **D Du**, F Lu, A Adcroft, L Zanna

1961949 *Rewiring Climate Modeling: Integrating Machine Learning Emulators into Earth System Science:* **P Van Katwyk**, B Fox-Kemper, K J Bergen

1980207 *Scalable Differentiable Programming for Sparse and Distributed Jacobians:* **A Pachalieva**, A Liu, F Verdugo Rojano, D O'Malley

1991258 *Subgrid-scale modeling of MHD turbulence:* **D A Kondrashov**, A Sciola

1945761 *Toward Causally-Constrained, Reduced Stochastic Neural Emulators of the Full Ocean:* **F Falasca**, L Zanna

1967165 *Toward Interpretable Convection Parameterization from a Recurrent Neural Network:* **Q Song**, Z Kuang

1959465 *Towards a Unified Data-Driven Boundary Layer Parameterization for Ocean and Atmosphere:* **R Falga**, L Zanna, S Shamekh

1848495 *Data-Driven Discovery of Constitutive Models for Ice Shelves:* **C Y Lai**, Y Wang, D J Prior, C Cowen-Breen

1853250 *Long-term Climate Emulation Using Machine Learning: A Comparison of Approaches:* **X Ren**, D J Lunt, F M Monteiro

1848956 *Quantifying Internal Modulation of Convective Organization Using Koopman–VAE:* **S Abramian**, O Pauluis, P Gentine

252317
Extreme Variability, Scales and Complexity: from Theory to Computational Techniques, from Urban Systems to Climate and Pandemics

(cosponsored by AOGS: Asia Oceania Geosciences Society,EGU: European Geosciences Union,JpGU: Japan Geoscience Union) *(joint with A, GC, GH, NH)*

Conveners: **Daniel Schertzer**, Organization Not Listed; **Anastasios Tsonis**, Hydrologic Research Center; **Shaun Lovejoy**, McGill Univ; **George Sugihara**, Scripps Institution of Oceanography, University of California San Diego

1896618 *Multifractals and Artificial Intelligence:* **D J M Schertzer**, H Zhou, I Tchiguirinskaia

251813
Geophysical Fluid Dynamics *(joint with A, OS, P, SH)*

Conveners: **Raffaele Marino**, Organization Not Listed; **Duane Rosenberg**, Organization Not Listed; **Ian Grooms**, University of Colorado at Boulder; **Nobumitsu Yokoi**, University of Tokyo

1874265 *Regime Transition in Double-Diffusive Convection: Thermochemical Coupling Effects:* **V Kannan**, C R Wilson, P Driscoll

1875800 *Polar vortex formation in differentially-rotating 2D disk turbulence:* **B A Hyatt**, D Lecoanet, A Frishman

1885839 *Spontaneous generation of helical flows by salt fingers:* **A Fraser**, A Van Kan, E Knobloch, K A Julien, C Liu

1892502 *Anisotropy of emergent large-scale dynamics in forced stratified shear flows:* **C C P Caulfield**, P Vieweg

1900198 *Numerical Analysis of Two-Component Buoyant Plumes Using GeoFLOW:* **J Glaister**, I Safarik, D L Rosenberg, I Jankov

1910324 *Closure Theory Using the Renormalization Group and Diffusion Models:* **Y Yasuda**, T Bischoff Dr

1912037 *Local Enhancements and Trends of the Buoyancy Flux in Stratified Geophysical Flows:* **G Song**

1912703 *Ekman-driven buoyancy flux in quasigeostrophic flow:* **I Grooms**, S Tro, R Robey

1917434 *Numerical Investigation of Flow Patterns Around Single and Twin Bridge Piers Using Turbulence Models in ANSYS Fluent:* **K A Hossain**, S Dey, A S Arian, A D Ricky, S Dey

1898482 *Scaling energy storage and scaling energy transport: the Half-order Energy Balance Equation and temperature projections to 2100:* **S Lovejoy**, D Lebiadowski

1907635 *Physically Grounded Origins of Precipitation Intermittency Beyond Universal Cascades:* **S Andria**, E Zorzetto, G G Katul, M Marani

1909186 *Resilient-by-Intermittency Principle:* **D J M Schertzer**, I Tchiguirinskaia, G Drouen

1930554 *Correcting Boundary Bias in Climate Networks: A Comparative Evaluation of Surrogate-Based Methods:* **B Ghanbarian**, V Oladoja, K Bosikun, T Jamali, J Kurths

1944215 *Generalized Categorical Physical Intelligence (GCPI): Deciphering Non-Ergodic Nonlinear Nonlocal Multiscale Spatiotemporal Neo-Systemic Complexity and Predictability:* **R A P Perdigão**

1978652 *Self-Affine Scaling of Earth's Islands:* **M Oline**, B B Cael, M Silber, J Hoskins

1927838 *Barotropic Regulation of Baroclinic Instability: The North Pacific Midwinter Suppression in a 1D Traffic (un)Jam Model:* **S J Smith**, L Novak, I Badezet-Delory, N Nakamura

1929244 *Do mesoscale eddies catalyze the ocean's internal wave spectrum?:* **K S Smith**, N DeFilippis, O Buhler, W Dong

1933761 *Modeling and Parametrization of Multiphase Ammonia Behavior and Dispersion in Marine Environments:* **S Lee**, S Lee, Y Sunwoo

1936763 *Characterization of the Turbulence Properties of the Solar Wind as Observed by Parker Solar Probe in Encounters 8-19:* **S Adhikari, PhD**, R Bandyopadhyay, W H Matthaeus, D J Ruffolo, P Thepthong, P Pongkitiwanichakul, S Roy, F Pecora, R Chhiber, A V Usmanov, M L Stevens, S T Badman, O Romeo, J Wang, J Goodwill, M L Goldstein

1951588 *Validation of the helicity turbulence model and its application to the solar angular-momentum transport:* **N Yokoi**

1958369 *Helicity modulation in stratified turbulent flows:* **R Marino**, G Song, F Feraco, R Foldes, A Pouquet, D L Rosenberg, P D Mininni, A Pumir, N Yokoi

1960868 *Heat Transfer Enhancement in Finned Micro-Channels Under Magnetic Dipole Effects: A Numerical Study:* **S Ahmad**, K Ali DR

1965314 *Scale-dependent Skewness and Kurtosis in Kinetic Plasmas and Magnetohydrodynamic Systems:* **J Wang**, F Pecora, R Bandyopadhyay, Y Yang, W H Matthaeus

1967913 *Numerical Investigation of Voigt-Regularized Compressible Flows:* **I Safarik**, D L Rosenberg, I Jankov

1978574 *Crustal Formation by Crystal Floatation in a Magma Ocean:* **K Augustson**, R I Citron, T Mittal

1987766 *Mechanisms governing eddy kinetic energy budget in the northwestern Indian Ocean: a modeling study:* **R O Chauhan**, M R Behera, S Balasubramanian

1991582 *Asymptotic Scaling Trends in Rotating Convection and Dynamo Experiments:* **J M Aurnou**, P Wulff, J Abbate, H Cao

253320
Lorenz Lecture

Conveners: **Enrico Camporeale**, Center for Mathematics and Computer Science (CWI); **Enrico Camporeale**, Center for Mathematics and Computer Science (CWI); **Ian Grooms**, University of Colorado at Boulder

249415
Machine Learning in Space Weather and Heliophysics (cosponsored by AMS: American Meteorological Society,EGU: European Geosciences Union) *(joint with IN, SA, SH, SM)*

Conveners: **Enrico Camporeale**, Center for Mathematics and Computer Science (CWI); **Jacob Bortnik**, University of California Los Angeles; **Ryan McGranaghan**, NASA Jet Propulsion Laboratory; **Tomoko Matsuo**, Univ of Colorado-CIRES

1851537 *Information theory based system level Babcock-Leighton flux transport model-data comparisons:* **S Wing**, J Johnson, M Dikpati

1881593 *A novel generative search framework that uses a physical space to generate and retrieve solar magnetic active regions.:* **S Chatterjee**, A Muñoz-Jaramillo, A V Malanushenko

1891294 *Real-time forecasting model of auroral electron precipitation using AI techniques:* **S G Valluri**, H K Connor

1891976 *Real-Time Multi-Spectral Solar Flare Localization Using DETR-Based Object Detection on NVIDIA Jetson for Space-Based Operations:* **Y Aytac**

1895779 *Limits of Operational Dst Forecasting Using L1 Solar Wind Data:* **A Collado-Villaverde**, P Muñoz Sr, C Cid

1897618 *Next-Generation MHD Modeling Of Solar Wind Plasma Using Neural Operators:* **P Mayank**, E Camporeale, Z Huang, G Toth

1901334 *Predicting Equatorial Electron Flux Measurements from LEO:* **D L Stumbaugh**, J Bortnik

1911486 *Automatic Identification of Auroral Beads and Omega Bands in THEMIS All-Sky Images:* **J W Johnson**, D S Ozturk, H K Connor, D L Hampton, A M Keesee

1997208 *Challenges in detecting asymptotic rotating convection in diffusion-free parameter space:* **J S Cheng**, J M Aurnou

1999603 *Searching for signatures of oscillations in low Prandtl number rotating convection:* **W Powers**, B Hindman

1912166 *Magnetosphere-Aurora Mapping: Challenges and Solutions Offered by Data Mining:* **M I Sitnov**, G K Stephens, A Artemyev, T Motoba, N A Tsyganenko

1917775 *Deterministic and Probabilistic Near-Earth Space Weather Forecasting with Machine Learning:* **D Holmberg**, I Zaitsev, M Alho, I Bouri, F Franssila, M Palmroth, T Roos

1922316 *Reconstructing Long-Term Solar EUV Irradiance from CaII K Observations Using Bayesian Deep Learning:* **H Jiang**, Q Li, J T L Wang, H Wang, S Criscuoli

1923903 *ML-Based Prediction of Magnetic Polarities in Far-Side Solar Active Regions:* **A Hamada**, K Jain, H Strecker, C A Lindsey, D Orozco Suárez

1931371 *Modeling Ionospheric Electron Density at Swarm Satellite Altitudes Using Neural Networks:* **A A Akerele**, D I Okoh, S T Ogunjo, B Rabiu

1933417 *CHESS: Coronal Hole Extraction with Semantic Segmentation:* **J Landeros**, R Attie, M Kirk, L Boucheron, B Kramer, K Muglach

1936378 *Influence-Aware Dataset Distillation and Ensemble Learning for Imbalanced Space Weather Regression Problems:* **E Camporeale**

1948693 *Toward Machine Learning Surrogates of the Solar Wind:* **D Kempton**, R Mansouri, P Riley, R Angryk

1952213 *FOXES: A Framework for Operational X-ray Emission Synthesis:* **G Goodwin**, A March, J Biradar, C Schirninger, A Vourlidas, R Jarolim, L Pratt, N Nitta

1963773 *Benchmarking Space-Weather Drag Predictions: Can Foundational Models Outperform Architectures Trained from Scratch?:* **S Sanchez-Hurtado**, V Rodriguez-Fernandez

1971832 *Equivalent Kernel Method for FUV Inversion Problems: Applications to NASA GOLD Disk Emission Data:* **M LeDuc**, T Matsuo, W Kleiber

1974611 *Machine-Learning Reconstruction and Interpretation of Radiation Belt Enhancement and Depletion Events:* **J Bortnik**, D Ma, X Chu, R Matsuura, Q Ma

1976344 *Spherical Spectropolarimetric Inversions with PINNs Enable Novel Magnetograms from SDO/HMI:* **R Jarolim**, M Molnar, B Tremblay, R Centeno Elliott, M Rempel

1979353 *IonCast: A Deep Learning Framework for Forecasting Ionospheric Dynamics:* **M Vergalla**, S Mestici, H S Kelebek, L Wolniewicz, G Acciarini, B Poduval, U Rebbapragada, O P Verkhoglyadova, T Berger, F Soboczenski, A G Baydin

1981354 *Quantifying Storm-Time Neutral Density Uncertainties using a Physics-Based Particle Filter Framework:* **N Dietrich**, T Matsuo

253674
Nonlinear Geophysics' General Contributions

Conveners: **Steven Fletcher**, Cooperative Institute for Research in the Atmosphere; **Enrico Camporeale**, Center for Mathematics and Computer Science (CWI); **Ian Grooms**, University of Colorado at Boulder

249684
Studies on the Coupled Multi-Physical (THBCM) Behavior of Geomaterials and Geosystems *(joint with MR, NG, NH, NS)*

Conveners: **Shahrzad Roshankhah**, University of Utah; **Hiroki Sone**, University of Wisconsin; **Wenfeng Li**, Los Alamos National Laboratory

1885651 *Assessing the Seismogenic Potential of Critically-Stressed Faults during Pore Pressure Oscillations Using In-Situ micro-CT Imaging and Acoustic Emissions:* **Y LIU**, Q Zhao, W Shu

252126
Recent Advances in Near-Surface Geophysics (General Contributions) *(joint with B, H, MR, NG)*

Conveners: **Raymond J. Hess**, Rutgers University; **Elnaz Pezeshki**, Organization Not Listed; **Emmanuel Oladeji**, University of California Davis; **Klaudio Peshtani**, Pacific Northwest National Laboratory; **Siena Oswald**, University of California Santa Cruz

1889252 *3D Joint Inversion of Multispacing Magnetic Data:* **G Kim**, H Rim

1932858 *Characterizing Hanford Vadose Zone Sediments Using Nuclear Magnetic Resonance:* **C Caro Cano**, M Figueroa, K Keating, J Robinson

1982872 *Enhancing Machine Learning Based 3D Electron Models with TEC:* **L Smith**, M Cohen

1983313 *SDO-ML Video Foundation Model with Neural Fields and its application to Solar Wind Structure classification:* **D Martin**, J Gallego, J Hong, C O'Brien, J Kobayashi, V Moraes Filho, E Samara

1985553 *Toward Automated Detection and Analysis of Magnetic Bright Points to Study Flaring Region Footpoints Using Machine Learning:* **O Oyewole**, J Shetye, O Vesa

1989733 *An Advanced Machine Learning Approach for Long-Term Probabilistic Dst Forecasting:* **A Hu**, E Camporeale, S Mutschler

1994426 *SONTRAC Neutron Path Reconstruction, Physics-Informed Machine Learning:* **L Cunningham**, N Mathews, M M Moussa, S Hard, J G Mitchell, G A de Nolfo

1891919 *Time Irreversibility as an Indicator of Approaching Tipping Points in Earth Subsystems:* **P Madathil Kooloth**, J Lu, A Rupe, D DeSantis, C K Bakker

1898825 *Integrating Fourier Scalable-Stratigraphy and Stein Variational Inference for Subsurface Density Reconstruction:* **Z Zhang**, X Wei, Y Huang, J Chen

1894046 *Evolution of Crustal Permeability as a Coupled Seismo-THMC Process:* **D Elsworth**, P Yu, J Wang, A Eijsink, M E M Nurshal, M Roseboom, X He, H Klinghammer, Q Gan, Y Guglielmi, S Liu, C Marone, T Mittal, J Riviere, P Shokouhi, A Mali

1991078 *Nucleation in Microchannels under Solute Gradients: Inferring Allen–Cahn Reaction Kinetics for Enzyme-Mediated Calcite Growth:* **P Vyas**, T Petersen, C C Nweke

1996505 *Modeling Poromechanical and Geophysical Processes in Energy and Environmental Geo-Systems:* **S Roshankhah**, S Shandilaya

1941598 *A new small coil transient electromagnetic (TEM) instrument and cases imaging the critical zone:* **E Auken**, P Maurya

1943737 *Archaeo-geophysical area survey in the Amazon rainforest of Bolivia:* **J Fassbinder**, L Lambers, S Hahn, R Torrico, C James Betancourt

2001746 *Assessing Effectiveness of Modern Smartphone Magnetometers for Mapping Buried Utilities:* **M Ahmed**, A Innes

1884706 *Closed-form Expressions of Gravity and Magnetic Responses due to an Elliptical Cylinder:* **H Rim**, G Kim

1869132 *Delineating Groundwater-Surface Water Interactions in a Flow-Through Glacial Lake Down-Gradient of Crude Oil Spill Plumes:* **H Moore**, L D Slater, N Terry, B A Bekins, J F Devlin, I Cozzarelli, D Ntarlagiannis

1864066 *Enhance Near-Surface Imaging Accuracy with Kernel FCM Clustering-Constrained Inversion of Ambient Noise Surface Wave Data:* **Z Shi**, X He

1896400 *Evaluating a novel electromagnetic induction array for high-resolution magnetic susceptibility mapping in igneous environments.:* **P De Smedt**, B Dousteyssier, J Guillemoteau, F X Simon, V Van Parys, A Vauthier, L Claeys

1911043 *Interpreting Subsurface Disturbances Using Ground Penetrating Radar and Modeling of a Historic Urban Setting in Austin, Texas:* **L Lemmons**, S Hernandez, M Gowens, R Dees, M E Everett

1969533 *Near-Surface Seismic Analysis of the Bliss Creek Lineament, West-Central Mississippi:* **R Failing**, J B Harris

252394
Numerical Models, Laboratory Experiments, and Field Observations of Explosive or Earthquake Sources and Seismic Wave Propagation for Nuclear Explosion Monitoring
(joint with NG)

Conveners: **Kenny Ryan**, USGS; **Qinya Liu**, University of Toronto; **Rongmao Zhou**, Microseismic Inc.; **Nanqiao Du**, University of Toronto

1873198 *(INVITED) Yield and Depth of Explosions – Analysis and Influence of Geophysical Parameters Based on Waveform Modeling – Numerical Experiments:* **C K Saikia**, R Modrak, R Zhou, C Popelliers, K Gao

1906894 *3D Simulation of the Seismic Wave Propagation of the M6.4 Puerto Rico Earthquake (2020) Using SPECFEM3D and Unstructured Grids: Validation with Observed Data:* **D Melo**, E Florez Sr, V A Huerfano Moreno

1960754 *A Journey from Mining to Confining to Execution of a Large-Scale Multi-Physics Experiment for Nuclear Explosion Monitoring:* **S M Ezzedine**

1911237 *Comparison of Green's Functions from Different Algorithms and Their Effects to Source Inversion:* **R Zhou**, C K Saikia, R Modrak

1848417 *Dependance of spherical wave attenuation from an underground explosion on the poroelastic properties of dry and saturated porous rocks:* **O Vorobiev**, S M Ezzedine

1955003 *Discriminating Explosions and Earthquakes in the United Kingdom Using Local Distance P/S Ratios and Machine Learning Classification:* **M Merrett**, D N Green, S E J Nippress, R Luckett

1891647 *Scale Analysis of Atmospheric Flow over Vegetation Canopy:a Wind Tunnel Study:* **G Chen**, C H Liu, F Li

1852137 *The Kimal Converter Substation - The Challenges of Geoelectric Modelling in a Desert Environment:* **P F Freire**, B Abarca, N Meqbel, B Sergio, J Calderon, F Adaro, T Wei, W Jianzhong

1893364 *Towards a more quantitative comparison of electromagnetic induction surveys for regional nutrient loss assessments of agricultural fields:* **J Thompson**, D Ntarlagiannis, A R Buda, L D Slater

1856786 *Using Near-Surface Geophysics to Estimate Water Storage From a Porosity Model of the Hillslopes in a High-Altitude Andean Watershed:* **J Cambeiro**, K Keating, J Oshun, J L Hayes, M Lang, O Walbert

1993505 *Enhancing Signal Detection in High-Amplitude Seismic Noise Using Arrays, Waveform Cross-Correlation, and Noise Whitening:* **I O Kitov**, I G Dricker

1894658 *Examining the Effects of Basin Interfaces on Ground Motions with Lab-Based Seismic Data Obtained Using a 3D-Printed Basin Model:* **S Chen**, S Park

1894429 *Exploring deep learning methods for characterizing near-source properties of buried explosions from seismic data:* **J Harding**, L A Preston, M Eliassi

1894255 *Geocentrifuge Modeling of Underground Chemical Explosions: Damage Types, Stress Cage Formation, and Seismic Signals:* **J E Heath**, K L Kuhlman, M M Mills, R P Jensen, T A Dewers, S Broome, V Saul, R Sanchez, C Stanciu, B Young, B Fehr

1970643 *High-frequency explosion simulations: effects from shallow scattering, three-dimensional structure, and variable crustal thickness:* **R Modrak**, K Gao, J A Kintner, N Creasy, R Zhou, C Saikia

2000866 *Mechanisms of Shear Wave Generation in Underground Explosions:* **Z Lei**, B Euser, E Rougier, E E Knight, C S Larmat

1911614 *Probabilistic Yield Estimation of the 2020 Beirut Explosion Based on Near-Field Observations:* **S Terrana**, O Gainville

1901993 *Site Characterization of the PE1 Testbed in the Vitric Non-Welded Tuff of Aqueduct Mesa, NV:* **M Bodmer**, M Townsend, D Smith, J J Reppart, A Miller, N Downs, A Malach, S Flores, J E Wilson, B L Roberts, C Freimuth, M Dietel, J Larotonda, J Morris, M P Foxe

1959517 *SPECFEM3D-CRAM3D Coupled Simulation of Seismic Waves from Nuclear explosion Based on Interface Discontinuity:* **Q Liu**, N Du, T Liu, J Stevens, M O'Brien, K J Ryan

SCIENCE AND SOCIETY

256628
The End of The Golden Era of Polar and Cryosphere Science in the US? *(joint with SY)*

Conveners: **Asa Rennermalm**, Rutgers University New Brunswick; **Asa Rennermalm**, Rutgers University New Brunswick; **Keith Jennings**, University of Colorado at Boulder; **Mohammad Afzal Shadab**, University of Texas at Austin; **Gifford Wong**, Dartmouth College; **Mohammad Afzal Shadab**, University of Texas at Austin

247287
Macro-Energy Systems: An Emergent Interdisciplinary Field *(joint with NH, SY)*

Conveners: **Edgar Virgüez**, Carnegie Institution for Science; **Erin Baker**, University of Massachusetts Amherst; **Morgan Edwards**, University of Wisconsin Madison; **Gabriel Mantegna**, Princeton University

1971779 *A reinforcement learning approach to energy transition planning under uncertainty:* **M Zhang**, M Edwards, A Carlino, F Kanyako, S Fletcher

1852075 *Agent-Based Infrastructure Planning to Better Understand Energy Transitions:* **R Macdonald**, Y Weng

1987123 *Analysing macro-economic effects of regionally differentiated climate and energy policies in the global integrated assessment model GCAM:* **C Bertram**, Y R Cui, A Fawcett, H McJeon, G Iyer, T Tibebu, C Guo, J Eom

1925023 *Assessing the Value of Pumped Storage Hydropower (PSH) in Appalachian Virginia to the U.S. Eastern Interconnection:* **M U Rahman**, J Quinn, J Qian, J Kern, E Loth

1964321 *Bridging the Modeling Gap Between Political Economic Systems and Macro-Energy Systems:* **M Davidson**

1895767 *Can We Sequester Carbon Fast Enough? Growing Disconnect Between Models and Reality:* **H Daigle**, A P Ravikumar

1897423 *Capacity Expansion Planning with Robust Alternatives: A Community Choice Aggregator Case Study:* **M Jaradat**, N Patankar

1974403 *Arête Glacier Initiative – funding glaciological research to reduce the risks of sea-level rise:* **B M Minchew**, C Meyer, L Mahle, L Narcisse

1874418 *Our Dependence upon Environmental Monitoring:* **L D Hinzman**

1913751 *Polar Science in the U.S. - Trend or Variability?:* **M R Albert**

1870840 *Supporting our colleagues in America: Defending Earth Science in an era of uncertainty:* **H A Fricker**

1904046 *The US Starting Building its Polar Research Capacity in WW2 - Why Throw it Away in 2025?:* **P R Bierman**

1924852 *Turbulent times- a perspective from a former "Official":* **R L Hawley**

1865902 *What's Next For Snow: Insights from the NASA Terrestrial Hydrology Program Community Snow Meeting:* **K Hale**

1856904 *Carbon Removal and the Uneven Burdens of Net-Zero: Justice and Risk in Macro-Energy Systems:* **C Bergero**, J Cheng, Q Zhang, Y Ou, H McJeon, D Nock, I Azevedo, E Brutschin, Z Nicholls, M Gidden, E Grubert, S Davis, M Edwards

1913559 *Consequential Social and Environmental Life-Cycle Assessment of Fusion Power Systems at Scale:* **Z Thomas**, M Edwards

1923558 *Coordinated Hydropower Dispatch Decisions in Interconnected Water–Energy Systems:* **H Eldardiry**, P Bunnak, S Galelli

1951364 *Coupling Integrated Assessment and Power System Models to Assess Grid Impacts of Economy-Wide Decarbonization: Insights from South America's Mercosur+ Region:* **J B Khalil**, A F M K Chowdhury, J Wessel, K Amo Offei-Akoto, T B Wild, Y R Cui, G Iyer, J Lamontagne

1981019 *Decomposing the impact of carbon dioxide removal deployment on the U.S. net-zero scenarios:* **F Kanyako**, M Edwards, M Craig

1928516 *Deep Learning-Based Projections of Baseline and Peak Electricity Demand for Enhancing Grid Resilience Under Climate Change:* **B Sahin**, M R Allen Dumas

1933479 *Effects of model choices and technology strategies on the assessment of air quality and health benefits from Net-Zero transition:* **J Shiwang**, W Peng, J Bistline, J Farbes, X Huang, G Iyer, J Jenkins, E M Knipping, N Mailloux, E Mayfield, A Venkatesh, Q Zhu

1860461 *Empirical estimates of cost of capital for industrial-scale green hydrogen projects:* **R Sota**, S Venghaus

1927158 *Enabling Sustainable Growth in Developing Regions through Grid Integration: A Case for ASEAN Power Grid:* **Z Feng**, H Eldardiry, P Bunnak, S Galelli

1876818 *Environmental Impacts and Trade-Offs for New Zealand's Energy Transition: A Life Cycle Assessment Perspective:* **F Astorga-Mendoza**, J Haas, R Peer

1869697 *Feedstock Sourcing Can Double GHG Intensity in US Plastic Supply Chains: A Geospatial Cradle-to-Gate Life Cycle Analysis of US Fossil-based Plastic Supply Chains:* **Y Zhu**, A P Ravikumar

1916196 *How to Minimize the Indirect Emissions from Electricity Consumption for Direct Air Capture:* **M Adam**, A Mohan, J Jenkins

1946052 *Increasing Electricity Demand: Challenges & Opportunities:* **T Gunda**, R Valdez, F Hasiuk

1880710 *Joint Impacts of Climate Change and Technology Diffusion on Future Uncertain Peak Electricity Demand:* **M Shi**, M Craig

1956577 *Liberating U.S. Energy Data: Addressing Shared Data Barriers in Macro Energy Systems Research:* **E Belfer**, D Xia

1882367 *Linking enhanced energy systems models to deliberative citizen juries to advance decarbonization in New England, USA:* **R Calder**, S Evans-Brown, R B Howarth, C Jackson, G Mavrommati, A Mortazavigazar

1988797 *Location-Based Power Planning with Aging Plant Sites for a Just Energy Transition: Coal Repurposing Opportunities in South Africa:* **Z Huang**, B F Hobbs, D Chattopadhyay

1853636 *Macro-Energy Systems: Governance and Strategies for a Just, Decarbonized Future:* **E Grubert**

1971706 *Mapping Wellbeing Outcomes Across Carbon Dioxide Removal Levels in Climate Pathways:* **C P Wejnert-Depue**, E Brutschin, M Andrijevic

1844618 *MAXIMIZING WIND TURBINE EFFICIENCY THROUGH ADAPTIVE BLADE PITCH CONTROL:* **R Singh**

1959026 *Mitigating Climate Change Induced Risk for Investment Pathways in the Bulk Power System:* **M Craig**, M Christino

2000012 *Modeling the Environmental and Health Impacts of Alternative Grid Configurations:* **J French**, J Potts, S Castellanos

1994763 *Modeling the North Carolina Carbon Plan Using GLIMPSE:* **T White**, N Kittner

1928432 *Multiple-scale Land-sparing Opportunities of Renewable Energy Transitions:* **X Li**, R R Hernandez, S M Jordaan

1891255 *Near-term opportunities to avoid blast furnace relining in the United States:* **M Atouife**, J Jenkins

1956867 *Optimal Charging Infrastructure Locations and Grid Upgrades for the U.S. Freight Electrification Transition:* **E Kontou**, R Zhang, M Hedrick

2001324 *Optimizing Renewable Energy Siting in New York State: A Scenario-Based Approach for Onshore Wind and Utility-Scale Solar Development:* **K Ganesamoorthy**, N Patankar

1977474 *Plant-by-plant strategies for decarbonizing hard-to-abate industries using clean hydrogen:* **L Peng**, J Liu, G He, J Lin

1967034 *Post-combustion fossil-fuel CCS in the US: impact of market and policy dynamics:* **K Bice**, L Gulden, C F Harvey

1880704 *Projected Increases in Cooling Energy Demand across Africa under Climate Change and Population Growth Scenarios:* **G Kondi Akara**, M B Sylla, W Ndifon

1983409 *Public support for decarbonization and green industrial development in the United States:* **H Buck**, P Shah, L Arpan, J Yang, T Young

1884490 *Representing Real-World Speed Limits to Low-Carbon Technology Deployment in Macro-Energy System Models:* **E Erickson**, X Huang, C Greig, E Larson, W Peng

1993345 *Sociotechnical Modeling of a Just Industrial Electrification Transition:* **R Ciez**, H Qin, A Nath, P Mukherjee

1965395 *The EARNEST Consortium:* **E Virgüez**, I Azevedo

1915155 *The Impacts of Transmission Expansion, Long Duration Energy Storage, and Floating Offshore Wind Mandates on Resource Integration in the Western U.S. Grid:* **N Angliviel de La Beaumelle**, I Azevedo, J S Davis, J Dowling, D Saad, K Tehranchi

1890968 *Time of Emergence of Global Wind-Power-Potential Signals in CMIP6 Projections:* **H Pan**, L Liu

1945751 *Timelines and Delays in European Grid Expansion:* **D Alessi**, K Surana, B Zakeri

2002494 *Understanding the Impacts of Large-Load Growth on Generation Portfolio Requirements in Texas:* **J Potts**, S Castellanos

250998

Advances in Drought Monitoring and Risk Management: Integrating Remote Sensing, Stochastic Hydrology, Modeling, and Surveys

(joint with A, GC, SY)

Conveners: **Sara Sadri**, Princeton University; **Upmanu Lall**, Columbia University of New York; **Shraddhanand Shukla**, UC Santa Barbara

1968839 *A Multivariate Drought Index for the Combined Influence of Snow and Antecedent Soil Moisture:* **M Sabin**, B Livneh, N R Bjarke

1941382 *A Non-Stationary Copula–Wavelet Framework for Diagnosing Drought Propagation Strength and Timing:* **M Park**, U Lall, N Devineni, H H Kwon

1951063 *Analyzing Future Precipitation Extremes Patterns in the Upper Amazon Basin Using CMIP6 Scenarios. Case Study: Ucayali River:* **J Guerrero-Gallego**, S Lazarus, N Velásquez

1876811 *Analyzing the Relationship Between a Meteorological Drought Indicator and Social Response to Drought:* **Y Kwon**, J Lee, H Jeong

1860592 *Assessing Drought Vulnerability Under Climate Change Using Deep Learning Approaches:* **W Sun**, F J Chang, M Girotto

1912847 *Assessing Streamflow Droughts in the United States using Remotely Sensed Total Water Storage Data:* **A Dischner**, S R Adelsperger, S Robeson, D L Ficklin

1904423 *Assessing the Impact of Climate Change on Groundwater Resources in Taoyuan Using THMC Model:* **Y C Ho**, C W Liu, M H Wei, W L Chen, L H Chiu, T Y Chu, M H Lin, J S Chen

1940837 *Enhancing Flash Drought Detection Through Seasonal Hierarchical Ensemble Modeling in South Korea:* **S Kang**, H H Kwon

1963818 *Enhancing hydrological drought monitoring for USDM end users using NASA LIS and WRF-Hydro modeling systems:* **T Roy**, T M Lahmers, N Kumar, A H Mazrooei, T Haigh, A L Dugger, S V Kumar, C Poulsen, M D Svoboda

1952684 *Enhancing streamflow drought simulation through calibration for the US Drought Monitor:* **N Kumar**, T M Lahmers, A H Mazrooei, T Haigh, A L Dugger, S V Kumar, M D Svoboda, T Roy

1947121 *Evaluating National Water Model streamflow prediction bias during identified drought events in the Colorado River Basin:* **R van der Heijden**, A Dadkhah, D M Rizzo, E Ghazanfari, M M Dewoolkar, A Aghababaei, E Webster-Esho, X Li, G P Williams, N Jones, P Clement

1873944 *Evaluating the Accuracy of Evaporative Stress Index-based Flash Drought Detection in Global Reanalysis Data:* **P Raghav**, M Kumar

1993879 *Flash Drought Onset Dynamics Across India: Insights into the PET Approach Dilemma:* **A Pathania**, V Gupta

1902023 *Future Increase in Spatially Compounding Drought and Heatwave Events Over Global Breadbasket Regions:* **A K Mishra**, A Sabut

1939591 *Impacts of Flash Droughts on Crop Productivity and Yield in the Continental United States:* **H Yang Sr**, J Yang

1919808 *Integrated Machine and Deep Learning Approach for Mapping Agricultural Drought Zonation in Semi-Arid Tamil Nadu, India Using Multi-Source Remote Sensing Data:* **S Mondal**, A Prasad K

1914902 *Integrating Remote Sensing and Transformer Neural Networks for Drought Stress Impact on Water Use Efficiency and Cultivated:* **M Farhan**, T Wu

1977657 *Integrating Satellite Remote Sensing and Recurrent Neural Networks for Drought Stress Monitoring in Urban Vegetation Ecosystems:* **A Chatterjee**

2002928 *Interacting Water Sources Shape Vegetation Phenology Across Elevation Zones and Vegetation Types in the Cosumnes Watershed:* **Y Zou**, M Girotto, G Carlson

1992762 *Monitoring Drought Impacts in Quasi Real-Time by Combining Hydroclimatic Data, Water Systems, And Socio-Economic Approaches:* **A Escriva-Bou**

1865299 *Seasonal and Regional Variability in Hydrological and Drought Responses in the Great Lakes Region: Impacts on Baseflow, Total Flow, and SPEI:* **K A Clancy**

1985546 *Shifting Extremes in the American Southwest: A Non-Stationary GEV Ensemble Approach:* **O M Cabezas-Nivin**, E Ingol Blanco

1946614 *The U.S. Drought Impact Reporter at 20 Years: What We Have Learned:* **K H Smith**, M J Hayes, D Gutzmer, M D Svoboda

1971732 *Tracing Drought Propagation across Transboundary River systems in the 20th and 21st Centuries: A Case Study of the Nile River Basin:* **D Hegazy**, M Sultan, H Elhaddad, E Yan, H Karimi

1848558 *Tracking Drought Movement Over Time and Space:* **A K Mishra**, A Sabut

1980701 *Tracking Hydrologic Drought with the United States GPS-Based Drought Index (US-GDI):* **Z Young**, H R Martens, Z H Hoylman, W P Gardner

1935932 *Uncovering Stand-Alone Flash Droughts in India: An Elegant Framework and Its Agricultural Relevance:* **P Kumari**, V R

1935168 *Understanding drivers and spatial propagation of flash drought in the Contiguous United States using Deep Learning and Explainable AI:* **S Bakar**, H Kim, J B Basara, P A Beling, V Lakshmi

251580
Headwaters Come First: Advancements in the Science and Practice of Measurement, Protection, and Restoration of Headwater Catchments *(joint with EP, SY)*

Conveners: **Sarah Ogle**, Scripps Institution of Oceanography; **Emily Iskin**, Boise State University; **Anna Marshall**, University of Tennessee; **Elissa Yeates**, University of Georgia

1864639 *Evaluation of Baseflow Resilience Across the Delaware River Basin Headwaters:* **M A Briggs**, D Rey, P Goodling, J Fair, A Tucker, B Fleming, D H Doctor, J Benton, D Bonville, S Carullo, C Gazoorian, D Phillips, C Besteder, J Marshall

1976553 *Hydrological Impacts of Forest Harvest on Streamflow and Valley Peatland Water Storage in the Canadian Rockies:* **E Ireland**, C Westbrook

1999701 *A Spatiotemporal Deep Learning Approach for Daily Prediction of Ground–Surface Water Connectivity Signal and Key Spatiotemporal Feature Attribution:* **M R Mazarei Behbahani**, D Rey, M A Briggs, A C Bagtzoglou

1880781 *Accurate predictions of perennial streams in temperate, forested, headwaters: The challenge is real:* **K L Jaeger**, J Burnett, S Johnson, S M Wondzell, J Dunham, B Staab, M Brown

1927738 *Beaver Dam Analogs in Headwater Streams: Effects on Stream–Aquifer Connectivity and Hydrologic Signal Propagation to the Mainstem in the Valley Floor:* **B A Yifru**, L Scantlebury, S Tiwari, C Kouba, L Foglia, T Harter

1918677 *Benchmarking Conceptual Models for Headwater Streamflow Simulation Using the MARRMoT Toolbox and Hydrologic Signatures:* **F Kondum**, R M Nur, A Thapa, D T Mahoney, C Barton, K L Sena, J Christensen, H E Golden, C R Lane

1864875 *Evaluating the Longevity of Large Wood Restoration Services for Juvenile Coho Salmon Overwinter Habitat: A 2D Modeling Approach:* **M M Maffia**, C Segura, C Lorion, D Warren

1881914 *Evidence of declining ecologically available water and low resilience in headwater systems across the western United States:* **N Kolarik**

1919055 *Forecasting Stage-0 restoration's impact on late summer flows at Meadow Creek, OR.:* **Y Gebrai**, A Price, S M Wondzell

1878553 *From Flashy to Functional: Evaluating Beaver Dam Analogs for Restoring Water and Sediment Retention in a Human-Impacted Headwater Stream:* **S Fathel**, D E Ressler, M J Wilson

1949353 *Headwater Contributions to Downstream Discharge Vary Across Space and Time: Insights from A Process-Based Model:* **R M Nur**, D T Mahoney, J Christensen, H E Golden, C R Lane, G Evenson, C Barton, K L Sena, F Kondum, A Thapa

1864439 *Headwater Streams: What We Do and Don't Know:* **E Wohl**, K Larkin, S Triantafillou

1872617 *Investigating Precipitation Phase Control on Flow Paths in Forest Headwaters:* **P J Dennedy-Frank**, M Sprenger, A Wanstall

1969065 *Linking Forest Management Practices to Summer Streamflows: Implications for Salmon Sustainability and Community Resilience in the Pacific Northwest:* **N C Cristea**, S E Dickerson-Lange, M Taylor

1881261 *Modeling How Rivers Respond to Changes in Macro-Roughness: Implications for Headwater Stream Restoration:* **C Shobe**, D Scott

1912869 *Modeling the Effects of Grazing-Driven Compaction on Soil Piping Discharge and Channel Head Development:* **O Richardson**, E Wohl

1961629 *Monitoring the Effects of Land Development on Stream Dynamics Across the Greater Dayton Area:* **L Claas**

1970104 *Observation to Prediction: Toward a National Infrastructure for Headwater Science & Forecasting:* **A S Ward**, J S Selker, G E Grant, S Tyler, J McDonnell, D W Hyndman, M F Bierkens, D J Gochis, W E Dietrich, J Bales, H E Golden, J Christensen, H K McMillan, M Zimmer, K L Jaeger, A Husic, PhD, E C Seybold, C N Jones

1884302 *Quantifying how subsurface properties modulate groundwater contributions to headwater streamflow using a model-data integration approach:* **V Oladoja**, L Wang, S R Warix

1956681 *Synthesizing Drivers of Beaver Dam Sediment Storage Across Headwater Systems:* **J Scamardo**, K B Lininger, J Rees

1874982 *Temporal Patterns of Biogeochemical Processes and Stable Isotope Dynamics in an Oligotrophic Headwater Lake:* **M Tajwar**, J C Ayers

1929406 *The Fate of Western Headwaters: Climate Controls on Base Flow in Headwater Systems:* **C Mroczek**, A E Springer

248634
Innovating across Boundaries for Operational Uptake of NASA Earth Observations (EO) by the Western US Water Community *(joint with A, C, NH, SY)*

Conveners: **Sean Fleming**, Meteorological Service of Canada; **Sharon Ray**, Jet Propulsion Laboratory; **Mark Davidson**, NASA Jet Propulsion Laboratory; **Perry Oddo**, Pennsylvania State University Main Campus

1978773 *A Science Enterprise for Natural Resource Management. Supporting a Culture of Innovation at NASA for Sustainable Earth System Studies:* **D L Wegner**

1874664 *Continuous monitoring through remote sensing finds enhanced watershed functions coincident with reduced wildfire severity within treated areas:* **J Shannon**, K A Duffy, E Yackulic, S Gilbert, T Hoecker, D Perrot

1923229 *Differential Impacts of Colorado River Water Shortages on Cropping Patterns and Water Use in Central Arizona:* **Z Wang**, S Sharma, A N French, E C Wisniewski, R Houborg, P C Guillevic, E R Vivoni

1919677 *Watershed-scale residence time before and after stream restoration in a 6 km^2 urban forest watershed (Reedy Creek, North Carolina Piedmont) from a five-year isotope record:* **D S Vinson**, D N Petitt, S Clinton, T Chen, W Tang

1938233 *Integrating NASA observations to provide snowpack and streamflow information tailored for Colorado water managers:* **E E Small**, M S Raleigh, C Wobus, K Jennings, J Sturtevant

1857157 *Leveraging Airborne Lidar for Water Supply Forecasting: Evaluating ML derived Long-Term High-Resolution Snowpack Data as Predictor Variables in M4:* **A Woodill**, M Titus, J R Watson

1947192 *Quantifying the Value of Earth Observations for Seasonal Water Supply Forecasting: A Colorado River Sub-Basin Case Study:* **N L Silverman**, D Gorelick, C Lewellyn

2003027 *Snowledge is Power: A Practical Guide to Earth Observations in Deep-Learning Streamflow Forecasting:* **A K Sampson**, A Gontar, S Topp, P Butcher, D Lambl, M Elkurdy, A Suarez, L Read

1950085 *The Application of VIC over the Rio Grande River Basin for Water Resources Management:* **H M E Geli**, V Mishra

252285
Landscape Strategies to Support Water Capture and Recharge in Dryland Regions *(joint with SY)*

Conveners: **Neha Gupta**, Organization Not Listed; **Temuulen Sankey**, Northern Arizona University; **Tianfang Xu**, UIUC-Civil Engineering; **Giuseppe Mascaro**, Arizona State University; **Ryan Lima**, Northern Arizona University

1913367 *An Extensive Statistical Characterization of High Flow Volume in Arizona to Explore the Feasibility of Flood-MAR:* **S Tiwari**, G Mascaro

1968138 *Designing Agrisolar Landscapes to Enhance Groundwater Recharge in Southwest Kansas:* **J Bingaman**, J T Stid, A D Kendall, S C Zipper, H Szydlowski, A Anctil, C Deng

1856981 *Ecosystem Management and Protection for Groundwater Enhancement in Southern Arizona: Critical Considerations and Uncertainties:* **F Bromley**, C Zhang, P D Broxton, H Richter, W J D Van Leeuwen

1897603 *Evaluation of Managed Aquifer Recharge Suitability in the Upper Santa Ana Valley Groundwater Basin using Multi-Criteria Decision Analysis (MCDA) and Regional Water-Balance Modeling:* **J L Pensky**, G Cromwell, D Zamora-Reyes, C Rosenberg, S Neuhaus

1928153 *State-wide Analysis of Areas Suitable for Opportunistic Recharge Enhancement Along Mountain-front Roads and Hillslopes in Arizona:* **R Lima**, A E Springer, T Sankey, N Gupta

254752

Navigating AI in Water Management *(joint with A, GC, NH)*

Conveners: **Alyssa Dausman**, The Water Institute; **Tiantian Yang**, University of Oklahoma Norman Campus; **Ali Nazemi**, Concordia University; **Chiyuan Miao**, Beijing Normal University; **Jessica Henkel**, The Water Institute; **Ximing Cai**, University of Illinois at Urbana Champaign; **Chung-Yi Lin**, Clemson University

1939472 *Comparative AI Techniques for Reservoir Outflow Prediction: Hyperparameter Tuning and Large-Scale Validation across 441 Dams in CONUS:* **M Basirifard**, J Zhang, J Cao, T Yang

2002329 *Cooling Challenges from Booming AI and Implications for Global Riverine Water Resources:* **M Pan**, Y Yang, R Xu, Z Zeng, A D Ziegler, L Brown, J Holden, D Spracklen, P Lin, T Dong, D Chen, Y Zeng, Y Chen, H Ming, D Zhang

252540

Promoting Water Resilience in the Western U.S. Through Measurement, Management, and Markets Approaches *(joint with B, GC, SY)*

Conveners: **Lauren Parker**, University of California Merced; **Sarah Null**, Utah State University; **Josue Medellin-Azuara**, University of California Merced; **Alexander Fernald**, New Mexico State Univ; **Kira Waldman**, University of California Davis

1861225 *Advancing adaptive decision-making to support an Environmental Water Manager's ability to enhance the ecological resilience of Western U.S. river systems:* **Z Brodeur**, S V Sunkara, G Penny, P M Reed

1901657 *Advancing Utah's Secure Water Future: Irrigation Organizations and Water Market Uptake:* **B L Schumacher**, M Yost, J Schad, B Barker, S E Null

1918597 *Agricultural Land Use Optimization with Water Constraints in Tule and Kaweah Sub-Basin, California; Cache Valley, Utah and Mesilla Valley, New Mexico:* **L Wu**, J Medellin-Azuara

1928572 *Agricultural Non-Consumptive Water Use Estimation and Water Management Performance Assessment Through a Remote Sensing-Based Water Balance Under Different Climate Conditions Across Utah Irrigation Canal Companies:* **K Osorio-Diaz**, A F Torres-Rua, A Austin, J Jedlicka, C Miller, M Aveek, J Zimmerman

1918237 *Enhanced Reservoir Management Representation Using LSTMs: A Contiguous United States Evaluation:* **D Broman**, N Voisin, J Giovando, F T Wolkeba

1881027 *GDROM v2: An Inventory of Operation Variable Time Series and Rules for 2,017 Large Reservoirs across the CONUS:* **Z Zheng**, X Cai, L Zhang, J Li, Y Chen

1857054 *Identifying Research Gaps in Hydrology Using Large Language Models and Knowledge Graphs:* **A A Ramirez Molina**, S Zand, J Gong

1885368 *LLM-Assisted Hydropower Operation via Domain Adaptation and Agent Design:* **S Hu**, J Zhao, W Luo, B Xu, D Liu, W Shan, X Yu, Y Li, Y Xiao, R Zhang

1949807 *Modeling Regional Water Yield and Its Environmental Drivers: A Machine Learning Approach for the Southeastern United States:* **B Dixon**, H Karimi, J Halgren, A Tabassum, R Zarrabi

1994617 *Supporting Ethical Decision Making when utilizing Artificial Intelligence and Machine Learning in Product Development for Water Management:* **S B Jones**

1937985 *What AI is good at, what it's not so good at, and what we should probably not ask it to be good at:* **P A Ray**

1931988 *Agricultural Water Conservation Solutions for the Great Salt Lake Basin:* **M Hashemi**, M Yost, S Morrison Sr, B Barker, L Ahmadi, D S Stock, D Mitchell sr, L Vernon

1982054 *Assessing Disparities in Water Reliability and Economic Impact for California's Water Users over the 21st Century:* **A Konialian**, A Escriva-Bou, J Medellin-Azuara, K Dobbin, Y Cai

1917103 *Ecological Benefits of Water Markets:* **G T Sancho-Juarez**, S E Null

1974065 *Estimating Resilience Benefits from Regional Green Infrastructure Scenarios for Local Water Systems in the Sacramento Valley, California, USA:* **C Kouba**, Y Pasner

1899241 *Evaluating System Robustness in the Western U.S. Networked Water Supply System:* **K Kim**, M E Garcia

1997196 *Evaluating the Effect of Winter Cover Crops on Soil Water Dynamics in a Pistachio Orchard in California's Central Valley:* **C Chen**, M Roby, A Sapkota, I Kisekka

1929074 *Evaluation of Economic Benefits from Managed Aquifer Recharge (MAR) Strategies in California's San Joaquin Valley: The Tule and Kaweah Sub-Basins Case Study:* **E Trujillo**, J A Morande, J Medellin-Azuara, T C Harmon

1916724 *Great Salt Lake Vulnerability Analysis with CMIP6 Climate Scenarios:* **S Pineda Castellanos**, S E Null

1868442 *Impact Assessment of California Agri-Environmental Programs: Limited Reductions in Consumptive Water Use and Crop Productivity Tradeoffs:* **C Wong**, W Sklarin, M Mauter, D B Lobell

1971329 *Integrating Forecast-Informed Reservoir Operations and Fallowing Payments for Improved Drought Management in the Colorado River Basin:* **J Quinn**, S Singh, S K Sharma, K Hietpas, M M Mekonnen, P Block, P Debaere, B D Richter

1981656 *Intermittent Groundwater Recharge Strategies on Alfalfa for Sustainability and Water Conservation:* **K M Bali**

1922169 *Parametric Financial Risk Mitigation for Water Districts Facing Hydrologic Variability:* **D Li**, H B Zeff, G W Characklis

2002536 *Prioritizing floodplain reconnection in the Pacific Northwest to support municipal drinking water management post-wildfire:* **E Smoot**, R L Flitcroft, M Santelmann, T Shukla, D D Tullos, S Lancaster

1869064 *Stakeholder-Informed Land Repurposing for Groundwater Sustainability: Evaluating Agricultural, Economic, and Environmental Trade-offs in Overdrafted Subbasins of California's San Joaquin Valley:* **T C Harmon**, Y Nuñez Bolaño, H Flores Landeros, J A Morande, J Medellin-Azuara, E Trujillo

251643
Science in Action: NASA Earth Observations Enabling Advances in Water Management *(joint with SY)*

Conveners: **Erin Urquhart**, Oak Ridge Institute of Science and Education; **Craig Ferguson**, Atmospheric Sciences Research Center; **Jared Entin**, NASA Headquarters; **Perry Oddo**, Pennsylvania State University Main Campus

1957531 *A Collaborative Human-Centered Design Approach Towards New NASAProducts for Satellite Snow Monitoring:* **A Marziliano**, Y C Lin, E Metcalf, C Frans

1998736 *Applications of Machine Learning in Enhancing Evaporation Estimation for Small Reservoirs: A Case Study in Semi-Arid South Texas:* **S M F Abdullah**, C L Cheng, J Benavides, R Almeida, J Ho

1956777 *Applying EVDT framework to assess socioeconomic vulnerability and drought severity using SMAP satellite data to support decision-making needs:* **M S Islam, PhD**, Y Kuwayama, D Entekhabi, C Lu, K M Turner, Z Joao, V Filipe Pereira, O Porto, L Lupedia, I Rodrigues, D Wood

1981922 *ET workflows and analytics for Maize water footprint and productivity estimates in arid to semi arid irrigation districts in Mexico:* **S Jimenez-Jimenez**, M Marcial-Pablo, E Sifuentes-Ibarra, F Munoz-Arriola

1985958 *The Cost of Climate-driven Water Scarcity for Irrigated Agriculture:* **S Bahramu**, M Rouhi Rad, R A Hrozencik, G Perez-Queseda, R Nayga

1899813 *The role of social norms and regulatory measures in shaping water allocation: An agent-based approach:* **A Ghorbanpour**, I Kisekka

1893468 *Water Management Strategies and Yield Response in Pecan Orchards: A Comparative Analysis of Irrigation Systems:* **J Preciado**, S Bawazir, A Fernald, R Heerema

1904801 *Water markets, curtailment, and the Colorado River Compact:* **P J Womble**, S M Gorelick, B Thompson, J S Hernandez Suarez

1997481 *Water Rights Policy Implications on Agricultural Resilience in a Warming Western United States:* **Y Demissie**, M Melesse, E Dalsbo, A M Avalos

1985926 *Evaluating Climate Vulnerability of Groundwater Dependent Ecosystems in Western U.S. National Parks using Earth Observations:* **A C Brooks**, E Jensen, S Rice, D J Lawrence, S Majumdar, J Umek, T Gilkerson, M B Hausner, J L Huntington

1970837 *Forecasting Major Flood Events in the Sudd Wetlands of South Sudan: Leveraging Satellite Datasets and Earth System Models for Science-Based Decision Support:* **K Slinski**, M S Pervez, J P Verdin, A Hazra, A McNally, K M Tabor, L Harrison, S Shukla, C C Funk, C Shitote, M E Budde

1998056 *From Demand to Use: Evaluating Forecast-Based Reference Evapotranspiration and Satellite-Derived Evapotranspiration in California Agriculture:* **R Mitra**, A Daccache, A Montazar, M K Gebremichael, PhD

1902111 *From Pixels to Operational Forecasting: Assessing a Distributed Process-based Snowmelt Model informed by Remotely Sensed Snow Albedo Across the Upper Colorado River Headwater Basins:* **J M Hu**, J Meyer, S M Skiles

1959508 *Global Riverine Flood Inundation Maps for the GEOGLOWS River Forecast System Using ARC and Curve2Flood with Ensembles of DEMs:* **L Rosas**, R Hales, J Nelson, P Wagle, M L Follum, J L Gutenson, A L Gutierrez

1967702 *Global SAR-Based Inundation and Crop Yield Forecasting System for Decision Support:* **C Gangodagamage**, R M Tshimanga, S Lamont, T E Adams III, K Matta, S Venukanthan, I Randila Bandara Kandegedara, L Dilshan, C M Birkett, R Dulnath, M T Durand, P Palihena

1957835 *Groundwater Depletion Amid Recharge Efforts in the San Luis Valley, Colorado: Insights from In-Situ and Satellite Data:* **A Al Fatta**, R Smith, S Vajedian, W Schreuder, J J Butler Jr

1960878 *How does climate influence evaporation suppression efficiency in shallow water reservoirs covered with floating elements?:* **E Mashayekh**, M Aminzadeh, D Or, H R Safavi, N Shokri, L Farhadi

1923432 *Identifying Drivers of Hydrological Change to Support Adaptive Water Management Under Mega-drought in Santiago, Chile:* **K Cullen**, M Mills-Novoa, M Girotto, S Vicuña, R B Lammers

1970601 *Integrating Metadata into US Irrigation Remote Sensing Products for Enhanced Usability:* **J Rapp**, A D Kendall

2000926 *Investigating the Utility of Satellite Earth Observations to Characterize Mesoscale Convective Systems for Actionable Flash Flood Forecasts:* **H J Vergara, PhD**, V Robledo

1994454 *Less is more: Strategic snowpack observations outperform basin-wide mapping for water supply predictions across the western U.S.:* **M S Raleigh**, E E Small, E Bair, C Wobus, K Rittger

1934478 *Lessons from Implementing a Root-Zone Soil Moisture Data Assimilation System for Vineyard Irrigation Management:* **F Lei**, Q Uthman, C Hain, Y Yang

1984809 *Linkage of OpenET with irrigation decision support systems in the Western U.S.:* **A Kilic**, L Johnson, M Cahn, T Peters, A Andales, S Ortega-Salazar, T Martin, R G Allen, M Shyaka, W Yilma

1854184 *Reaching ARL 9: Advancing a Nasa-Driven Operational Water Resources Tool with the New Mexico Office of the State Engineer:* **S Davidoff**, R Stonebreaker, H Hatch, R Joshi, J Valdez, M Nelson, G H Halverson, M Pascolini-Campbell, S Cooley, J B Fisher

1939885 *RECLAIM: A Machine Learning Approach to Estimating Reservoir Storage Loss from Sedimentation:* **S Minocha**, F Hossain

1935175 *Remote sensing of the mountain snowpack under hydrologic extremes: transformative information at the nexus of science and stakeholders:* **N P Molotch**, L Lestak, E Tyrrell, K Rittger

1952929 *ReVap: Monitoring and Forecasting Daily Reservoir Evaporation in the Western U.S.:* **H Gao**, A Yadav, B Zhao, C Pearson, K Holman, G H Allen, T Ott, K A McQuillan, Y Zhu, J L Huntington

1923488 *Revisiting the Application of the Variable Infiltration Capacity (VIC) Model in the Colorado River Basin using NASA Earth Observations:* **Z Wang**, S Ghimire, K M Whitney, T Bohn, M Xiao, H Yue, G Mascaro, E R Vivoni

1946926 *Satellite Remote Sensing for Strategic Reservoir Operations Toward Effective Riverine Ecosystem Outcomes:* **G Darkwah**, F Hossain

1979365 *Seasonal Water Resource Allocation Informed by Co-Produced Climate Data: Insights from the Florida Water and Climate Alliance:* **T Asefa**, H Wang, S Erkyihun, V Misra, J Judge

1885456 *Sediment Plumes and Blooms: Using Earth Observations and Modeling to Forecast Post-Fire impacts to Reservoir Water Quality:* **M E Miller**, R Watkins, M Billmire, L Buller, M Sayers, N Dobson, S Lewis, P Robichaud

1955152 *Snow Today: Scalable Characterization of Snow for Use in Water Supply Forecasting and Management:* **K Rittger**, R Palomaki, N P Molotch, A Windnagel, M S Raleigh, E Bair, M C Serreze, L Stephenson, U Bohn, C Frans, J Lhotak, D Streubel, W P Miller, C Moser, J P Conway, P Kormos, D Casson

1979708 *SWIFT-Barge: Satellite-Based Deep-Learning Framework for Near-Real-Time Barge Detection on the Mississippi River and Its Application to Drought-Related Navigation Impacts:* **Z Deng**

1998831 *Towards a Global High-Resolution Flash Flood Climatology: Leveraging Simulation and Multi-Source Validation:* **V Robledo**, M Abdelkader, A Kruczkiewicz, H J Vergara, PhD

1938858 *Utilizing NASA datasets to understand causes of river flooding in near-natural watersheds:* **E Ahmadisharaf**, P Dahal, E Jalilvand, PhD, S V Kumar, N N Das

250566
Water, agriculture, and conservation: Sustaining agricultural production and healthy watersheds *(joint with B, GC, GH, SY)*

Conveners: **Bin Peng**, University of Illinois Urbana-Champaign; **Kathleen Bailey Boomer**, Smithsonian Institution; **Kaiyu Guan**, University of Illinois Urbana-Champaign; **Ming Pan**, Scripps Institution of Oceanography; **Yaji Wang**, University of Illinois at Urbana-Champaign

1870052 *Abiotic Stress Impacts on Soil-Plant-Microbe Agroecosystems in Soybean Production:* **L Fultz**, E Han, PhD, A Sadeghpour, C Chang, M A Hassan, D Timlin, D Fleisher

1846098 *Agricultural Hydroinformatics: Rethinking agricultural systems management using a sociotechnical approach:* **P Celicourt, PhD**, A N Rousseau, S Gumiere, M Camporese

1942086 *Agriculture Systems as Coupled Human-Water Systems: Bidirectional Feedbacks and Emergent Phenomena:* **M Sivapalan**, P Medeiros, X Chen, F Tian

1885701 *Assessing economic and hydrological effects of water-saving irrigation using a coupled SWAT–MODFLOW–AquaCrop model:* **S Hu**, Y Ding, S CUI, Y Li, J Zhao

1975219 *Assessing the Efficacy of Agricultural Conservation Practices in Improving Watershed Hydrology and Water Quality under Various Alternative Scenarios:* **S Srivastava**, T Roy, A Basche, Y Yuan, E Traylor

1870899 *Balancing Agricultural Expansion and Ecosystem Service Preservation in a Warming Northern Canada:* **Y Zhong**

1849076 *Biochar as a soil amendment applied to agricultural non-point source pollution control:* **C Fan**, Y Z Huang, C J Lin, T S Tan

1994932 *Cover cropping and tillage impact soil health and root-zone water quality in a humid region:* **M Dhakal**, M Locke, K Reddy, M T Moore, J Krutz, W Steinriede Jr

1945914 *Data-driven Assessment of Crop Water Productivity and Energy Productivity for Optimal Resource Use in India:* **A K Sikka**, S Mahapatra, M Radhakrishna, U Amarasinghe, M Perera, R Sharma

1901044 *Deciphering Water-Well Hydrographs: From Meteorologic Extremes to Agricultural Crises:* **J J Butler Jr**, G Bohling, S Nozari, B B Wilson, D O Whittemore

1918335 *Developing a Targeted Conservation Framework for Nitrogen Loss Reduction Based on Watershed Typology in the Upper Mississippi River Basin:* **Y Song**, B Peng, Q Zhao, Z Ma, M Pan, K Guan, Y Wang, J Yang, M Jia

1993816 *Early-Season Mapping of Crop Types and Irrigated Areas Using High-Resolution Satellite Data and Machine Learning:* **M Farhadi**, B Leib, Q Wu, H Herrero, D C Yoder

1909061 *Effects of vegetation recovery in slope failures and removal of the headworks on agricultural water withdrawal — Case study of large-scale slope failures caused by the 2018 Hokkaido Eastern Iburi Earthquake, in Japan —:* **K Tanaka**, A Tada

1984064 *Enhancing the Application of Seasonal Weather Forecasts for Regional Crop Modeling and Irrigation Management:* **Q Su**, S Ale, S Himanshu, J Singh, V P Singh

1877035 *Evaluating Maize Grain Yield and Carbon Dynamics under Nonstationary Climate Conditions:* **M Yeon**, G Lee, D Woo

1963158 *Evaluating the role of integrated agricultural-reservoir systems on water quality: Opportunities for improved management:* **D Villarreal**, R L Muenich, T Liu, T Steissberg

1916457 *Evaluating Water Use Efficiency in Diverse Field Crops in Arid Environments.:* **E Vizuete**, N E Rojas Robles, A Haros-Verdugo, A Rial, R Barzin, L Gaesser, V Hobbins, M Johnson, W Bills, K Merrigan, E R Vivoni

1920287 *Event size and antecedent drought index govern hydrologic impacts of tile drainage in agricultural watersheds:* **S Rathore**, B Sloan, S L Painter

1947707 *From Deficits to Storage: Data-Driven Tools for Agricultural Water Management:* **A Owusu**, N M Velpuri, M E Adamseged, M D Leh, K Akpoti, K Mekonnen, P Schmitter

1941194 *From Field to Basin: Reconciling Irrigation Efficiency With System-Level Water Governance In Arid Environments:* **A Mazzoni**, E Delpiazzo, L Napolitano, A Borgo, G Rianna, M Debolini, A Trabucco, S Mereu

1976449 *Groundwater at Risk: Modelling U.S. Crop Yields Under Aquifer Depletion and Climate Extremes:* **C Bowden**, S Tyagi, T Foster

1965919 *Harnessing agrisolar PV to address water scarcity in irrigated regions:* **A D Kendall**, J T Stid, J Bingaman, A Anctil, S C Zipper, H Szydlowski

1848953 *High Resolution SMAP Soil Moisture to Identify Irrigation and Overwatering in Agriculture:* **A Turman**, B Fang, R Smith, V Lakshmi

2001328 *Impact of Agricultural Ponds on Regional-Scale Hydrology:* **D Yang**, L C Bowling, K A Cherkauer

1968947 *Impacts of agricultural conservation practices on hydrology based on modeling of Northern High Plains watersheds.:* **L Spor Leal**, T Roy, D Uden, K Schoengold, T Mieno, D R Bhattarai, R Khadka

1868388 *Impacts of Irrigation on Water Resources in the United States:* **B R Scanlon**, A Rateb, D Pool, T Votteler

1962919 *Integrating Reanalysis and Satellite Data to Reconstruct Historical Crop Water Requirements and Yield of Open Field-Grown Tomato:* **A Pelosi**, A Aprile, O Rosario Belfiore, G D'Urso, G B Chirico

1888336 *Managing cropland nitrogen-phosphorus limitations for global water quality:* **Y Chen**, B Gu

1905614 *Modeling watershed nitrogen loss responses to cover cropping in the Upper Mississippi River Basin:* **Y Wang**, B Peng, Y Song, Z Ma, Q Zhao, J Yang, K Guan, M Jia

1962831 *Multi-Model Ensemble Forecasting of Irrigation Needs for Precision Irrigation Management:* **G B Chirico**, A Aprile, O Rosario Belfiore, G D'Urso, A Pelosi

1941327 *Nature-Based Hydrological Interventions for Food Security in the Coastal Zone of Bangladesh:* **J Alam**, S B Murshed

1879491 *Near-real-time crop mapping to support return flow estimation and water allocation in California's Central Valley:* **M R L Mautner**, R Díaz Gómez, C A Young, J Choi, M Holland

1961056 *Performance Evaluation of Lined Farm Ponds for Water Conservation and Irrigation in Semi-Arid Regions of Maharashtra:* **M More**, S Khose, MTech, K Khating

1913546 *Regionalizing the ACEA Model with Remote Sensing for Water Footprints in the Upper Syr Darya Basin:* **G Baviskar**, T Foster, R J Hogeboom, M Krol, H Su

248431
Close encounters in the Earth-Moon System: Apophis, 2024 YR4, and the future of Planetary Defense (cosponsored by AAS: American Astronomical Society,GSA: Geological Society of America,JpGU: Japan Geoscience Union) *(joint with SY)*

Conveners: **Ronald-Louis Ballouz**, Johns Hopkins University Applied Physics Laboratory; **Edgard G. Rivera-Valentin**, Johns Hopkins University Applied Physics Laboratory; **Dawn Graninger**, Johns Hopkins University Applied Physics Laboratory; **Andrew Rivkin**, Johns Hopkins University Applied Physics Laboratory

1971755 *A New Method to Determine Mutual Orbit Parameters and Density of Near-Earth Binary Asteroids:* **A Deleon**, C Magri, S Marshall, T M Becker, F Venditti

1898186 *A simulation pipeline for modeling impact processed asteroids during an atmospheric airburst:* **S Stokes**, J Pearl, V Korneyeva, K Kumamoto, J M Owen, C Raskin, J Bayandor

1880218 *Saltwater Intrusion Vulnerability Assessment of Aquifers in Maryland using the GALDIT Framework:* **K Pumphrey**, A Voropaeff, J Orser, K Mobley, M L Humber, A Bredder

1857849 *Soil Contribution to Buffering Agroecosystems Against Climate Change:* **Q He**, L Li, Y Shi, P Feng, K Liu, S Zhang

1928163 *Sub-Watershed Scale Agro-hydrological Responses and Global Sensitivity Analysis of Regenerative Agricultural Practices Using APEX in the North Fork Red River Basin, USA:* **N Saasan**, A Mirchi, A Kaghazchi, S Alian, K Wagner, S Ale

1989852 *The Agricultural Imprint on Watersheds and Water Quality in the United States:* **E W Boyer**

1953875 *The effects of regenerative agricultural practices on the hydrological behaviour of the cold, water-limited Prairie landscape:* **L Guo**, C Spence, C J Whitfield, W Helgason

1871769 *The Impact of Cropland Transfer on Rural Household Income in China: The Moderating Effects of Education:* **X Ji**, Y Wang, L Yang, C Li, L Chen

1858139 *Timely adaptation mitigates heat stress but increases to excessive Rainfall: a case study for global barley:* **L Li**, K Liu, Q He

1977068 *Tracking agricultural regime transitions across the United States using historical data:* **S Vishwakarma**, M Ashfaq, J Kumar, F Hoffman

1950106 *VPD-induced yield loss in U.S. cotton and potential for its mitigation:* **R Qin**, K Guan, B Peng, R F Grant, J Tang, E A Ainsworth, X Xu, W Zhou, Y Yang

1968078 *A Space Traffic Management (STM) Approach for the (99942) Apophis 2029 Earth flyby.:* **E Bonilla**

1928301 *An OSIRIS-APEX extended mission to 2024 YR4:* **M C Nolan**, D N DellaGiustina, A Polit, A Mudek, K M Getzandanner, S D Guzewich, M C Moreau, A Simon

1912794 *Analyzing Potential Science Return of Both Lunar Collision and Flyby for 2024 YR4 Close Approach in 2032:* **T Joseph**, P do Vale Pereira, O Bury, M Boudreau

1894499 *Capturing a Near-Earth Asteroid for Research, Space Enterprise, and Planetary Defense:* **L Vance**, E Asphaug, J Thangavelautham

2000515 *Investigating Hypothetical Mitigation of Asteroid 2024 YR4 via Intentional Robust Disruption:* **B Bailey**, A N Cohen, S Egan, P Lubin, R Xu, M Boslough, D Robertson, E A Silber

1929776 *Janus Apophis Pathfinder: Demonstrating Rapid Response and an Innovative Mission Model for Early Planetary Defense and Scientific Characterization of (99942) Apophis:* **J F Bell III, PhD**, D J Scheeres, B Bierhaus, L Champion, M Six, D Thomas, L Levin

1957746 *JWST as a Planetary Defense Asset: The Case of 2024 YR4:* **A Rivkin**, E MacLennan, B Holler, T Müller, J de Wit, A Burdanov, M Devogele, P Pravec, M Micheli, C Thomas, D Farnocchia, A K Glantzberg, L Conversi, J Dotson, L Wheeler, S N Milam, H B Hammel

1866205 *OSIRIS Apophis Explorer STIRring Apophis - Applications to Planetary Defense.:* **M C Nolan**, D N DellaGiustina, A Polit, D R Golish, E G Rivera-Valentin, M C Moreau, B Bierhaus

1989754 *Reconnaissance and Mitigation Mission Options for Asteroid 2024 YR4:* **B Barbee**, J Atchison, R Bull, W K Caldwell, P W Chodas, D Farnocchia, D Graninger, M Harwell, P King, J R Lyzhoft, R Mink, C S Plesko, A Rudolph

252651
Addressing Unequal Outcomes in Urban Water Management through Citizen Science *(joint with A, GC, H, NH)*

Conveners: **Michael Sansone**, Illinois Institute of Technology; **David Lampert**, Oklahoma State University Main Campus; **Matthew Shapiro**, Illinois Institute of Technology; **Aaron Deslatte**, Northern Illinois University

252018
Advances in Achieving Food Security through Data Integration, Stochastic Techniques, Citizen Science, Google Earth Engine, and Interoperability *(joint with GC, H)*

Conveners: **Amanjo Bhullar**, University of Guelph; **Sara Sadri**, Princeton University; **Nathaniel Newlands**, Agriculture and Agri-Food Canada; **Cheila Avalon Cullen**, Cooperative Remote Sensing Science and Technology Center New York; **Jumi Gogoi**, University of Waterloo

1886644 *TERP RAPTOR: A 12U CubeSat Flyby Mission to Asteroid Apophis:* **A Rudolph**, S Philips, C Prasad, K Bhingradiya, C Storey, B Barbee, M Bowden, D Akin, L M Feaga, J Young, P A Bernhardt, Y Chen

1867884 *The Estimated Brightness of a Potential Lunar Impact by 2024 YR4:* **P King**

1992404 *The radio science experiment of the ESA RAMSES proposed mission to the asteroid 99942 Apophis:* **M Zannoni**, R Lasagni Manghi, E Gramigna, F Scalera, S Le Maistre, P Tortora

1859314 *Tidally-driven seismicity as a mechanism for Near-Earth Asteroid Surface Refreshing:* **R L Ballouz**, D N DellaGiustina, K J Walsh, V J Bray, A G Marusiak, I Saedi-Marghmaleki, S Bailey

1978275 *Turning Rocks into Rockets: Using In-Situ Reaction Mass to Redirect Asteroids:* **D Lantukh**, A Applegate, V Lebedev

1956608 *Assessment of Industrial Stormwater Permits and Compliance in the South River Watershed:* **H Akter**, M Curry, J Sterling, R Milligan

1925354 *Flood Susceptibility and Social Vulnerability in Chicago and Neighboring Counties:* **M Sansone**, R Henderson, H Huang, D J Lampert, M Shapiro, B Stephens, M Villalobos

1979339 *Improving Urban Stormwater Policy through Citizen Science and Community Engagement:* **D J Lampert**, D Exline, F Nkurunziza, R Henderson, H Huang, M Shapiro, B Stephens, M Villalobos

1877651 *Climate-Induced crop losses: Lessons from Yam Traders and farmers' Adaptive Capacities and Barriers:* **R Olaitan**, A Ayanlade, I A Oluwatimilehin

1868052 *Disaggregating probabilistic seasonal precipitation and temperature forecasts using a stochastic weather generator for cover crop management in the southeastern U.S.:* **E Han, PhD**, A Ines, Z Wang, M A Ehsan

1995391 *Spatiotemporal Mapping of Crop Intensity in Panna, India Using Remote Sensing Time Series of Vegetation Indices on Google Earth Engine:* **D Verma**, S K Katiyar Dr

1860428 *Unleashing the Power of Street View with CROPSIGHT-US: An Object-Based Crop Type Ground Truth Dataset Using Street View and Sentinel-2 Satellite Imagery across the Contiguous United States:* **Z Zhou**, Y Liu, C Diao

250595

Advances in the practice and theory of climate change adaptation *(joint with A, GC, NH)*

Conveners: **Christine Kirchhoff**, University of Connecticut; **Caitlin Grady**, Pennsylvania State University Main Campus; **Kripa Akila Jagannathan**, Lawrence Berkeley National Laboratory, Climate and Ecosystem Sciences Division

1975929 *Adapting Wheat Agroecosystems to Climate Change: Evaluating the Efficacy of Farm-Level Strategies Using Crop Modeling in the Eastern Indo-Gangetic Plains:* **L Rodriguez**, M Jain

1972099 *Advancing climate adaptation tracking: A Comparative Study of AI-Assisted and Manual Coding Workflows:* **E T Joe**, S Koneru, C Kirchhoff, S Rajtmajer, C Hyun, B Gupta, L Poole-Selters, X Wang, J Joe, S Torhan, MSc, D Danilenko, D Manshardt, E Gilmore, J Glenn, I Ajibade, B Orlove, M Garschagen, A Hsu, R Biesbroek, J Petzold, J Minx

1948357 *Bridging the Gap: Exploring Barriers and Enablers to Living Shorelines as Perceived by Waterfront Property Owners in Virginia:* **T Le**

1947994 *Brushing Against Pollution: Visualizing Air Quality Impacts on Urban Youth through Art in Delhi:* **F Baby**

1911388 *CLIMATE GENTRIFICATION RISK MAPPING USING IMAGE-BASED URBAN CHANGE DETECTION AND FORECASTING:* **D Kim**, J Choi, G Jang

1895464 *Exploring the Interconnections between Climate Adaptation and Biodiversity Conservation: Understanding Ecosystem-Based Approaches:* **X Trujillo**, K Unger Baillie

248295

Advances in Translating Measured Methane Emissions into Greenhouse Gas Inventories for the Oil and Gas Supply Chains *(joint with GC)*

Conveners: **Haoming Ma**, University of Wyoming; **Wennan Long**, ; **Mohammad Masnadi**, University of Pittsburgh; **Arvind Ravikumar**, University of Texas at Austin; **Yuanrui Zhu**, University of Texas at Austin

1911052 *A Comparative Analysis of Emission Factor Approaches for Excavation-Related Methane Leaks in Underground Gas Distribution Systems:* **T Webber**, N Jayarathne, K M Smits

1912747 *Farm Inputs for Adoption of Drought Adaptation Strategies in Addressing Sensitivity of Coffee Yields to Rainfall Variability in Uganda:* **C Mulinde**

1920035 *From Informal Adaptation to Formal Integration: A Vulnerability-Based Approach to Urban Climate Resilience in Mumbai's Slums:* **P Kumar**, M R A Bhuiyan, A M A Saja

1880478 *Identifying historical adaptation pathways in rural riverfront communities: a case study of Brunswick, Missouri USA:* **A J Catalano**, D M Hall, PhD, G M Gentil

1873064 *Learning from Adaptation Successes: Boundary Organizations and Climate Adaptation:* **C Kirchhoff**, E T Joe

1861864 *On Exposure and Vulnerability:* **R G Jonassen**

1969539 *Socio-Behavioral Dynamics of Household Stormwater Management: An Agent-Based Exploration of Green Stormwater Infrastructure Adoption:* **K Azizi**, M E Garcia, D Niyogi, P Bixler

1989342 *Strategic small infrastructure for closing big rural accessibility gaps:* **Z Mehrabi**, M Pierson, N Ormaza Zulueta, C Kruse

1930702 *The Minnesota Climate Mapping and Analysis Tool (MN CliMAT):* **S Liess**, T E Twine, H A Roop, R Noe, S Clark, D Coffman, D Dolma, A Farris, A Fernandez, J Gorman, N Meyer

1878561 *Transformative Adaptation Pathways (TAP): A Framework and its Application to Climate Risks in Southwest China:* **J Yang**, B Mallick, A Bailey

1989634 *Understanding Decision Support for a Changing Climate:* **J A Vano**, K Archie, J C Arnott, D Hirschfeld, E I Mateo, A Dehaan

1998316 *Ways of Knowing for Climate Adaptation Planning:* **R Emanuel**, J Painter

1926694 *Aerial LiDAR-Based, Source-Resolved Methane Emissions Inventory: Permian Basin Case Study for Benchmarking U.S. Emissions:* **C Donahue**, M Thorpe, K Oberoi, J Dillon, P Roos, J Brasseur, C Dudiak, V Hengst, D Altamura, R Sykes, G Doherty, W Kearney, E Rehbein, J Lennox, B Kennedy

1899775 *Colorado Ongoing Basin Emissions: Combining Aerial Survey Data with Continuous Monitoring Data to Estimate a State-wide Methane Emissions Inventory:* **C Okenberg**, O Khaliukova, W Daniels, J Brown, A Santos, M Moy, A L Hodshire, D Hammerling

1876475 *Declining Methane Emissions from Oil & Gas: Uncovered by Atmospheric Observation in Western Siberia:* **T Taguchi**, M Sasakawa, T Machida, Q Qin, A Nogovitcyn, M Kondo

1940703 *Field-Scale Methane Inventory for Targeted Mitigation in Global Oil and Gas Production:* **T Lei**

1879834 *How Methodological Decisions Shape Methane Intensity Estimates: A Haynesville Basin Case Study:* **K D Hajny**, B Fosdick, Z Weller, E Martinez, X Wong, A Berry, A Corbett, C Moore

1998603 *Large-scale surveys of emissions in the Haynesville and Anadarko basins: Combining multiple top-down measurements with simulations to estimate total emissions:* **A R Brandt**, E D Sherwin, P Burdeau, E Wetherley, J Romo, S Biraud, P Yakovlev, E Berman

1998289 *Mechanistic Simulation of Methane Emissions in the Upper Green River Basin: A SABER-Based Evaluation of Bottom-Up Inventories.:* **N Kolla**

1985563 *Offshore Methane Emissions in the Gulf of America: What Shipboard and Airborne SCOAPE-II Measurements Reveal About GHGSat Satellite Detection Limitations:* **N Balashov**, R M Stauffer, A Thompson, N M Fedkin, D Kollonige, J Richards, M Cadirola, H D Wecht, A K Thorpe, A Chlus, R O Green, J Gallegos, L Ott

1905723 *Regional Heterogeneity and Uncertainty in the Social Cost of Methane from Upstream Coal Extraction:* **H Ji**, W Long, X Tang

248747
Advancing Earth Science Projects Through University & Local Government Partnerships

Conveners: **Ada Inman**, EPIC-N; **Gavin Luter**, EPIC-Network

250468
AI and High-Resolution Forecasting for Societal Resilience (cosponsored by AOGS: Asia Oceania Geosciences Society,EGU: European Geosciences Union,JpGU: Japan Geoscience Union,WCRP: World Climate Research Programme) *(joint with GC, H, NH)*

Conveners: **Sridhara Nayak**, Japan Meteorological Corporation; **Mohan Kumar Das**, National Oceanographic and Maritime Institute; **Netrananda Sahu**, University of Delhi; **Pawan Kumar Chaubey**, Indian Institute of Science Education and Research Mohali

1946674 *"Multi-Timescales Indian Ocean Dipole Predictability in a Warming Climate with Support Vector Machines and Ocean–Atmosphere Coupling Indices":* **R Karim**, M J Uddin, M K Das, T A Shormy, N Fariha, S R Haque, M F Hasan

1926555 *Statistical inference of intermittent methane emissions from heterogeneous measurements:* **P Burdeau**, A McManemin, E D Sherwin, E B Wetherley, E S Berman, A R Brandt

1936848 *Super-emitter intensities across global oil&gas basins:* **A Ayasse**, D Bon, D Cusworth, T Scarpelli, K Howell, R Duren

1972254 *The Role of Continuous Monitoring Systems in Methane Emissions Inventories: Insights from 2 Years of Data on 35 Production Sites in the Appalachian Basin:* **W Daniels**, T Sorensen, S Kidd, S Yang, S N Stokes, A P Ravikumar, D Hammerling

1881156 *Uncertainty Quantification of Measurement-Informed Methane Emission Inventory from Oil and Gas Facilities:* **H Xia**, A P Ravikumar

1882031 *Use of Uncertainty in Oil and Gas Emissions Reporting:* **D Zimmerle**, A L Hodshire, K B Shonkwiler, A Santos

1931701 *Using Crewed Aerial Methane Measurement Snapshots to inform Methane Inventories: Pathways to understanding Production Methane Emissions:* **A Corbett**, C Moore, B Fosdick, Z Weller, E Martinez, K Hajny, S Rai, X Wong, A Berry, N Gielczowski, Y Roell

1916858 *Value of Operational Data in Developing Accurate Measurement Informed Methane Emission Inventory:* **S Yang**, S N Stokes, M Adekomi, A P Ravikumar

1972753 *From Park to Garden: Collaborative Soil Testing to Support Food Security in Urban San Diego:* **C Jobe**, C Avila

1954623 *Advancing Understanding of Sea Surface Height Dynamics in the Bay of Bengal: High-Resolution CROCO Simulations for 2024:* **A T Mahmud khan**, M A Hakim, M E Hoque, M J Uddin, M K Das

1954976 *An Adaptable Machine Learning-Driven Framework for Coastal Resilience Against Climate Hazards in the Northern Bay of Bengal Region:* **K Karmaker**, M K Das, S R Singha, M S A Hoque, M A Hossain, N T Hridita

1944001 *An Integrated Machine Learning Framework for Long-Term Drought Forecasting in Bangladesh Using SPEI, Teleconnection Patterns, and Climate Shift Detection..:* **S Tasnim**, M J Uddin, M K Das, M A I Anik, S Hossain

1985302 *Analyzing Lightning Extremes over India Using World Wide Lightning Location Network (WWLLN) Data from 2005 to 2024:* **U Mondal**, S K Panda

1937691 *ASSESSMENT OF HISTORICAL TRENDS AND FUTURE PROJECTIONS OF HEATING DEGREE DAYS IN SOUTH ASIA UNDER CLIMATE CHANGE SCENARIOS:* **M A H Laskor**, S U A Dipu, F Bhuiyan, A Azim, A S Islam

1976762 *Climatological Vertical Structure of Temperature and Salinity Stratification in the Bay of Bengal Using the CROCO Ocean Model:* **M A Hakim**, M K Das, A T Mahmud khan

1973112 *Comparative Analysis of Power Dissipation Index (PDI) for Cyclone Remal Using WRF-ARW with FNL and CFSv2 Forcings:* **A Hakim**, M K Das, A T Mahmud khan

1887492 *Deep Reinforcement Learning for Enhancing Coastal Emergency Responses:* **M Sano**, D M Ferrario, S Torresan, A Critto

249580
Bridging Science and Practice: Innovations in Agricultural Water Management for Sustainable Futures *(joint with B, H)*

Conveners: **Maria Elena Orduna Alegria**, University of Kansas; **Salini Sasidharan**, Oregon State University; **Floyid Nicolas**, Oregon State University; **Maria Zamora Re**, Oregon State University

1876921 *A Multi-Year Optimization Framework for Land and Water Allocation with Crop Rotation Constraints:* **I Kisekka**, R Linker

1924991 *Empirical Assessment of Canal Lining Strategies to Enhance Water Security and Mitigate Seepage Losses in Semi-Arid Region of India:* **D Sharma**, S K Mishra, R P Pandey

1998659 *Engaging Small-Scale Farmers in Water Conservation: Lessons from Central California Cooperative Extension Program:* **C Beveridge**, J Paz Villegas, M Yang, L Thaoxaochay, M Singh, I Briseno, A DeVincentis, Q Sara, C Vega, E Kraus, R Dahlquist-Willard

252584
Centered in Place: Connecting with Rural Communities in Alaskan Research & Outreach *(joint with C, ED)*

Conveners: **Clarissa Zeller**, UIC Science; **Serina Wesen**, University of Alaska Fairbanks; **Emily Gephart**, ; **Cody Johnson**, UIC Science

1951145 *Development of a WRF-Assisted Deep Learning Model for Lightning Forecasting and GIS-Based Risk Analysis in Bangladesh:* **M K Das**, M A Hossain, M S H Bhuyian, S Karmakar, K Karmaker, J Merajul, P Biswas Paul, S Islam

1937427 *Evaluating Rainfall-Driven Flood Dynamics ThroughRemote Sensing in Bangladesh's Southeast Region During the 2024 Monsoon:* **P Biswas Paul**, S R Singha, S F F F Sowrav, K M Ibtehal, M K Das, M F Methila, A S Islam, F Akter, F Abdullah, M J U Khan, M M Hoque, D M S Hossain

1931207 *How the National Weather Service is Training AI to Reach Multilingual Populations During Extreme Weather Disasters:* **J Trujillo-Falcón**, M Bozeman, L Llewellyn, S Halvorson, M Mizell, S Deshpande, B Manning, A Shastry, T Fagin

1933731 *Performance of high resolution WRF modeling system for prediction of intense tropical cyclones over Arabian Sea:* **K S Singh**, R Ashok

1903248 *Integrating Remotely Sensed Evapotranspiration into Water Planning across California's Central Valley.:* **A Sharma**, J M Gilbert

1914434 *Mapping climate-driven water needs: a drought-based framework for siting small agricultural reservoirs (SmARs) in Italy:* **M S Sheikh Goodarzi**, M Lompi, L Piemontese, H Nanesha, L Cappellato, G Bertoli, T Pacetti, N Mannucci, N Galli, G Castelli, M C Rulli, E Bresci, E Ridolfi, D D Chiarelli, E Caporali

1850328 *Mapping Rainfed and Dryland Farming Suitability in the Southern Great Plains:* **S Abedzadeh**, A Mirchi, C Robinson, S Alian, K Wagner, J Bell, S Ale, L Gregory

1881364 *Multi-sensor Assessment of Irrigation Strategies for Enhancing Water Productivity in California Pistachio Orchards:* **S R Peddinti**, P Gordon, T Ebong Oker, I Kisekka

1954717 *Resilient Water Futures: ACQUAOUNT Decision Support Tool for Jordan's Agriculture:* **E Delpiazzo**, A Mazzoni, L Napolitano, A Borgo, G Rianna, A Trabucco, M Debolini, S Mereu

1942869 *Sustainable land & water management model in sandy land - a case study of immigration area in Northwest China:* **J Liao**, T Wang

1977643 *Assessing fiscal pathways for climate adaptation funding in Alaska:* **A Herrmann**, S Trainor, C Erickson

1899272 *Co-producing Volcano Curriculum in Alaska: Researchers, educators and the Native Village of Perryville work together to develop volcano teaching resources that center Indigenous knowledge and feature eruption forecast methods and foundational volcano understandings.:* **L Schoening**, T M Lopez, M Angarita, V Burgos, C Cameron, D Fee, R Grapenthin, P E Izbekov, B Kosbruk, J F Larsen, J A Moshrefzadeh, E Kosbruk, T Shreve, G Kosbruk, D Tan, P Kosbruk, K L Wallace, A Phillips Jr, D Phillips, P Shaha, A Shangin Jr, A Shangin, B Whitten

1936238 *Partnering with Alaskan Communities to Co-develop and Make Local Connections to a Traveling Exhibit about Severe Weather and Environmental Conditions:* **B Hatheway**, R Haacker, D W Zietlow, P Montano, A McCauley-Hartner, J Smelter, E Portier, E Snode-Brenneman, A Stevermer

252628
Climate Change Training for the Current and Future Workforce *(joint with ED)*

Conveners: **Haley Crim**, Self Employed; **Frank Niepold**, NOAA Climate Program Office

2004201 *Bridging the Green Skills Gap: Evaluating Workforce Frameworks for Technological Readiness in U.S. Land Management and Environmental Stewardship:* **J Washebek**

1959951 *Educating Undergraduates on Carbon Dioxide Removal: Perspectives from Academia and Industry:* **L Haynes**, J Lambert

1929964 *Project Pyramid: International Educational Partnerships for Sustainable Enterprise in Developing Countries:* **F Alvarez-Carrascal**, M Avila, A Reichert, E R Zartman

251999
Community Perspectives on Carbon Dioxide Removal: Social Dimensions in Climate Technology Deployment

Conveners: **Celina Scott-Buechler**, Stanford University; **Sara Nawaz**, American University

1865700 *Building Community Capacity for Responsible Marine Carbon Dioxide Removal (mCDR): Defining Challenges and Mapping Solutions with Ocean Community and Stakeholders:* **M E Karageozian**, A Borth, E Cariño

1986463 *People First, Science Second: Educating Scientists how to 'Research with CaRE' in Southeast Alaska:* **L Bell**, J Feldpausch, L Pierce, R Paddock III

1998816 *The Arctic Is Home: Lessons in Respect, Partnership, and Place from across Alaska's North Slope:* **L Pikok**, S M A Wesen, N Stellrecht

1904921 *Using PhotoDrone to center youth voices and inform community futures in rural Alaska:* **M Bertheussen**, M S Balazs, J Orloff, G Anderson, M Riva, I Lamothe-Katrapani

1888467 *Working with Local Youth as a Strategy to Enhance Place-Based Community Research:* **A C Johnson**, D A Head, G Hamar, A Clavijo, C Thompson, J Clarke, L Silva, G Sjoberg

1964695 *Students Gain Practical Experience in STEM Fields, Taking Successful Climate Action, As Part of Multi-Generational Teams of Innovators:* **J D Callahan**, V Bampoh, D Henderson-Hudgins, L Rinzel, A Romm, A Stark, N Ginieczski, W Essreg, C Atkinson, F Hennessy

1850855 *The Washington State Climate Corps Network: Empowering a Climate-Ready Workforce Through Community Service:* **M Glazewski**

1886876 *Training Climate Change Risk and Opportunity Officers by Universities for Business Climate Action:* **J W Dash**

2004077 *Transforming Climate and Health Equity Through Physician Training: A Five-Year Review of the CHEF Fellowship:* **S Johnson**, K Williams PhD

1997675 *CarbonRun's Community Engagement Approach: Pictou County Rivers Association and Local Watershed Partners:* **P Duke**, S Swim, E Halfyard, S Sterling, L Connell, A White, S Brennan

1963631 *Piloting a Model for Community-Oriented Deliberations on Marine Carbon Dioxide Removal (mCDR):* **D Branigan**, G Belotti, A Karspeck, A Wyatt, S Nawaz

1968269 *Rapid Deployment of Climate Smart Soil Amendments: a Case Study of North Carolina Farmers:* **K Moore**, D B Lobell

1956445 *Uncovering and integrating public perspectives into CDR governance across scales: Results from a participatory technology assessment held in the US and Canada:* **A Borth**, M E Karageozian, M Farooque

249874
Connecting Beyond the Geosciences: Insights from Philosophy, History, and Social Sciences *(joint with ED, GH)*

Conveners: **Junjie Dong**, University of Michigan Ann Arbor; **Matthew Brewer**, Boston University; **Camille Hankel**, Harvard University; **Tamara Pico**, Harvard University

1947621 *Astrobioethics to Inform the Ethical Conduct of Astrobiology Research on Earth and Beyond:* **É A Laflèche**, M L Wong, C Haramia, J DeMarines, D Tulodziecki

251729
Creating a Competitive Geospatial Workforce for the Public and Private Sectors *(joint with ED)*

Conveners: **Amanda Clayton**, NASA Langley Research Center; **Kenton Ross**, NASA Langley Research Center; **Steve Padgett-Vasquez**, University of Georgia Libraries; **Budhendra Bhaduri**, Oak Ridge National Laboratory; **Sarah Hafer-Martin**, NASA Langley Research Center

251661
Doing Science Together: Sharing Experiences of Co-creating Earth Scientific Solutions with Communities on the Gulf Coast of United States and Beyond

Conveners: **Britt Forsberg**, American Geophysical Union; **Elizabeth Landau**, American Geophysical Union; **Kathryn Semmens**, Nurture Nature Center; **Gavin Luter**, EPIC-Network

2004458 *A Community-Driven Effort to Assess the Impact of Underwater Noise Pollution from a Liquified Natural Gas Facility at the Mouth of Louisiana's Calcasieu River:* **B Collis**

2003092 *AI infrastructure & global environmental change: towards transparency, accountability, and sustainability:* **K M Turner**

1880966 *Celebrating Epistemic Pluralism in Astrobiology:* **M L Wong**, K J Smith, P Anderson

1996559 *Machine Learning vs. Traditional Models in Geoscience: A Philosophical Perspective on Scientific Understanding:* **Y Tian**, Z Gao

1967898 *On reconceptualizing and abolishing floods:* **M Majszak**, A Zaki, O Wani

1881960 *Philosophy of Fieldwork in the Geosciences:* **J Zak**, A Zepp

1919389 *Building a Modern Geoscience Workforce: Technical Training in EarthScope's Cloud-Enabled Ecosystem:* **T K Bravo**, G Haberli, M Weber, S Wilson, R T Weekly, S Johnson, S Parafina, J R Sweet, M Hubenthal, C Trabant

1885676 *Internship Program at the USGS Geologic Hazards Science Center:* **B Shiro**

1852960 *Leadership in Environmental Analysis for the People: A Place-Based Summer Geospatial Training Program for Undergraduates:* **C D Hatch**, A Burford, M Achan, I Ritter, M Williams, F Mera, M Smith, E Burks, K Nierstheimer, B Hill

1997094 *An Interdisciplinary Framework for Flood Forecasting, Ground Motion Detection, and Community Resilience in Palmer Township, Pennsylvania:* **B Neupane**, M Gunther, A P Sharma, M Singh, C Li

1971447 *Powering Climate Solutions with People: Community-Driven Science for Resilience in Coastal Florida:* **C Hadley**, S Lazarus, E Ralston, Q Simpson, H Najafi

1884448 *The Gulf Water Justice Training Institute: Empowering Gulf Coast Grassroots Communities for Inclusive Flood Resilience Planning and Action:* **D Padgett**, B Wright, R Archer, PhD, GISP, S English, O Lopez

1983477 *The potential of community science observations to document shoreline change: a case study from coastal Massachusetts:* **R Thomas**, S B Das, C R Sherwood, S Murphy, B McCormack, S McComb, C G Piecuch, J S R Over, G Berman

249807

Enhancing Decision-Making through Public-Private Partnerships: Leveraging Land Use, Natural Resources, and Environmental Data *(joint with GC, IN)*

Conveners: **Holly Mayton**, John Deere; **Julian Reyes**, Bureau of Land Management; **Caitlin Grady**, Pennsylvania State University Main Campus; **Robert Swap**, NASA Goddard Space Flight Cente; **Sarah Hartman**, CSIRO

2003998 *Co-Producing Carbon Intelligence: NASA CMS Applications for Decision-Making:* **K Stover**

1947561 *Data driven Public-Private Data Partnerships for Urban Fire Risk Management and Community Resilience in Heritage Cities:* **S Dangol**, S Duwal, S Khatri, S Ghimire, Y Bhattarai

249422

Evolving Guidance for NASA Missions and Critical Infrastructure: Risk Analysis and Solutions Innovations (RASI) *(joint with GC)*

Conveners: **Cynthia Rosenzweig**, NASA Goddard Institute for Space Studies; **Nick Pelaccio**, Columbia University

251250

From Experimentation to Scaling Up Disruptive Innovation in Subnational Organizations *(joint with GC)*

Conveners: **Christine Kirchhoff**, University of Connecticut; **Sara Hughes**, Cooperative Institute for Great Lakes Research, University of Michigan

248482

Thinking Outside the Box Plot: Communicating Science Beyond the Paper (joint with ED)

Conveners: **Abigail Dischner**, Indiana University Bloomington; **Amanda Carneiro Marques**, Drexel University; **José Uchôa**, São Carlos School of Engineering, University of São Paulo; **Cee Nell**, U.S. Geological Survey; **Emily Ellis**, Texas A&M University

1973354 *From fields to flyways: Public willingness to pay for migratory bird habitat restoration in California:* **R Puri**, L R Levers

2004415 *Modeling Species Distribution and Human-Bear Conflict for Ursus americanus in the North San Francisco Bay Area:* **L Puffer**, C Chatila, O Johnson, S Royal, E Norman

1962342 *Public Policy Strategies for Scaling 3D-Printed Affordable Housing:* **S Monalisa**, A Kazemian, C J Friedland, R B Mostafiz

1978777 *The Iowa Nitrogen Initiative: A Public-Private Partnership Aimed at Improving On-Farm Nitrogen Management:* **M Baum**, M J Castellano

1903189 *The Relationship Between Data Centers and Their Environment: Evaluating Operational Risks to U.S. Data Centers:* **A Kollar**, C Grady

1872895 *Yield Stability Zone Analysis for Precision Agriculture Through Public-Private Partnership:* **J R Dierauer**, A Greenlee

1850074 *An Introduction to the Risk Analysis and Solutions Innovations (RASI) Ecosystems Workflow to Assess Endangered Species, Invasive Species, Biodiversity, and Carbon Pools:* **C S Potter**, M Loiacono,

1886930 *Leveraging Earth Science to Action's (ES2A's) Risk Analysis and Solutions Innovators (RASI) Initiative to Advance Operational Resilience at NASA's Jet Propulsion Laboratory:* **D E Waliser**, D Chen, C Chen

1969805 *Mission Assurance and Energy Security: NREL's Support for NASA Centers:* **B Mentlik**, B Kar, N Grue, R Shepard

1941964 *Planning, implementing, and scaling heat resilient infrastructure using open-source data and models:* **R Engel**, E Mackres, S Shabou

1989544 *Regulatory Analysis and insight tools to Support Regional Innovation Ecosystems:* **M E Garcia**, J M Anderies, L Keeler, L Boyle, M Sreeram

1959114 *Subnational Policy Diffusion in the United States: Patterns and Lessons from the Growth of Renewable Energy and Climate Policies:* **J Greene**

1998158 *An Interactive Environmental Atlas for the U.S. Southeast:* **M Ashfaq**, Z Aslam, S Vishwakarma, A Maloney, R Frye, R Efroymson, P E Thornton

2003287 *Communicating Carbon Capture and Storage (CCS) Technologies to the General Public:* **G Fuentes-Rosado**

1918227 *Demonstrating the Use of After Effects as a Tool for Educational Geoscience Animations:* **A Mehta**, R S Hufstetler, E E Zawacki

1985691 *Film for Scientific Communication: Using Visual Storytelling to Share Research Innovation in Coastal Restoration:* **K Perrault**, K Fronabarger

1971666 *From Consent to Connection: Using StoryMaps and IRB-Based Engagement to Amplify Community Climate Voices in Baltimore, MD:* **X Zhou**, J Atayi, A Oni, J G Hunter, M M Kabir, C Chavis

1874600 *From rainbows to divergence: A case study of the evidence-based redesign of the U.S. Geological Survey Water Watch website:* **E K Read**, M Gerst, M A Kenney, PhD, A Viedma

1881872 *Making Waves with Sequential Art: Science Comics from IODP Expedition 405:* **C N Schuba**

1877333 *Over 100 Stories of Ocean Science: An Oral Archive of International Collaboration in Seafloor Research:* **B Martinez-Rius**

1854086 *Sonification of Seismic Catalogs for Data Exploration and Art:* **W M Szeliga**

1881050 *Telling the Story of Coso: A Public-Facing Geonarrative of the Region's Culture, History, Geology, Geothermal Energy and Environment:* **S Yeager**, J O Kaven

1850361 *The Power of Anime In STEM: Using Anime As a Vehicle for Science Education and Outreach:* **R G Gomez**, B Tringali

252400
Frontline Community-Driven Approaches to Climate and Environmental Change: Theory, Narrative, and Practice *(joint with GC)*

Conveners: **Katlyn Turner**, University of Michigan Ann Arbor; **Shamyra Lavigne-Davey**, Rise St. James; **Chantel Comardelle**, Isle de Jean Charles Biloxi-Chitimacha-Choctaw Tribe; **Erica Holloman-Hill**, Ayika Solutions; **Rachel Marston**, Environmental Defense Fund

1996942 *A Setback is a Set Up: Practical Experience and Recommendations for Working Collaboratively with Frontline Organizations:* **M Brown**, I Ahmed

2003325 *Atomic Terrain:* **M L Umayam**

1940385 *Biking While Black as Climate Activism:* **S McCullough**

1896516 *Coasts - Cameras - Action: Co-producing Transdisciplinary Scientific Results with Community Artists:* **A Moore**, C Hartwell, C Allen, G M Kaminsky, N Errett, R J Carini

1996811 *Cosmic Frontlines: Indigenous Communities Protecting the Space Environment:* **A Harvey**

1937791 *Environmental Justice as "Doing Business Differently": Community Organizing Around and Through Data to Rethink Air Pollution Caused by Industrial Manufacturing:* **T Harris**

1921181 *The Water Talk podcast: Science communication, reflection, and best practices:* **M A Nocco**, F Kearns, S Sandoval Solis

1858557 *Visual Data Representations of Natural vs. Human Noise in the Ocean and Solutions for Marine Mammal Conservation via Crocheted Tapestries:* **I Kelly**, L Guertin, L A Guertin

1849585 *Visualizing the Unseen: How Hyper-Resolution Brings New Perspectives to Hydrology:* **N Vergopolan**

1939022 *Voyage of the Hōkūleʻa: Harnessing NOAA's Science on a Sphere Exhibit to Tell Stories About a Modern-Day Voyage on a Hawaiian Canoe Navigating Across the Pacific Ocean Using Revitalized Traditional Pacific Islands Wayfaring Techniques:* **J Hu**, L R Geschwind, R Wizza Gaoiran, K Maile, J T Potemra

1991544 *Web Based Interactive Applications as a Science Communication Modality:* **C Kruse**

1957468 *What Does Data Sound Like? Using Sonification Techniques to Analyze Waves in Earth's Magnetic Field:* **T Costello**, L W Blum, M Hartinger, X Shi, L Williams, M O Archer

1915044 *From Climate Awareness to Adaptive Practice: Social and Institutional Dimensions of Smallholder Response in Zambia:* **C Henegan**, S Kabwe, L Myzece, L Mudenda, J M Fumbelo, M Matokwani, B Mulenga, C J Kucharik

1932103 *From Remote Sensing to Environmental Justice: Sociospatial Patterns of Surface Temperatures in Los Angeles' Recreational Spaces:* **A Agatep**, J B Fisher, K Tacazon, R Zayas, A Rivera, R Archer, J Douglas

1928821 *Frontline communities and artificial intelligence: perceptions, challenges, risks, and opportunities:* **N Lutz**, R Marston, J Stober, M Brown, K M Turner

1994297 *Himalayan Freshwater Ecosystems : Community-Driven Insights into the Impacts of Climate Change:* **A Pathania**, V Gupta

1882079 *Implementation of the California Assembly Bill 617 Program in Eastern Coachella Valley, California: A case-study to demonstrate collaborative governance between government entity and community stakeholders:* **P Mukherjee**, R Dalbeck, P Piqueras, A Farol Saria, U U Vo, W Shen, C Vargas

1924975 *Integrating Remote Sensing Imagery, Socioeconomic Data, and Interviews to Assess Agave/Mezcal-Driven Land-Use/Land-Cover Change in Oaxaca, Mexico:* **A Holguin**, J Devine, N Currit, M T Tanzir

1902137 *Manure, Methane, and Mutual Respect: A Model for Rural Environmental Justice:* **M DePaola**

1916051 *Narrative and storytelling sovereignty for frontline communities: ownership, autonomy, and support in a 21st century context:* **R Marston**, N Lutz, J Camuzeaux, M Brown, K M Turner

1959802 *Net Zero and ECJ: Environmental and Climate Justice Perspectives on Climate Policy, Action, and Innovation:* **L Johnson**, E Morehouse, K M Turner

250555
Impactful Science: Methods and Metrics *(joint with GC, GH, NH)*

Conveners: **Margaret Rudolf**, International Arctic Research Center; **Aparna Bamzai**, University of Oklahoma Norman Campus; **Sandra Starkweather**, University of Colorado Boulder; **Julie Maldonado**, Organization Not Listed

1880928 *Advancing Broader Societal Impacts through Critical Zone Science Education and Outreach: Insights from the NSF Critical Zone Big Data Project:* **D Wheaton**, R E Toolin

1965878 *Assessing community needs and opportunities for project ownership in flood and disaster prone areas:* **S Domingue**, C Robertson, S Hausam

1966449 *Defining the Continental Margin of Hot-Spot Island Chains: A Replicable Geologic Workflow for Continental Shelf Extension in Compliance with Article 76, U.N. Convention of the Law of the Sea:* **F Aron**, C Hervías, A Silva, G Menanno, N Pérez-Estay, A Sanhueza, M Bilbao, G González, L Toledo, G A Yanez, L E Lara

1956907 *Designing a Participatory Research Center for Climate Intervention Technology Governance:* **A Borth**, M Farooque, D Gentleman

2001881 *Evaluating the impact of NASA-supported data and applications on biodiversity conservation decision-making in Colombia:* **V H Gutierrez-Velez**, V Ceballos, M H Olaya Herrera, C Parra, M E Blair, P Jantz, M C Londoño

1886494 *Evaluating the Operational Impact of Blue-Green Urban Stormwater Research: Insights from the United States:* **N Wasankar**, S A Koriche, A Suresh, S J Burian

1988656 *Radical Imagination as a Tool for Envisioning Climate Technology Futures:* **A Dogan**, I Carrera Zamanillo, N Migineishvili, L Kotut

2004841 *Tropical Cyclones and Health in Southeastern Madagascar:* **R Parks**

1949756 *Two Cities, One Struggle: Air Pollution and Environmental Injustice in West Anniston and Detroit:* **H Salah**, D Johnson, T Miller, D Cunningham, C Heard

1886647 *Evaluation Framework for Research that Supports Arctic Indigenous Peoples:* **M Rudolf**, H Eicken, E Lescak

1869120 *Lagniappe for the working delta: restoring Louisiana marshes, protecting land, increasing climate resilience, and reducing flood risk:* **J Maldonado**, R E Turner

1952455 *Moving Science to Action: Evaluating impact beyond academia:* **A R Neeley**, M E Brown, D Felikson, N T Kurtz, T Neumann

1882222 *Navigating Actionable Science in the Arctic: Addressing the Training Gap:* **M DeLue, MSc**, K Timm, M Rudolf

1952786 *Performance evaluation of popular improved biomass cookstoves from a rural community along the Indo-Gangetic Plains:* **I Aier**, U Kakati, P Kaushal, V K Vijay

1901304 *The Role of Cultural Protocols In Fostering Resilience and Leadership AmidstSocietal Change:* **M Ben-Joseph**, K Laronal, B K Azama

1916884 *Tracking Transition of NOAA's Innovate Research and Development into Use:* **F M C Horsfall**, K Geddes, A Bukvich, B Cole

1969155 *Transforming Federal Agency Satellite Data Utilization Through Co-Design: The SNWG Paradigm Shift:* **A LeRoy**, P Olofsson, PhD, C Haley, K Virts, C Tucker

1934347 *Understanding the Impacts of Co-Produced Climate Services Work: case study examples from Kake (Keex Kwaan) and Hoonah (Xunaa), in Southeast Alaska:* **E Figus**, S Trainor

1895572 *Using remote sensing and models to develop products and tools to promote global ecological conservation:* **M G Estes Jr**, K Gaddis, J Nackoney, S Delgado Arias, A I Flores Anderson, L Rogers, W Turner

1898332 *Utilizing Cultural Intelligence and Ethical Space Concepts to Advance Tribal Engagement and Community Partnerships:* **B Edwards**, J Rattling Leaf

252493

Indigenous Science to Action: Transforming Geoscience Through Indigenous Knowledge Systems and Meaningful Engagement with Indigenous Peoples *(joint with B, ED, GC, H)*

Conveners: **Danielle Ignace**, University of Minnesota Twin Cities; **Carolina Michel**, Michigan State University; **Ranalda Tsosie**, New Mexico Institute of Mining and Technology; **Lydia Jennings**, Dartmouth University

1990587 *A Drop in the Ocean: Change From Within the Settler-Colonial Scientific Enterprise:* **E Rosky**

1976598 *A Recipe for Ethical Engagement with Indigenous Communities in Geoscience Contexts:* **D Smiles**

1978287 *Building Tribal Capacity in Environmental Data Science: Cultivating Sustainable, Culturally Rooted Partnerships:* **J Sanovia**

1899706 *Changing Waters, Changing Rice: Climate, Hydrology, and Cultural Knowledge of Manoomin in the Otter Tail River Watershed in Western Minnesota:* **E Spangler**, S Capron, G H C Ng, M Davenport, Z Nooding, A Kreiter, I Villalobos Alvarado, A Olsen

1892350 *Community Creation of the Native Food, Energy, and Water Systems (FEWS) Certificate:* **D C Mays**, A Agogino, K Chief, R Moreno, C Rice, T M Roane

1961525 *Community Fishers: A Community-Based Monitoring Program that Fosters Partnerships with Indigenous Communities in Canada:* **E Beaudin**, L M Marshall, K Holman, H Kosichek, M Hoeberechts, J Phillips, S Jimenez Gonzalez

1979229 *Community-based water sampling: Building leaders and water solutions in Indian Country:* **K Swift Bird**, T Gunhammer

1991261 *Contribution of Traditional Land-Based Knowledge of Cumberland House to Ensure Water Security, Food Security, and Ecological Justice.:* **K E Lam Lam**, C McIlduff, D McKenzie, V Favel

1953225 *Dance For Land: Building Foundations for Shared Values Between Researchers and Communities:* **R Gutierrez**, C Michel, B Sanchez, E Miramontes, J C Libarkin

1951807 *DECOLONIZING FOREST FIRE CHALLENGES AND LAND-BASED ADAPTATIONS IN NORTHERN CANADA: FROM WOODLAND CREE FIRST NATION PERSPECTIVES:* **R Datta**

2000655 *Effects of Yukon River Floods on Community Subsistence:* **J Martinez**, K Black, A K DuVivier

1941608 *Engaging Indigenous People in Development of Science Teaching Tools: The Cultural Connections Process Model for Co-Production of Place-Based Educational Resources:* **L McGilvary**, L Schoening, S A A Topkok, E Hammerschlag

1959048 *Exploring Traditional Ecological Knowledge (TEK) through Gender and Water Ecosystems among the Mi'kmaq Tribal Nation in Maine, USA:* **S Merchant**, V Saman, S E Dewan, D Winslow, S McCormack

1970218 *Fifteen Years of Community-based Research and Mentorship: Reflections from the SLAWR REU Program:* **M A Kenney, PhD**, A Berthelote, C Sifford, C E Torres Parisian, E McClure, A Fondren, A Bergman Humphrey, D M Dalbotten

1936147 *Fostering Indigenous Voices in Orange County, California by Documenting Environmental Injustices on Acjachemen and Gabrieleño/Kizh/Tongva Homelands:* **G Lassos**, C Belardes, S Sidahmed, M Elizarraras Botello, M Sarapura Ortiz, M Bah, C Marsh, S Martinez, J Arnheim, C Ihinegbu, T B Truong, K R Johnson, A Mooney D'Arcy

1854071 *From the sun dance to the study of our star. Ancestral traditions, and contemporary studies on the sun.:* **E Sanchez-Garcia**

1969658 *Global Networks, Local Protocols: Implementing Indigenous Data Governance throughThe Indigenous Data Exchange:* **L Jennings**, R Taitingfong, A Martinez, I Garba, M Hudson, J Anderson, N Garrison, S Carroll

1923185 *HISTORICAL MAPPING AND CO-PRODUCTION OF LANDSCAPE CHANGES IN ALASKAN INDIGENOUS COMMUNITIES, INCLUDING STORYTELLING AND INDIGENOUS KNOWLEDGE:* **H Elson**, J Brigham-Grette, K Archer Olson, H Hunter, M Turner

1931912 *Indigenous Governance Frameworks in Environmental Data Science Research: Advancing Sovereignty Through Knowledge, Method, and Practice:* **M Steen**

2003084 *Ka Wai Ola: Indigenous Water Hydrology Study in Comprehensive Strategic Community Planning:* **K Tengan**, R Moskvichev

1956704 *Lessons in energy planning from Tribal leaders, organizations, and developers:* **J Jones**, M Edwards

1989539 *Leveraging the International Geological Congress 2028 to Promote Indigenous Geoscience, Business, Culture, and Education:* **K J E Boggs**, A Dubois Gafar, J Fischer, E Head, M Maracle, M Spearchief, D W S Eaton

2000788 *Listening to the Land: Community Voices and Knowledge from the Milpa System:* **E Diaz-Almeyda**, P Uc Be, M Romano

1899945 *On good terms: pathways to decolonizing science-appropriated Indigenous terminologies in Arctic research:* **S S Ksenofontov**, V Kuklina, A N Petrov, A L Kholodov

1991061 *Physio-chemical & Biological Processes affecting Mixed Metal Sorption for Bioremediation: Using an Indigenous Centered Research Framework:* **C DeVore**

1935809 *Remote Sensing and Machine Learning as Contemporary Indigenous Knowledge and Cultural Praxis: Mapping Sagittaria Lancifolia:* **A Ghani**

1901772 *The Role of Cultural Protocols In Fostering Resilience and Leadership Amidst Societal Change:* **M Ben-Joseph**, K Laronal, B K Azama

1970282 *The Soil Keeps the Score: Effect of Indaziflam on Invasive Grasses and Soil Nutrients in a Degraded Rangeland:* **E Barth Wu**, I McRyhew

1930794 *Transforming Indigenous Ryukyuan Music into Geo- and Climate Science Lessons for the Ryukyuan-Okinawan Diaspora in Hawai'i:* **J T Higa**, J Y Uyeunten, K A Odo

1997422 *We Carry the Land on Our Tongues: Cultural Programming as an Indigenous Climate Adaptation Strategy:* **K Naquin**

249625
Industry and Data: Improving Economic Resilience with Environmental Information

(cosponsored by AMS: American Meteorological Society) *(joint with GC, GH, NH)*

Conveners: **Allison Crimmins**, National Oceanic and Atmospheric Administration; **Bridget Smith**, Cadmus Group, Inc.; **Jenny Dissen**, NOAA; **Russell Vose**, NOAA National Centers for Environmental Information

1982044 *Atmospheric Icing and Infrastructure Risk: Insights from Climate Projections:* **A Abdelaal**, M R Tye, R R McCrary, K Jones, C McCray, L Kessenich, D Paquin

1959253 *Developing a Clear View of Risk in a Changing Risk Landscape:* **J Waller**

1921223 *Driving Decision-Making: Lessons from Co-Developing Data Products with Industry to Build Economic Resilience:* **A Crimmins**, B Smith, M Brewer, J Dissen, R S Vose, M Coates, L Cholid

1989149 *Evaluating the Long-Term Value and Return on Investment of the Landsat Program for Operational Applications:* **C Straub**, T R Newman

1874343 *From Climate Models to Construction: Quantifying Changes in Extreme Snow Accumulations to Inform Infrastructure Design:* **B Bean**, A Liel, W Zhang, D McEvoy, C Ratterman, R R McCrary, M Maguire, S O'Neil

2003971 *Weaving Indigenous Ways of Knowing and Community Engagement to Address Environmental Justice for schitsu'umsh Land and People:* **A James**, S Campbell-Daniels

1991367 *Why We Can't Measure What Matters: A Blackfeet Nation Soil Carbon Case Study:* **T Hartshorn**, J Long Time Sleeping

1979163 *Woven Earth: Attempting Co-Production of Geohazards Research with Tribal Governments in Southeast Alaska:* **L Silva**, L Bell, J Hanlon, L Pierce, M Lekanof, J Grant, R Cash, D Hotch, A Trudeau, E Hamar, R Paddock III, K Weitzel, J Refuerzo, E Neumann, A Patton, J J Roering, N Mathews, A C Johnson, D Nash, J Rutz, R J Lempert, R Brown, P Wilcox, G E Grant, B Fasth, K Lanphier, C Udell, J S Selker, H Chandler, R Plescher, R Steratore, Z Danielson, S Tobey, R Heintz

1974373 *"Breaking Down Invisible Walls": Applying Indigenous and Community Relationality in the (Geo)sciences:* **A Rodarte**

1908407 *Geospatial and Machine Learning-Based Identification of Solar Park Potential in Industrial Regions of Pakistan:* **A H Cheema**, S Ranjha, B Aslam

1862221 *Hailstorms: The Not So Secondary Peril:* **I M Giammanco**, J Sorber, B Meisenzahl

2004417 *Integration of Federal Data into Resilient Water Infrastructure Design:* **S E Clark**

2002051 *Leveraging NOAA Data for Dollar Tree's Climate Resilience and Supply Chain:* **J Dissen**, J Witte, C Schrems

1976014 *Leveraging Public Meteorological Datasets for Insurance Risk Assessment:* **E Uhlhorn**, S Tolwinski-Ward, S Lorsolo

1987638 *Modeling Catastrophe Losses from Natural Hazards – Data and Tools Used:* **A Haseemkunju**, D Smith

1957577 *Modeling Remote Sensing Data Uncertainty for Decision Analytics: A Case Study for Flood Management:* **A Siddiqi**, A Sampath

1979845 *Real-time Modeling of Insured Property Losses from Natural Hazards Leveraging Multi-platform Atmospheric Data:* **S Sienkiewicz**, D Ward, K Clark

1993735 *The Backbone of the Insurance Industry: The Role of Timely Environmental Information in Real-Time Insurance Analytics:* **W Terwey**

1986526 *The Path to Hail Mitigation: Using Radar Data to Understand Building Material Vulnerability:* **J Sorber**, T Farney

1917679 *Use of Satellite Altimetry Data from ICESat-2 in Private Sector Decision Making:* **M E Brown**, A Phillips, A R Neeley, D Felikson

252489
Interdisciplinary Perspectives for Sustainable Land Systems *(joint with GC)*

Conveners: **Victoria Sarmiento**, Temple University; **Victor Gutierrez-Velez**, Temple University; **Angela Mejia**, Temple University; **Jeronimo Rodriguez**, Temple University; **Sara Grisales**, Temple University

1984021 *A MultiSector Dynamics (MSD) Framework to Assess Local Environmental Impacts from Land Use Changes Driven by Global and Regional Socio-Economic Forces:* **A Gurgel**, K Narayan, C A Schlosser, X Gao, J M Reilly, J F Morris, C R Vernon, S Paltsev

1972907 *Analyzing Bombus Species Abundance in an Urban Environment:* **K Meyer**, A Kay, S B Lerman

1880610 *Interdisciplinary Archetype Analysis of Social-Ecological Systems in the Western United States Reveal Multiple Policy Pathways May Be Necessary to Protect Farmland From Development:* **C Koehn**, G d'Aumale, R Som Castellano, J Brandt

250600
Interdisciplinary Research for National Security Readiness Planning, Response, and Risk Mitigation *(joint with H, NH)*

Conveners: **David Gorelick**, MITRE Corporation Mclean; **Kate Brauman**, University of Alabama; **Amelia Servi**, MIT Lincoln Labs; **Carter Christopher**, Oak Ridge National Laboratory

1872921 *Climate Adaptation at the Frontlines: Analyzing Military-Civilian Networks in Guam and Hawaii:* **X Wang**, C Kirchhoff, E T Joe, H Teicher, M Wenninghoff

1965373 *Crown Jewels Analysis for Control Systems:* **C Carter**, D Gorelick

1967598 *Developing Residential Population Density Models in Data Sparse Areas from Existing Statistical Data:* **C Woody**

2000228 *Earth observations and the Earth science workforce: a water and national security perspective:* **C M Lee**, R Shah, B Downs, S E Owen, D Schimel, E L Hestir, J T Reager II

2001214 *Enhancing Resilience of Critical Minerals and Materials (CMM) Supply Chains for National Security:* **N Parker**

1980699 *Pixels with Perspective: Scale-Dependent Insights into Grassland Change from Remote Sensing and Household Surveys in Mongolia:* **R Blackburn**, G Allington, J Dearing, T Ulambayar, Q Huang

1859870 *Quantifying Spatiotemporal Vegetation Change in the Southeastern United States:* **L Stone**, S Rogers

1900986 *Sustainability in a Mid-Western Ecovillage: Numbers From a Living Laboratory Community:* **K E Todd-Brown**, N Owusu, Z Rubin, R Handler, D Carleton, C Schelly, J Lockyer

1900737 *Sustainable Utilisation and Fostering the Territorial Redevelopment of Two Pilot Paleontological Sites in Southern Italy: Pietraroja and "Le Ciampate del diavolo":* **F O Amore**, C Argenio, R Fistola, I Zingariello, R A La Rocca

1951791 *Transdisciplinary Research to Enhance the Capacity and Community Resilience of Arctic Indigenous Reindeer Herders to Implement Pasture Degradation and Fragmentation Monitoring:* **M E Blair**, S Mathiesen, R Sara, I M Eira, J M Turi, E Betley, P Ersts, M Tonkopeeva, A Oskal

1997652 *False Forecasts and Weather Disinformation as a National Security Threat:* **T Loof**, M S VanDyke

1884557 *Monitoring and modeling hydrologic conditions in Ukraine for hydropower reliance:* **M McCarthy, PhD**, J Gomez-Velez, D Hughes, S Meade

1923851 *Nighttime Lights Data for Evaluating Electric Grid Resilience in Rural Counties:* **A Kahl**, R Limber, S Chinthavali

1956051 *No Power, No Problem: An Overview of MITRE's Black Start Exercise (ERRE) Program:* **L Goodnight**, J Richkus, S Doyle, D Gorelick

1955652 *No Water, No Problem: DoD Readiness Exercises Help the Mission Continue:* **J Richkus**, C Lewellyn, D Gorelick

2001396 *The plot must thicken: Incorporating climate variability into scenario analysis to better capture social-environmental surprise:* **P Keys**, E Barnes

1950356 *Using the Pathways to Instability Framework to Untangle Complex Connections from Water to Conflict:* **K A Brauman**, P Beames, P Mitchell, C Schwartz, K Kimmel-Hass, E Menzies Pluer, N Roberge, Z Goodwin, E Dyson, M Mathews, M Gremillion

2000143 *Water Resilience Analysis for DoD Installations:* **A Servi**, N Judson, W Annie, E Looney, A Matthes, J Hopkins, F Macatuno, J Sack

249390
Intersecting Inequities: Policy, Advocacy, and Community Science for Environmental Justice
(joint with GC, GH)

Conveners: **Rachel Iweka**, Indiana University Indianapolis; **Isabel Carrera Zamanillo**, Front and Centered

1893503 *Towards Justice in Climate Resilience Policy: An Evaluation of Racial Equity in Climate Resilience-Related Health Impact Assessments:* **D McManus**, A Wells, K Bishop

1852289 *Empowering Environmental Justice Communities Through Real-Time Air Quality Monitoring and Geospatial Storytelling: A Case Study from Lewis Place, St. Louis:* **M Akintola**, O Eli

1859358 *Aligning Indigenous Earth Science Perspectives:* **D Reano, PhD**, E Chaides, R Keeto, K Tandon, S Moran

1917043 *Assessing and remediating unregulated waste sites in Window Rock, AZ. Implementing actionable science through community-government-academic collaborations.:* **D McCabe**, J Jones, A Nakai, M Nakai

1969022 *Beyond Coal: Modeling Pathways to Post-Extractive Futures in Appalachia:* **N Molla**, S Levin, E Weber

1895086 *Community-Driven Assessment of Soil and Dust Lead Exposure in Mobile, Alabama:* **R Iweka**, G M Filippelli

1919444 *Community-Engaged Research for Mobility and Home Energy Transitions:* **J M Bielicki**, K Best, D Gingerich, D Hood, J Jacquet, H Le, A May, S Copeland, A Dahir, D Hincapie-Ossa, D Ola

2000435 *Community-Partnered Environmental Monitoring on the Frontlines of "Green" Manufacturing:* **J French**, S Castellanos

1940651 *Cultivating Structures of Trust in Community-University Partnerships:* **S McCullough**, M Sanchez

1940274 *Environmental Justice in Danube Delta Biosphere Reserve, Romania: balancing conservation, use and local ecological knowledge:* **N Vaidianu**, P Teampau, S Constantinescu, F Tatui, R Paduraru, G Nicoara, F Varga, A Giugal, P LOpes

2000625 *Environmental Justice in India: A Systematic Review of Research Themes, Gaps, and Future Directions:* **R Sharma**, A Pillarisetti

1981706 *Expanding Environmental Justice Pathways through Community-Centered Water-Based Training Activities that Cultivate Belonging and Professional Readiness: Leveraging Access to the Pacific Ocean at Scripps Institution of Oceanography at UC San Diego:* **K Auzenne**, F Gonzalez, M Adams, A Novoa

2003005 *Exploring the Relationship between Air Pollution and Social Deprivation in India:* **S Koul**, J Chakraborty

2000042 *Fair access: Policy efforts to ignore community science and opportunities to enhance public participation in government decision-making:* **D Minovi**

1989788 *From Front Porches to Policy: Integrating Resident Observations into Emerging Extreme Heat Interventions:* **C Reed**, J Madrigano, L Easton-Calabria, R Chari, J K Drapkin

1992232 *Investigating Highway Expansion and Flooding Impacts on Environmental Justice Communities in Alabama:* **A Tasnia**, R Patterson

1915328 *Investigating the Effects of Air Pollutants on the Risk of Leukemia in 'Cancer Alley', Louisiana:* **A Cimino**, A Brock, A M Singh, N I Khandaker

1931637 *Moving at the Speed of Trust: Lessons Learned from Implementing a Transformative Scenario Process to Vision the Health Equity Future of Port St. Joe:* **K Owusu Daaku**, E C Wells, D Bolden, N Kowu, A Vidmar

1941743 *Nature without displacement: Community-Based Approaches Towards Addressing Inequities in Urban Green Spaces and the Need for Accessible Knowledge:* **O Nguyen**, G Daily

1982412 *Next generation of Justice Leaders and Co-production: Participatory Science at the Intersection of Rurality, Environment Health, and Culture:* **M Ramirez-Andreotta**, W Borkan, S Buxner, G Chukwuonye, M Jones, M Jacquez, K Palawat, M Martinez, C Newbauer, A Roros, E Salgado, I Samorano, A Zettlemoyer

1965067 *Post-Hurricane Harvey Shifts in Housing Market Dynamics and the Difference in Impacts on Permanent Residents and House Flippers in Harris County, Texas:* **S Venkatramani**, M Davlasheridze

1993539 *The Roots and Remedies of Urban Heat Inequity: A Remotely Sensed Exploration of Diurnal and Seasonal Thermal Disparities in Los Angeles:* **A Shreevastava**, G C Hulley, S Prasanth, T Chakraborty, D Ramos Aguilera, K Sanders, Y Yin

1948746 *Using Community Science and Unique Partnerships to Address Lead Contamination in Cities:* **G M Filippelli**

252648
Multidisciplinary and Co-production Approaches for Community Climate Action

Conveners: **Haley Crim**, Self Employed; **Isatis Cintron-Rodriguez**, Rutgers University New Brunswick

252567
Open To Celebrate!: Open Science Success Stories across the Sciences *(joint with C, H, NH, SH)*

Conveners: **Rebecca Ringuette**, Catholic University of America; **Brian Thomas**, NASA Goddard Space Flight Center; **Christopher Bard**, NASA Goddard Space Flight Center

1973238 *Tips and tricks for modernizing legacy research software:* **A Koufos, PhD**

250338
Powering Science Discoveries and Solutions with People - Insights from multiple models of participatory science projects *(joint with GC, OS, P)*

Conveners: **Sarah Kirn**, Gulf of Maine Research Institute; **Julia Parrish**, University of Washington; **Natalie Baloy**, Western Washington University

1866333 *Mapping the Scholarly Impact of NASA-Funded Citizen Science: A Citation Analysis of Peer-Reviewed Publications:* **H A Fischer**, K Preston, S Kirn, M J Kuchner, J Shirk, R Putnam

2003372 *Applying a Social-Ecological Systems Framework to Analyze Group Dynamics in a Regional, Four year On-Farm Cover Crop Trial in South Texas:* **A Racelis**, B Christoffersen, P Soti, R Kariyat, X Liu

1880017 *Beyond Data: Motivations, Experiences, and Insights from Texas Community Scientists:* **C Lopez**, A Navarro

1940675 *Calibrating the Globe: A Framework to Transform Citizen Science Potential Bias into a Predictive Ecological Blueprint:* **D Yang**, X Huang, Z Zhang, Y He, O Zhang, L P Campbell, R Low, P Nelson, J J Mitchell

1956114 *Climate Resilience from the Ground Up Community Science and Adaptation in Coastal Florida:* **C Hadley**, S Lazarus, Q Simpson, E Ralston

1961035 *Community Dimensions of Human Wellbeing Vital Signs and Indicators to Inform Ecosystem Recovery in Puget Sound, WA:* **M H Chang**, R Hollender, M A Rozance, R Nordal

2000607 *Creating long-lasting impact through Indigenous Aquaculture revitalization:* **M Hatch**, N Smith, N Norris, S Augustine

1911453 *Building Multi-Stakeholder Climate Governance: Lessons from Japan's Local Responses to Climate Change:* **N Masuhara**, S Fujimoto

1967156 *Engagement and Data in Wildfire Preparedness:* **L Cox**, J Dissen, N Shanahan, S P Norman, M Cheek, K Harvell, G Dobson

1850911 *A Pathfinder for the Firemap Extended Attack Modeling in the Wildfire Science and Technology Commons:* **I Altintas**, C Stirm, M Floca, K O'Laughlin, S Purawat, D Crawl, J Combs, J Block, G Johnson, D S Saah, J Lee, A Breland, I Perez, R Al Rawaf, C Lautenberger

1998842 *Open Science Summer Schools: ARM's Newest Capability:* **M Grover**, S M Collis, J R O'Brien, K Dorsey, M Prichard, R Jundt, D Stringer, K Palmer

1991744 *Cultivating Knowledge in the Milpa: A Living Laboratory for Community Science at a Hispanic-Serving Institution:* **E Diaz-Almeyda**, A Rios, M Chico-Brito

1960541 *EMERGE: Participatory Science Outreach and Education for Mosquito Habitat Mapping:* **O Zhang**, A Hays, C Nickerson, D Yang, R Low

1977167 *Enabling Community Science Via Drones:* **C Garza**

1912483 *ENGAGING VULNERABLE OLDER ADULTS AS CO-CREATORS IN SUCCESSFUL COMMUNITY INTERVENTION TRIALS: BENEFITS TO COMMUNITIES AND SCIENCE METHODS, MEASURES AND OUTCOMES:* **J J Schensul**, J Li

1990994 *Immersive Training for Participatory Science: Empowering Early Career Geoscientists to Nurture Community Partnerships:* **E K Hawkins**, T Abel, D Aguirre, M Angel-Cano, N Baloy, B A Bartel, M Beverly, L J Bowman, B J Cummings, E Diaz-Almeyda, J Donatuto, K C Flick, L Harris, M Hatch, M Jeranko, P Lopez, I Moran, J Parrish, A Rodarte, J Santana, T B Truong, R L Tsosie

1883859 *IMPACT: A Citizen Science Platform for Global Engagement and Learning in Space Weather Research:* **M F Bashir**, E V Masongsong, M Hartinger, A Artemyev, V Angelopoulos

1896470 *Improving our collective understanding of window strike mitigation by tapping into real-world experiences of participatory scientists.:* **T Phillips**, K Savides, D Bonter, A Dayer

1923922 *Intercomparison of NASA GLOBE Observer Land Cover Data with Satellite-Derived Products in 2020:* **Y He**, R Sorker, D Yang, X Huang, R Low, P Nelson

1955845 *Scaling Citizen Science for the NSF-DOE Vera C. Rubin Observatory Era: Lessons from Rubin Comet Catchers:* **C Chandler**, D Singh, M Frissell, D Vavilov, N Morato, J Zhang, J Kurlander, M Jurić, A Connolly, C Lintott, C Higgs, H Hsieh, W Oldroyd, P Bernardinelli, C Trujillo, M J M Magbanua, T Wainer, W Burris, J Kueny, J DeSpain, K Farrell, S Sheppard, M Mazzucato, T Rindler, M Bosch, V Gonano, A Lamperti, J da Silva Campos, B Goodwin, I Terentev, C Dukes

1858729 *Science Rooted in Song: A Diné Perspective on Building Ethical Geoscience Collaborations with Indigenous Communities:* **R Tsosie**

1976279 *Springing Forward to Participatory Hydrogeologic Mapping and Monitoring on Oʻahu, Hawaiʻi Using Hydro-Ethnography:* **A Lewis**

1968361 *The ASPIRE Virtual Discussion Series: A platform for exploring successful community-engaged research:* **L Harris**, V Byrd, M Lopez Fretts, P Iwasaki, R Nur, F Tutman, M Stefanak, R Pandya

251647
Reimagining universities as leaders in engaged research and education for, and with, all Americans *(joint with B, ED, GH, NH)*

Conveners: **Mahmud Farooque**, Arizona State University; **Holly Rhodes**, National Academies of Sciences, Engineering, and Medicine; **Angela Bednarek**, Pew Charitable Trusts; **Rajul Pandya**, Arizona State University

1981942 *A "Model of Scale" To Support Engaged Research for Individuals, Institutions, and Sectors Across the Research Ecosystem:* **E Aurbach**

249081
Science and Society: Art and Science—Collaborations Between Artists and Scientists

Conveners: **Sarah Rosengard**, School of the Art Institute of Chicago; **Louise Arnal**, European Centre for Medium-Range Weather Forecasts (ECWMF); **Megan Leung**, University of Calgary; **Kate Semmens**, Nurture Nature Center; **Tybur Q. Casuse**, University of New Mexico Main Campus

2002252 *Dancing Up a Solar Storm - Evaluating a Video-Guided Art-Science Learning Activity that Interweaves NASA PUNCH Science, Science Education, and the Art of Dance.:* **C A Morrow**, S Buxner, A Lockhart

1911366 *Waterlines: Geological Origins of Yazoo-Mississippi Culture:* **K Acosta**

1914789 *The Dynamic Eclipse Broadcast Initiative: Applying Lessons Learned to 2027 Total Solar Eclipse Observations:* **R Baer**, M Penn, C Mandrell, C Brevik, H Henson Jr, M Elyajouri, P J D A Simões

1925813 *The Dynamic Eclipse Broadcast Initiative: Initial Results from the 2024 Eclipse:* **M J Penn**, R Baer, C Mandrell, C Brevik

1981951 *UCI Reserves Oral History Study: Reflections and Findings from a Team Science Archival Analysis Project between the Sacred Places Institute for Indigenous Peoples and UC Irvine's Research Justice Shop:* **G Lassos**, S Martinez, C Marsh, J Delgado, C Belardes, A Mooney D'Arcy, S Grant, V Lowerson Bredow

1846058 *Understanding What Drives Environmental Volunteers: Psychological Motivations and Communication Patterns in Participatory Programs:* **B Goodsell**

2002757 *Where are the westerns? Using community science tools in field experiences to engage undergraduates in the discovery and conservation of pollinators:* **G Bowser**, D Husic

2002116 *Building an institutional infrastructure to advance engaged research:* **B White**

1963368 *Engaged Research and the Social Contract for Science:* **D Guston**

2005555 *ENGAGED RESEARCH IN ACTION: LEVERAGING SCISTARTER TO ADVANCE SCIENCE AND FOSTER COMMUNITY CONNECTIONS:* **D Cavalier**

1984606 *Opportunities for University Leaders to Build Capacity for Engaged Research:* **H Rhodes**

1870102 *Project Confluence: A platform to connect engineers, scientists, and communities to address environmental, climate, and energy challenges:* **D Karwat**, C Capiotis

1876422 *An Alaskan Blend of Paint, Print and Seismology:* **B Chow**, K Maisch

1876587 *Artist & Scientist Collaborate at Sea to Connect the Public with Deep Ocean Processes:* **R Rutstein**, S B Joye

1868856 *Collaborating with artists, scientists, and children's museums: lessons learned from the Shared.Futures Artscience Workshop and Exhibit:* **Y C Lin**, J Sackett, M Philip, H McDonald, T Q Casuse, L Hurst, M C Meyer Driovínto, A Apodaca

1998061 *Coloring Nature: Enlivening Environmental Education Through Art, Community, and an Optional Pint:* **C Norris**, S Matheson, C Meyer, T Smoke Robbins, T Miller Russell

1887558 *Creating a Picture Book on Geoscientific Fieldwork for Elementary School Students:* **T Oguchi**, M Yamamoto, Y Suematsu

1902494 *Creative Curiosity in fluxART Reveals Beauty and Wonder of Ecosystem Science:* **M Bassiouni**, C Solström, A Stull Meyers, J Oldham, C J Still, D Glowacki, M Quetawki, M E Litvak, S Bouchard, C M Gough, R Lewis

1858792 *Drawing the Frozen North: Storytelling the Arctic through Student Voices, Climate Science, and Comics. Janice Ledgerwood, Clovis Community College, Fresno, CA, Dr. Peter Ungar, University of Arkansas, Dr. Mary Heskell, Macalester College, Dr. Aleksey Sheshukov, Kansas State University:* **J Ledgerwood**

1972621 *Entangled Imaginaries: From Community Town Hall to Imagination Frontlines:* **D Owens**, R Rebeka Ryvola de Kremer, L Arnal

1922962 *From Data to Wonder: Transforming NASA Data into Art:* **C L Gentemann**, G Niemeyer, J Kilcher, L Carrington

1916786 *Holding Spaces for Hard Emotions: Empathy for Cassandra's Tears or Giggles for her Joy? A Climate Fiction Inspired Artscience Project:* **A L Neilson**, J Jung, D Owens, S Aka, M Suś

249016
Science and Society: Community Science and Citizen Science *(joint with ED, GC)*

Conveners: **Kathryn Semmens**, Nurture Nature Center; **Sahil Bhandari**, University of British Columbia; **Edgar Guerron Orejuela**, University of South Florida Tampa

1847040 *Bridging Geoscience and Society: Hazard Communication in Ethiopia's Rift Valley:* **D D Teklemariam**, D M F Desta, T F Endeshaw

1966072 *Can Ayurvedic Lifestyle Practices Mitigate Environmental Disease Risk? A Review of Evidence from Northern India:* **F Ahteshyam**, S Sawhney

1966104 *Corporate Social Responsibility and Community Best Practices in the Global Energy Sector:* **D Akter**, C J Friedland, R B Mostafiz

1855821 *Demonstrating Community-Composting as an Equitable Climate Solution in the California Central Valley.:* **M Rodriguez**, R Ryals, J Leung

1917566 *Designing With, Not For: Co-Producing Open Source Environmental Monitoring Systems Through Community Science and Education in Southeast Alaska:* **C Udell**, E Zimmer, C Jacklyn, T Slaght, A C Johnson, L Bell, S Tobey, L Silva, I Johnson, J Narvez, J S Selker

2000976 *Making it weird: Reflections on ten years of creating visions of the future using visual art, narrative fiction and climate science.:* **P Keys**

1881046 *Merging Art with Science to Sustain Cedar Cultural Use and Enhance Community Well-Being in Southeast Alaska:* **A C Johnson**, D A Head, G Hamar, A Clavijo

2003683 *PALLAS: Bridging the Art-Science Divide for Enhanced Scientific Communication:* **H Nyberg**, D Nyberg, A Capirala, L Fifer, É A Laflèche, R C Payne, E L Sneed, M L Wong

1951136 *Parks as Art: Science Engagement Through Park-Based Art Exhibits:* **R Dodge**

1891341 *Sci-Art NEXUS@BWF to Address the Unsolved Problems Facing Humanity and the Planet.:* **D Jay**, L Muglia

1954992 *SEISMOPHONY No. 1: Listening to Earth Through Seismic Event Time Series:* **L H Ochoa Gutierrez**, O Hernandez, Y Aparicio Abadia

1911379 *Teaching Polar Science Through Musical Theatre: The Armstrongs' Arctic Adventure!:* **H Beasley**

1859785 *Visualize Blue Ecosystems as Ocean Climate Champions:* **R A Fine**

1853458 *Developing Environmental Monitoring Systems in Rural Vermont to Explore the Use of Open-Source Electronic Hardware for Scientific Communities, Municipalities, and Civilian Scientists:* **A Vlahogiannis**, E Morse, S Cowan, R Lieblappen, M O'Leary

1966293 *Energizing science through community engagement: electric vehicles in the Arctic:* **J Schmidt**, T Schwoerer, B Stream, F Ozer Green, M Wilber, S Glaser, T Bodony

1987486 *Enhancing Urban Climate Resilience through Home Repair Programs: Adaptation Effectiveness and Co-benefits from a Suwon Case Study:* **E Kim**, C Kim, E Kang

1989589 *Estimating Carbon Emission Reductions Through Citizen Behavior Change: Living Lab Case Study in Suwon City, South Korea:* **E Kang**, G Park, J Ro, E Kim

1994872 *Faith Communities as Partners in Community Science:* **D Weston**

1850996 *Gravity Wave Zoo: Engaging Citizen Science to Analyze Atmospheric Gravity Wave Activity over Poker Flat, Alaska:* **T Karasinski**, K Bossert, J Berkheimer, J Norrell, S Phillips, K Munoz, P D Pautet

1845871 *Integrating Geomythology and Folk Narratives in Geospatial Decision Support for Mountain Disaster Mitigation:* **N Dave**, S Kushwah, B Kakkai, P Joshi, B Rathod

1916236 *Lesson learned from Space Cloud Watch – A NASA Heliophysics Citizen Science Project:* **C Y Cullens**, B Thurairajah

1927631 *Monitoring Ground-Level Ozone Through Community Science: The National Ozone Garden Network:* **J Malmberg**, B Hatheway, D L Lombardozzi, E A Wright, M E Dussault, D Elakara, E Hagen, M R Pippin, L Trainer

1984356 *Participatory science in action: Radon literacy and testing in African American communities:* **D Dai**

1980005 *Peer Review as Community Science: Reflections from a Global Survey of Earth Scientists:* **Y Chen**, C Camargo, I T Simoes-Sousa, D W Kim, M A Spall, J T Farrar

1855716 *Street-Level Flood Model Validation through Community Science:* **D Loftis**

1880159 *The Community Led Enhanced Air Quality Network (CLEAN) Project: A community-centered approach to air quality monitoring and environmental justice in Franklin County, Ohio:* **M Diaz-Hernandez**, L Abraham, E Hug, J McAdams, B Whetstone, A Porr

248098
Science and Society: Science Communication Practice, Research, and Reflection in an Era of Change

Conveners: **Urooj Raja**, Loyola University Chicago; **Lyne Morissette**, M - Expertise Marine inc.

1907574 *Analysis of Ship Navigation Patterns during Typhoon Approaches: Spatial-Temporal Big Data Analysis and Implications for Data-Driven Communication:* **H G Han**, C Lee, J S Lee

1983235 *Beyond the Science: Sharing the World of Arctic Research and Adaptation Through Conversations and Podcasts:* **L Ferguson**, M DeLue, MSc, E Carter

1871886 *Building a Citizen-Driven Platform for Coastal Intelligence and Public Engagement: The Smart Ocean Village Project in Busan, South Korea:* **C Lee**, H G Han

1921653 *Communicating Climate with Communities: Evolving Communication Strategies in Times of Political and Environmental Change:* **S Clem**, M Henderson

2005093 *Communicating Science via Tri-Sector Partnerships for Cleaner Air and Healthy Communities:* **T Adams**, R Sakai, R Hackett

1931546 *Developing Communication Products for Sea Turtle Conservation:* **E Johnson**, D Dick, L Plants

1946287 *Embracing Uncertainty and the Social Sciences in Earth Science Communication:* **D A Stainforth**

1895332 *Framework for Evaluating the Feasibility of a Vertical Axis Wind Farm in Expeditionary Locations:* **C Weeren**

1934441 *The Impact of Healthcare Facilities on Quality-Adjusted Life Expectancy: A Case Study of South Korea:* **K Bonyu**, H Yoon

1922013 *Using Evaluation and Adaptive Management to Enhance Participant and Scientific Outcomes for the Nationwide Participatory Ocean Color Network:* **T Frensley**, D Morales, P J Bresnahan Jr, B Brewin, J L Wood

2000735 *Weather & Wellness – Creating Partnerships, Collaborations, and Open Educational Resources (OER) for Mississippi Communities:* **S Lalk**, S Ambinakudige, T Patterson, D Crockett, J Mensa, B Williams, B Fosu, H Spencer, J L Dyer, R R Kambham, D Williams, T Marlow

1905197 *Where Science Meets Spirit: Co-Creating a Climate Assembly Rooted in Community, Ritual, and Resilience in Florida:* **A Khan**, R Meyer, B Ward

1911683 *X-Snow: A Citizen-Science Initiative for Snow Monitoring in the Northeastern United States:* **M Tedesco**, M Turrin, M L Annunziato, S Dull

1921545 *From Curiosity to Understanding: Using Narrative as a Science Communication Tool:* **J Jimenez**, D Whittaker

1878756 *From Doing Science to Reporting: Why Generic Communication Is Essential for Every Complex Scientific Research:* **B Neupane**

1957586 *Harnessing AI Hallucinations for Improved Science Communication: A Framework for Persona-Driven Risk Diagnosis:* **M A Kautz**, S Archer, A Bean, C J Hapeman, T Ulbrich

1959089 *NOAA Air Quality Program Evaluation and Opportunities:* **N Boston**, L Williams, Y Jung, K Garrett, V Were

1927627 *Not Another Research Paper: Empowering U.S. Industries to Apply NOAA Research and Data using StoryMaps:* **S Luce**, B Smith, M Coates

1936285 *Science Communication Strategies and Lessons Learned from the Mendenhall Glacier Outburst Flood in Juneau, Alaska:* **E W Hood**, S Fagan, D Norena, A B Jacobs, J Pierce, K Timm

2003671 *Seeing Climate Full Spectrum: Understanding Public Perception of False-Color Satellite Imagery:* **K Sletten**

1971475 *Swifts, Sweeps, and Storytelling: Incorporating Short Film, Educational Materials, and an Outreach Event in a Multidisciplinary Chimney Swift Communication Project:* **K Perrault**, B McDonough, J Proctor

1967983 *Using Dialogic Methods to Shape Organizational Science Communication at the Kentucky Geological Survey:* **L Cagle**, W C Haneberg

1962374 *Utilizing modern web, streaming, and social media tools to engage with and educate the public on earthquake hazards and preparedness:* **Z Newman**, G Tepp, M Vinci, J K Saunders, E Yu, E Jaski, A L Husker, C Terrill

250726
Science and Society: Science for Policy

Conveners: **Holly Mayton**, John Deere; **Gifford Wong**, Dartmouth College; **Alexandra Shultz**, American Geophysical Union

1901509 *When Power Moves to the City: Justice, Liveability, and the Peripheralisation of Rural and Remote Communities:* **M Hinzman**

1938181 *Assessing Local Ordinances and Conditions for Green Stormwater Infrastructure:* **B Gupta**, J Campbell, C Kirchhoff

1929061 *Equity in Motion: Rethinking Transit Deserts through Complete Trip Data:* **R Li**, W Luo, C Xiong

1915146 *From Sinking Ground to Alternative Solutions: How the Harris-Galveston Subsidence District Regulates Groundwater Withdrawal to Prevent Subsidence:* **A Greuter**, M J Turco, J Afinowicz, J Ellis, S Kommineni

2000547 *Grassroots Champions for Science Education: Sharing the Science of Deep-sea Mining with Decision-makers:* **M M Rogers**, M Haver

1910518 *Ignoring the Social Costs of Carbon Exacerbates the Costs of Extreme Weather Events: Evidence from Boulder, Colorado:* **K F Forbes**

1975601 *Improving the Utility and Adoption of Space-based Earth Observations by Stakeholders in the Policy, Regulatory and Public Service Communities:* **D Crisp**, H Suto, O Ochiai

1860744 *Just Energy Transition in India — Science Driven Pathways for Equitable Policy Design:* **N Nancy**

1902523 *Large mammal 87Sr/86Sr isoscapes to assign source ranges of poached ivory:* **J C Lerback**, T E Cerling, D P Fernandez, S Wasser, M Kuhner

249592
Science and Society: Social and Behavioral Sciences

Conveners: **Christine Kirchhoff**, University of Connecticut; **Haley Crim**, Self Employed; **Haley Crim**, Self Employed

1890477 *Armed Conflict, Constraint, and Non-Compliance: Illicit Forest Use in War-Affected Ethiopia:* **A M Meressa**, A T Mengistu

1989434 *Mapping Internal Labour Migration in India : A Network-Based Analysis of Regional Disparities and Labour Flow Dynamics:* **P Kumari**, S T

1851968 *Quantifying the economic costs of urban heat islands and mitigation benefits in the United States:* **K Zhang**, T Bearpark, L Chu, M Oppenheimer, K Chen, E Bou-Zeid

1973385 *Quantifying Wetland Conversion Rates and Ecosystem Service Loss under Changing Federal Protections:* **K Wadkowski**, E White Jr

1934668 *Simulating and Evaluating Nature-Based Solutions: A Comparative Study of Flood Resilience and Planning Policies in Rural Georgia and Louisiana:* **Q Wang**, Y Wang, S Najishahbahrami

1924935 *The Battelle Center for Science, Engineering and Public Policy – an Example of Innovative Industry & Academia Partnership:* **D Kelley**, L Frazier, E Rivera, M Pires, B Felts

1966718 *The combined effects of wildfire smoke and heat on livelihoods in the U.S.: NOAA CAP/RISA network's portfolio of work:* **C Simpson**, C Combest-Friedman, S Bath

1997164 *The Dark for the Park Alliance: Efforts to Reduce Light Pollution in the Energy Industry:* **S Hummel**, B Liebel

1976337 *Transdisciplinary and Place Based Development of a Multidimensional Environmental Index for Bernalillo County:* **T Q Casuse**, A Mulchandani, J M Cerrato, M Morgan

1902384 *Understanding the Role of Data and Storytelling in Environmental Decision-Making:* **N Aristizábal**, Y Zhong, E Bennett

1876943 *Behavioral Intention to Use Desalinated Water in Coastal Bangladesh: A Theory of Planned Behavior Approach:* **S Das Sowmya**, S B Murshed

1957131 *Belief Networks and Just Transition: Identity, Values, and Post-Coal Futures in Appalachia:* **N Molla**, E Weber, J Markowitz

1995577 *Civic SciTech Trainee Program for Graduate Students to Influence Local Climate Mitigation Policies:* **H Bowers**, K Neat, S Mukherjee, V Vostinak, L Ballek-Cole, P Gruver-Barr, C Kirchhoff

1971675 *Climate Mitigation Beyond Emissions: A Human-Centered Framework for Assessing Wellbeing Impacts Across Development Contexts:* **C P Wejnert-Depue**

1905046 *Environmental Drivers of Urban Park Visitation in Older Adults: A Large-Scale Quantitative Study:* **J Lee**, H Yoon

1992553 *Evaluation of Emission Reduction and other Societal and Environmental Outcomes: Structured Decision Making for the Louisiana Climate Action Plan:* **A Dausman**, E Kiskaddon, A DeJong, C McHugh, A Littman, S Dalyander, S Hemmerling

1880865 *Exploring the Indoor Air Pollution Reduction Behavior Among Urban Residents of Bangladesh Using an Extended Theory of Planned Behavior (TPB) Model:* **M R Ritu**, M M Patwary, A Iftikhar, M I A Badhon, M Bardhan, I C Sakib, D Sikder, M P Kabir

1891894 *From Awareness to Action: Applying Health Communication to Disaster Preparedness and Mitigation:* **Y Fukushima**, S Kuriyama, T Sato, S Sato, J Gerster, M Orui, S Fujimoto, T Ojima, M Kosugi, M Iwamoto, Y Tomine

1892370 *How Screen Time Affects Sleep in Teenagers:* **M Adepoju**, A Brock, A M Singh, N I Khandaker

252788
Science, Contested: Community-based Science and Cumulative Impacts

Conveners: **Gretchen Gehrke**, Public Laboratory for Open Technology and Science; **Jessica Varner**, University of Southern California

1991677 *A Multi-Dimensional Investigation of Antibiotic Resistance, Bioaerosols, and Community Impact Near Concentrated Animal Feeding Operations in California's Central Valley:* **Z Ibrahim Watkins**, K Osborn, Y Zhang, C Dickerson, L Henning, J A Jay

250785
Science-Guided Solutions: Insights from the UCCRN Assessment on Climate Change and Cities *(joint with ED)*

Conveners: **Cynthia Rosenzweig**, NASA Goddard Institute for Space Studies; **William Solecki**, City University of New York - Hunter College; **Daniel Bader**, Columbia University; **Maria Dombrov**, Columbia University, CCSR

247863
Science in Service of Climate Adaptation: Community Engagement, Decision Making, Action *(joint with ED, GC, NH)*

Conveners: **Leigh Peake**, Gulf of Maine Research Institute; **Katie Spellman**, University of Alaska Fairbanks; **Paul Martin**, Arizona State University; **Angelica Rodriguez**, University of California, San Diego

1895920 *Natural Disaster Anxiety, Meaning, and Resilience in Emerging Adult:* **B Ling**

1963221 *Navigating Earthquake Information in the Age of AI: A Case Study of AI Generated Earthquake Content:* **S Stanley**, C Wardle, S K McBride

1922798 *Public Concern on Plastic Pollution and Its Association with Pro-environmental Behavior in Bangladesh:* **M Hasan**, M M Patwary, M R Ritu, D Sikder, M Bardhan, S M Billah, S Hasan, M P Kabir

1956779 *Social inequity unproportionally affects flood preparedness:* **B Zhao**, X Shen, Y Yin, Q Yang, Y Mei, M Peña, J Price

1934594 *Using Smartphone Mobility Data to Measure Recreational Value of Urban Parks: A Case Study in Austin, Texas:* **Z Guo**, Y Song, Y Hao, R Zhang

1980381 *When Every Second Counts: Parental Decision-Making in Rainier's Lahar Inundation Zone:* **J N Ghent**, N Errett, H Weiss-Racine, A Bostrom, J Christie, B Crowell, K Hofmann

1982673 *Even More Permission to Pollute? Cumulative Impacts of Facilities Eligible for Presidential Exemptions to Clean Air Act Provisions:* **E Nost**, A Uri, K Barrett, S Hansen, T Stevens, C Cane

1971526 *Proposal for a Collaborative Platform for Environmental and Health Data and Analysis:* **S Kay**, M Salgado, E Nost, N Yoder, C Cane, K Terrell, K Hoeberling, C Lee

1861494 *A Participatory Approach to Climate Adaptation: Place-Based Partnerships and Transboundary Impact:* **D McCullagh**

1948321 *Before the Next Flood: Constructing a Narrative of Flood Preparation and Recovery in Marion County, South Carolina:* **L Howie**

1879190 *Community Engagement Approaches to Connect Coastal Data to Decision Makers in Rural Alaska:* **M McArthur**, K Erickson, MA, E Trochim

1961941 *Gendered Dimensions of Anticipatory Actions for Cyclone Preparedness in Coastal Bangladesh:* **F A Mishu**, S B Murshed, M R Islam, M H Rahman, Shampa, A I A Chowdhury, S Haque, M Salehin, N Tabassum, L T K Purnata, F Rahman

1958606 *Interactions between Culture, Climate Change, Farming, and Health Outcomes:* **C Sharkus**, E Adawudu, M Mawla, C Gaffney, F Iradukunda, C D Guzman

252229
Sharing Their Science: Enabling Scientists in Public Engagement and Communication Efforts
(joint with ED)

Conveners: **Jessica Swann**, Arizona State University; **Emma Marcucci**, University of Alaska Fairbanks; **Olivia Ambrogio**, Arizona State University

1883912 *A Framework for Climate Science-to-Policy Communication:* **S Ali**, M Reboita, A Goheer

1976218 *Advancing Public Understanding of Air Quality Through Citizen Science And Digital Tools in Kampala:* **D Lsoto**, H Abaho, J Owomugisha, A Natif, L Draleti, R Kemirembe, M R Platas

1989294 *Assessing Cyclone Forecast Literacy, Accessibility, and Stakeholder-Specific Needs in the Coastal Communities in Bangladesh.:* **K E Lam Lam**, M Kamal, A Rahman

1940065 *Breaking the Calculus Barrier: A Participatory Model for Expanding STEM Access:* **A Lobo**, J Marrone Junior

1949785 *Communicating Research in National Parks: Creating a Culture of Science and Stewardship:* **N Fisichelli**, C Schmitt

1853264 *Continuing Engagement and Sharing of Ocean Science Stories Post-Expedition by JOIDES Resolution Outreach Officers:* **L A Guertin**

1989964 *Creating Meaningful STEM Learning Experiences: A Practical Hands-On Framework for Public Engagement Applicable Across Scientific Fields:* **C Blanco**

1989523 *Crisis or Catalyst? Teaching Ethical Skepticism in the Age of AI-Powered Science Communication:* **P Gant**

1985898 *Cutting-Edge Outreach Efforts in Aurora Science:* **V Ledvina**

1911434 *Solving the Dual Energy-Climate Challenge: Enhancing Renewable Infrastructure Resilience with Satellite EO and Immersive Data Visualization:* **M Rathnasabapathy**, R Connolly, PhD, J Hamori, D Newman

1999014 *Towards an Autochthonous, Community-Centric Approach to Disaster Risk Reduction: A Framework for Engaging with Communities Navigating Recovery in Research Collaborations:* **J Santos-Hernandez**, A Zhang Lam, A Velez Vega, F Vidal Franceschi, H Vega Rivera

1876682 *Developing Computer-based STEM Camp Educational Material to Visualize Possible Human Migration to Mars:* **T Bell**, M Cass, R Neff, T DeLisle

1922216 *Empowering Students & Their Communities Through Geoscience Outreach:* **J Peña**

1989927 *Expanding our SCoPE of collaboration to engage broader audiences in the importance of Polar Science:* **A Cusick**, M Mascioni, E Neibaur, E Grudin, C Iachetti, D De Nicolo, F Hammar, Á Rodríguez Santiago, D Hunsley, A D Anbar, J L Torres-Perez, J L Swann

1995475 *Leveraging NASA Data for Community Colleges with Sci-ACT:* **M M Haghanikar**

1928916 *Multiple Avenues for Science Communication During a STEMSEAS Expedition:* **J Valenzuela**, J Aquino, T Barrueta, M Braswell, M Dragovich, S Gautier, B Shah, A Curington, T S Weathers

1924718 *Space Turbulence: Demonstrating the importance of turbulence in our daily lives through NASA Missions and SciAct team collaborations:* **T B Oehmke, PhD**, J S Simon, A J J Tamer, H E Spence, R Irelan, H Skoglund, A Hahn-Lowry, V Vazquez-Lopez, C Mead, G Bruce, M Kirk, S Steel, A D Anbar

1984571 *The Hidden Work of Translation: What NASA SciAct Reveals About the Nature of Subject Matter Expert Engagement in Outreach:* **M Washington**, C Mead, S Buxner, M Wadhwa

1970656 *The Tulsa Renewable Business Alliance: How the Clean Energy Industry in Oklahoma Created a Place to Convene, a Voice for Advocacy, and a Public Outreach and Education Platform:* **E N Wilson**, R Danley, K Putman-Hughes, B Crane

1962154 *Visualizing Extreme Weather Risk: The Effect of Immersion, Interactivity, and Context on Comprehension, Intention to Act, and Utility for Decision-making.:* **T Gladkova**, R Connolly, PhD, M Rathnasabapathy, J Richkus, D Newman

250178

Space Policy and Advocacy *(joint with P, SA, SH, SM)*

Conveners: **Brian Walsh**, Boston University; **Dan Baker**, University of Colorado Boulder, Laboratory for Atmospheric and Space Physics; **Bhishek Manek**, ; **Subash Adhikari**, University of Delaware

1976566 *Advances in Space Technology and the Reconfiguration of Global Space Power: Comparative Evidence from the United States, Russia, China, and India (2000–2025):* **U S Ajmeera**

1936198 *Aviation Radiation Mitigation Strategy Validated During The Gannon Storm:* **W K Tobiska**, B R Hogan, J J Bailey, K Wahl

1919618 *Characterizing Explosion Fragmentation Risk in the Cislunar Region: A Comparative Study of LEO and LLO Debris Evolution:* **A Anderson**, D Canales

1924583 *Michigan's Graduate-Level Course on Space Policy and Management:* **M W Liemohn**, K Wilbanks

252552

Status of Tribes and Climate Change (STACC) Report, Volume 2: Indigenous Knowledges and Ways of Not Knowing

Conveners: **TR Heydman**, Colorado State University Fort Collins; **Nikki Cooley**, Northern Arizona University; **Karen Cozzetto**, Northern Arizona University; **Bazile Panek**, Institute for Tribal Environmental Professionals

249776

Synthesis of Ancient Engineering, Architecture, and Linguistics Exemplified by Geo-archaeological Sites (cosponsored by AOGS: Asia Oceania Geosciences Society,IAS: International Association of Sedimentologists,NAGT: National Association of Geoscience Teachers,SEG: Society of Exploration Geophysicists) *(joint with B, ED, GH, PP)*

Conveners: **Justin Henry**, University of South Florida Tampa; **Suniti Karunatillake**, Louisiana State University; **Sanjeewa Malaviarachchi**, University of Peradeniya; **Jeffrey Pomerantz**, Proximal Design Labs; **Carlos Gary-Bicas**, Stony Brook University

1967355 *Practical Pathways for the Space Science Community to Engage in Advocacy:* **S A Hess Webber, PhD**, A Koufos, PhD , N Mathews, K Wilbanks

1955551 *Space Policy for Sustainable Exploration: Systems Analysis of NASA's Commercial Lunar Payload Services (CLPS) Initiative:* **H Polson**, A Siddiqi, P Prem, M Janssen

1932608 *Sustainability Evaluations of Lunar Environment Exploration for Mission Planning and Policy:* **A Siddiqi**, P Prem, M Janssen, V Rupani, L Almeida, R Mathankar, E Duchnowski, H Polson, C Brown

1876311 *Sustaining the Future in Low Earth Orbit:* **D N Baker**

1873327 *The Heliophysics Coalition: A unifying voice for Heliophysics advocacy:* **I J Cohen**, G Emslie, G S Kerr, PhD, B Walsh, J P Mason, PhD, M J Wiltberger

1894608 *The Resist-Accept-Direct (RAD) Adaptive Framework for Lunar Exploration Policy:* **C Ahrens**, R Lolachi, A Lynch, N E Petro

1961152 *The SPA Advocacy Committee:* **B Walsh**, B Manek, E I Mason, W Li, D N Baker, J Szente, J Pettit, G González, PhD, A Mukhopadhyay, L C Gasque, S Adhikari, PhD, G Berland, S Reddy, R M McGranaghan, I J Cohen

1981356 *Stewardship Speaks: The Ripple Effect of Indigenous Collaboration:* **T Heydman**

1980744 *The Fundamental Role Of Indigenous Knowledges: Reflections from the Status of Tribes and Climate Change (STACC) Report, V1 and V2:* **N E Cooley**

1976417 *The State of Water Security and Sovereignty in Minnesota:* **D Smiles**

1982682 *Valuing Indigenous Science for Climate Adaptation: Water Justice and Good Fire in the STACC Report:* **K Leonard**

1994448 *Repatriation and Retaining of Ceylonese Artefacts: A Conservator's Perspective:* **D Fernando**

249545
Systems Analysis Tools for Convergent Research in Coupled Human and Natural Systems *(joint with NH)*

Conveners: **Rui Zhang**, University of New Mexico Main Campus; **Tybur Q. Casuse**, University of New Mexico Main Campus; **Yolanda C Lin**, Nanyang Technological University; **Alex Webster**, University of New Mexico Main Campus; **Rui Zhang**, University of New Mexico Main Campus

1940112 *Archetypes for Identifying Systemic Challenges to Advance Convergence Place-Based Research: A Case Study of Water Governance in Santa Fe River Watershed:* **R Zhang**, Y C Lin, A Webster, L A Ratzlaff

251497
Tackling the Threat to Democracy from Climate Misinformation *(joint with A, ED, GC)*

Conveners: **Robert Ward**, London School of Economics and Political Science; **Michael Mann**, University of Pennsylvania

1988316 *Climate (mis)Information and the Struggle for Political Power:* **H Crim**, I M Cintron-Rodriguez

249452
The Co-Production, Implementation, and Communication of Climate Services in the US and Abroad

Conveners: **Laurel DiSera**, Columbia University; **S Lucille Blakeley**, Columbia University; **Maaz Gardezi**, Virginia Tech; **Maya Moore**, Columbia University of New York

1978843 *A Climate Risk Portal for the City and County of Denver: Co-Design and Co-Production of a Tool For Climate Adaptation in a Major City:* **J L Vigh**, K H Nguyen, R R McCrary, L Kessenich, I Simpson, R Kumar, J Taganova

1936714 *Co-Producing Climate Services Through Community-Led Planning Strategies in Coastal Louisiana:* **Y Wang**, Q Wang, L Ramirez, C Frampton

2003363 *Co-Producing Gender-Sensitive Climate Services: Lessons from Community-Based Early Warning Systems in Malawi:* **J N Ngaina**, C Banda

1927268 *Co-producing State-level Climate Services — An Operational Framework from the Cal-Adapt: Analytics Engine:* **N L Freitas**, K A Jagannathan, O M Doherty, V Ford, J Bui, A Conrad-Saydah, M D Koenig, N Keeney, C Chen, N Schroeder, J Roman, N Thomas, E E McClenny

1953614 *Selective Screening of Imipramine Hydrochloride with Enhanced Fluorescence and Significant Spectral Shift using Fluorescent Eu:CrCT$_x$ MXene Quantum Dots and studying their real time applications:* **P Singh**, S K Kailasa, Z V P Murthy

1977297 *Tracking ecological dependencies in trade: Embodied human appropriation of net primary production (eHANPP) for U.S. counties:* **K F Fowler**, R Rushforth, B L Ruddell, C Lant

1902966 *Using Mental Models to Bridge the Gap Between Human and Natural Systems: An Application to Land Use Change in a Transboundary Arid Region:* **R Neri Barranco**, D Sanyal, K Palamattam Aji

1942265 *Countering the Threat to UK Democracy from Increases in Climate Misinformation:* **R E T Ward**, P Sethi, E de Quay

1924272 *Misinformation, Democracy, and Positive Business Action on Global Warming, facilitated by Climate Change Risk and Opportunity Officers in Business:* **J W Dash**

1986752 *Past Climate Adaptation Policy Learning among U.S. Federal Agencies: Preserving & Improving Administrative Governance in an Age of Misinformation:* **M Tier**, E Li, E Weber, M Oppenheimer

1921614 *Engaging with Users Across Communities and Industries: Strategies for Bringing Data to the Public through Climate Services:* **A Crimmins**, B Smith, J E Cherry, M Coates, E Mutkoski, M Brewer, L Cholid

1957558 *From Technical to Tangible: Increasing the Accessibility of NOAA's National Water Model for Community Resilience Planners through the Co-Development of a Supplementary Web Interface:* **E Hibbert**, K Raub, I Garousi Nejad, A Castronova, D Rincon Reyes

1989963 *Leveraging Discrete Choice Experiments to Co-Configure Features of Trustworthy AI augmented Decision Support Systems for Sustaining Climate Services at the Nexus of Agriculture and Water:* **A Zia**, M Gardezi, B Ryan, S Merrill, E Clark, A Dadkhah, D M Rizzo

1929654 *Moving Forward Together: Co-production of Tailored Heat Advisories in Kenya - a Case Study of Kakuma Refugee Camp:* **D C Alaso**, C C Funk, M Kilavi, F Sedah, L Harrison, P A Kucera, R Muita, A H Fink, R Saldivar, G J Husak, G Flaspohler, J Adkins

1959008 *Opportunities and Challenges in the Co-production and Implementation of Climate Services: Stories from the Frontline:* **L Harrison**

2001032 *Performance-based Incentives and Knowledge Co-Production Using Precision Technologies for Agri-Environmental Governance:* **B Ryan**, A Zia, D M Rizzo, M Gardezi

1983957 *Real Talk: Successes and Challenges in Co-producing Usable, Useful, and Used Climate Research Across a Large Interdisciplinary Team:* **L M Auermuller**, R E Kopp, C Helgeson

250143
The Importance of Climate and Environmental Assessments for Decision-Making in Challenging Times *(joint with GC)*

Conveners: **Pamela McElwee**, Rutgers University New Brunswick; **Abby Frazier**, Clark University; **Gillian Bowser**, Colorado State University Fort Collins; **Michael Chang**, Nature Conservancy

1924689 *Advancing Locally Driven Climate Assessments to Speed Adaptation in a Changing Pacific Islands Region:* **Z N Grecni**, V W Keener

1978572 *Centering Indigenous Knowledges: Insights From the Status of Tribes and Climate Change (STACC) Report:* **N E Cooley**

1871268 *Engaging Unhoused People in Climate Vulnerability Assessment Work and Coastal Resilience, in Cape Cod, Massachusetts:* **J Flahive**, R Negrón, M Borrelli

1996779 *Evaluating Nature-based Climate Solutions for Greenhouse Gas Mitigation Using a SMART Decision Matrix.:* **J Wightman**, P Woodbury

1975689 *High-resolution Climate Assessments for Infrastructure and Environmental Planning in New Hampshire:* **M D Stampone**, E Burakowski

2005756 *Innovations in Process and Practice for Global Assessments: Lessons from the Global Adaptation Mapping Initiative:* **C Roncoli**

250523
The MacGyver Session: The Place for Novel, Exciting, Self-Made, Hacked, or Improved Sensors and Software Solutions to Contribute to Participatory, Citizen, and Community Science *(joint with H, NS, OS, SA)*

Conveners: **Philip Bresnahan**, University of North Carolina at Wilmington; **Stephen Moysey**, Clemson University; **Austin Madson**, University of Wyoming

1855034 *A Portable, High-Resolution 3D ERT System for Microscale Biogeophysical Monitoring:* **A Ospina Parra**, K Keating

1875662 *The Climate Resilience Information System: A New Open Data Portal for Developers of Climate Services:* **D D Herring**, D Pisut

2003156 *Near-term Earth System Risk and Intervention: A Roadmap for Research and Decision-making:* **C Hartin**, K Wanser, A Wong

1970223 *Partnering for Impact: Grounding Climate Policy in Science and Community Voices through California's Climate Change Assessment:* **E Anico**, E Becker Lowe, N Obaldia

1974393 *State Climate Summaries: Providing Relevant and Reliable State-level Climate Information:* **L E Stevens**, T Maycock, J Allen, J Anheuser, M Essig, S Brookins, K M Johnson, A Lamb, A McCarrick, D Michelson, A Visovatti

1976953 *Status of Tribes and Climate Change Report: Elevating Indigenous Knowledges:* **A Gries**

1906932 *Supporting Policy Decision-Making Through Climate Change Mitigation and Adaptation R&D Projects:* **M Shin**, H Jang, H Woo, K Kim

1918066 *The Critical Role of Regional Chapters in the National Climate Assessment: Lessons from NCA5:* **A G Frazier, PhD**, A Lustig, M H Chang, E Elias, R A McPherson, V W Keener, Z N Grecni, E Mecray, P Chardon-Maldonado, D D White

1912769 *The Role of Assessments in Globally Challenging Times:* **P McElwee**

1978496 *The Scientific Assessment of Ozone Depletion in Support of the Montreal Protocol on Substances that Deplete Ozone:* **D W Fahey**, K W Jucks, L Carpenter, R Hannun, C R Thompson, B Safari

1899953 *Developing and Deploying Low-Cost, Open-Source Sensors for Participatory Science and Coastal Resilience:* **P J Bresnahan Jr**, A Lucas, B Settin, E Farquhar, G Lower, S Lail, D Morales, B Middour, R McCombs, B Brewin, T Frensley, K Anarde, D J Grimes

1927077 *Non-Linear Temperature Dependence in SAM-III Fluxgate Magnetometers:* **A Hobson**, R J Filwett, D Chedalawada

1858474 *STELLA: NASA's Low-Cost, Open-Source Instruments Empowering Workforce Development and Community Science:* **M Taylor**, P Mirel, P K Campell, S Serbin, BA, MS, PhD, A T Joseph, J P Haas, N Rayne, E Resnick, S Alexander

1990585 *Tree Data for All: Building an Open-Source Urban Forestry Model:* **A Frisk**, J Díaz-Garayúa

251880
Water and Society: Equity and Justice in Water Systems *(joint with GC, H)*

Conveners: **Khalid Osman**, Organization Not Listed; **Sarah Fletcher**, Massachusetts Institute of Technology; **Clara Medina**, Stanford University

1941941 *Access to Water (ACWA) Tool: Integrating Hydrology, Infrastructure and Travel-Time to Map Water-Service Equity:* **K Akpoti**, N M Velpuri, E Mortey, M D Leh, A Owusu, P Thilina-Prabhath, K Mekonnen, L Maduskanka, T Perera, A Seid

1959466 *Addressing Small, Diverse Farms in Satellite-Derived Evapotranspiration (ET) Products:* **E Edwards**, A DeVincentis, A Gal, Q Sara, C Perez, M Yang, J Paz Villegas, M Singh, K Knipper, R Dahlquist-Willard, T Magney, M A Nocco

1960514 *Advancing Equity and Justice in Water Systems through Science, Engagement, and Education: Insights from California:* **J Medellin-Azuara**

1979486 *Affordability, Policy, and Risk Perception: Simulating Household Insurance Uptake Decisions Under Non-Stationary Clustered Regional Flooding:* **S Sayasemawong**, A Nayak, U Lall

1914007 *Analysis at the community water system service level reveals that exposure to Safe Drinking Water Act violations is shaped by intersectional inequalities across communities.:* **F Alvarez-Carrascal**, J M Gilligan, Y J McDonald, C Evans

1884655 *Before and After Piped Water Expansion: Water Use Patterns and Trust in Water and Political Institutions:* **A Cooperman**, M Muñoz Fuerte, J Doss-Gollin, M Mendez Alvarado, A S Mayer

251591
Your Newsletter: Does it work? *(joint with ED)*

Conveners: **Cheryl Manning**, Albert Einstein Distinguished Educator Fellowship Program; **Gina Fiorile Desranleau**, Cooperative Institute for Research in Environmental Sciences; **Julia Masterman**, Consortium of Universities for the Advancement of Hydrologic Science, Inc.

260022
Science and Society Student and Early Career GeoBurst Session

Conveners: **Shenyue Jia**, Miami University Oxford; **Julian Reyes**, Bureau of Land Management

1965979 *Co-Designing Survey Tools to Reflect Community Values in Equitable Infrastructure Planning:* **C Medina**, A Cardenas, E White Jr, K Osman

1854407 *Equitable Stormwater Pollution Management for the State of Maryland: A Hotspot and Vulnerability-Based Prioritization Framework:* **M Ketabchy**

1993221 *Extending the Bill, Not Reducing the Burden: A Comparison of 226 Water Utilities Assistance Programs in the United States (2016-2025):* **K Ward**, L Gleason

1978715 *Fragmented Governance and Social Vulnerability in California's Water System:* **A Gomez-Cervantes**, K Dobbin, A Escriva-Bou

1955681 *From Congress to Disadvantaged Communities: An Analysis of Federal Water Infrastructure Investments Distributed to Alabama through State Revolving Funds:* **V Miller**, L Christian, M Elliott, C Lowry, J Maxcy-Brown

1931525 *From Source to Tap: Network mapping to improve drought resiliency and response for small water systems:* **K Dobbin**, J L Rempel, A Zamora-Olivares, M Cohen, A Gomez-Cervantes, B Reade Malagueno

1982453 *On the Necessity of Tap Water Education Through Data So That No One Drops Out:* **L Josset**, A Genao, A Peterson, A Smith, D Polanco

1983329 *Revealing variations in household tap water quality across space and time with implications for tap water distrust and bottled water reliance:* **A Hastie**, K Osman

1873958 *Scenario-Based Assessment of Welfare Losses from Urban Water Shortages in California's Central Valley:* **Y Cai**, J Medellin-Azuara, A Escriva-Bou, E Porse, K Dobbin, J M Gilbert

1996297 *Urban Transformations to Address Stormwater Flooding: Navigating Governance Gaps and Prioritizing Environmental Justice:* **S Hughes**, B Kerkez

1892901 *Adapting Outreach: Lessons from a Decade of CUAHSI's Community Newsletter:* **L Mucciacito**

1926687 *Good Communication: It's Not About You:* **R Ruiz**

1861109 *The Meaning of "Success": Three Newsletters, Three Lessons:* **A Cassel**

1921915 *Using Newsletters to Reach Stakeholders in an Educational Youth Outreach Program:* **E Cote**

1987295 *Environmental Convergence in Subnational Emissions Intensity: Integrating VIIRS Nighttime Lights Satellite Imagery and GHG in West Africa:* **J A Niangue**

1892570 *Mapping the Decriminalization of Street Vending: A Spatiotemporal Analysis of Arrest Trends and the Impact of Community-Led Advocacy in Los Angeles:* **A Maybank**, Y We, J Marlon, L A Hidalgo

1863676 *Utilizing Ants to Mitigate MSW Landfill-Generated Methane Production through Novel Aerobic Digester System for Anthropogenic Food Waste Decomposition:* **A Nagendra**

UNION SESSIONS

251188
Advancing Toward More Sustainable and Resilient Mineral Supplies: Bridging Earth, Data, and Social Sciences

Conveners: **David Yin**, Stanford University; **Mansur Arief**, Stanford University; **Sulgiye Park**, Union of Concerned Scientists; **Rachel Hampton**, KoBold Metals; **Sofia Mantilla Salas**, Stanford University

2003324 *A Geophysical–Statistical Framework for Targeting Copper Mineralization in Gorob, Namibia:* **R Amusan**

1974549 *Alternative Sources of Critical Minerals: The Good, The Bad, and The Ugly... It's Complicated:* **S J Brownlee**, T Dittrich, P Roy, A Sakr, R Tufail, D Gilkey

1897243 *Assessment of U.S. Nickel and Cobalt Resources Using Material Flow Analysis:* **G Gibbs**, J Kim, E Holley

1989908 *Automated Geophysical Pattern Recognition for Mineral Exploration: Case Study of Carajás, Brazil, Using IOCG Deposits:* **S Mantilla Salas**, P Mejia-Herrera, J Kloeckner, A Asadi, D Z Yin, J Caers

1927811 *Beyond Grade and Tonnage: Sequential AI Planning for Mineral Exploration and Responsible Mining:* **J Kloeckner**, M Arief, S Mantilla Salas, J Caers

1881234 *Copper for Global Development and Electrification:* **A C Simon**, L M Cathles, D Wood

1905953 *Correlating the Impact of Mining-Related Deforestation on Surface Temperature and Precipitation Patterns in the Amazon Rainforest:* **D Qi**, D Z Yin

1873996 *Estimating the Total Value Proposition of Coal Fly Ash and Produced Water:* **K E Fauria**, B Sullivan, J Mackey, N Siefert, A Fritz

1916102 *Future Trajectories of Regional Critical Mineral Supply: A Global Multi-Sectoral Modeling Approach:* **B Yarlagadda**, Y Qiu, K Bhuwalka, G Iyer, P L Patel, N T Graham, A Fawcett

1971704 *How much do we need? Uncertainties in the amount and mix of minerals and metals required for the Energy Transition and implications for mineral exploration, supply chain resilience, and policy development:* **S M Jowitt**

1935831 *Integrating Multi-Source Geospatial Data for Data-Driven Predictive Modeling of Rare Earth Element Concentrations in Penco, Chile:* **A Asadi**, J Caers, D Delgado Rivas, M Carrasco Rojas, J Martin, J Mardonez Eyzaguirre, D Z Yin

1863085 *Integrating Next-Generation Environmental Monitoring and Education Activities for Developing Citizen Science and Improving Global Environmental Literacy:* **H M Wainwright**, H Zhao, A Low, B Deans, C A Eddy-Dilek

1896102 *Land Use Change at Critical Mineral Industrial Parks in Indonesia: Spatial Impacts of National Downstreaming Policies:* **M Schreier**, J Lou, D Parker, C Squire, E Brashear

1869423 *Layer-Resolved Prediction of Subsurface Mineralization from Surface Soil Geochemistry Using Feature Sensitivity and Similarity Learning:* **S Mukherjee**, A Asadi, J Caers, P Mejia-Herrera, F Tomazoni Neto

1920222 *Meeting Future U.S. Mineral Resource Needs: The Role of the U.S. Geological Survey Mineral Resources Program:* **C D Frost**, R Eggert, R J Bodnar, N W Dunbar, S Grocke, R Hampton, D Hollett, C Lazo-Skold, S Masterman, K Olson Hoal, R Smith, D Z Yin

1902754 *MultiGrid simulation: artifact-free stochastic interpolation of flightline data accounting for locally-varying anisotropy:* **J Rines**, J Kloeckner, D Z Yin, J Caers

2004307 *Pakistan's Untapped Critical Minerals: Opportunities, Challenges, and the Race Against Time:* **M Ghani**, R Ullah

1900111 *Potential Reuses of Post-Leached Powder River Basin Fly Ash Solids From a Novel Targeted Critical Mineral Recovery Process:* **C L Hoffman**, M Beebe, C M Cheng, B G Kutchko, M Stuckman, C L Lopano

1973275 *Preliminary Assessment of Phosphogypsum as a Critical Mineral Source in Central Florida:* **J Park**, J Wadhams, D Hendrix, A Hilleary, S Yang, M Sherif, A Szucs, M Humayun

1871289 *Rapid Ethnographic Assessments for Critical Mineral Supply Chain Risk and Resilience Research:* **S Inskeep**, L Supple, S Smolinski, A Carpenter

1869509 *Securing Critical Minerals: A Collaborative Path Forward from a Geoscience Perspective:* **J Sun**, A Jones, D Z Yin

1998433 *The U.S. Geological Survey's Geology, Energy, and Minerals Mission Area: Today's Data for Solving Tomorrow's Resource Challenges:* **T Kirschling**, C F Williams

249392
Amplifying the Value of Earth Science Information for the Society

Conveners: **Yuhan Rao**, North Carolina State University; **Susan Shingledecker**, Earth Science Information Partners; **Lesley Wyborn**, Australian National University

1872871 *Advancing Earth Observation for Gulf Coast Resilience via Twenty Years of Community-Engaged Science:* **N Morrow**

1995893 *Transdisciplinary Approach Toward a Goal of a Socially Acceptable and Sustainable Mineral Industry:* **A Sinha Roy**, K Olson Hoal, C Whitcomb

1954325 *Expanding the Toolbox: Community Insights and Emerging Approaches to Valuing Earth Science Information:* **M Baez Schon, PhD**, C Mancilla, S Cheng, R Gould, G L Galford, M Muldoon, C O'Hara, R Sharp, R Chaplin-Kramer

1969693 *Impactful Datasets in the Earth, Space, and Environmental Sciences: AGU Recognizing the Importance of Research Data on the Dimensions of People, Planet, and Prosperity:* **S Stall**, J Gum

1986654 *The Science Explorer: Amplifying the Societal Value of Earth Science Through Open Information Discovery:* **A Accomazzi**, A Kelbert

1869220 *Using Cloud Computing and generativeAI to show to the value of Earth Science Information:* **C Stoner**

1956468 *Evaluating Online Resource Use and Supporting Tribal Engagement in a NASA-Funded Community College Initiative:* **J Valcarcel**, A Grillo-Hill

249651
Assessment Tools to Understand Impact of Community/University Partnerships

Conveners: **Ada Inman**, EPIC-N; **Gavin Luter**, EPIC-Network

249294
Behind the Breakthrough: Lessons Learned from Experiments in Earth and Space Science
(joint with A, OS, SH, T)

Conveners: **Jesse Bonner**, Lawrence Livermore National Laboratory; **Pnina Miller**, Earthscope Consortium; **Catherine Snelson**, Los Alamos National Laboratory; **Heather Ford**, Yale University

2002987 *A Concept of Using Gravity Models for Geoscience Time Series: Earth's Position in the Solar System:* **B Shmagin**

1896796 *Acquisition of Geophysical Logs and Lessons Learned from the Rock Valley, Nevada Corehole:* **J A Gochenour**, G MacLeod, J Pine, N Downs, C M Snelson

1873212 *Collaborative Virtual Experiments to Advance Research in Geophysical Monitoring Systems:* **K M Hodgkinson**, E Berg, E M Syracuse, J Carmichael, C J Young, A C Aguiar, R Alfaro-Diaz, J Barno, K K Davenport, S Eras, J Falliner, S Heck, A Price, R Rodd, R Sarahi, B Schrom, R Tafoya, S Teich-McGoldrick

1975073 *Creating, Implementing, and Sustaining a Planetary Science Mission:* **S E Smrekar**, M D Dyar

1922051 *Is Experiment Integration Becoming a Lost Art?:* **C M Snelson**, E Alger, B Dzenitis

1912187 *Opportunities and Challenges of Geophysical Field Experiments:* **M B Magnani**

1861066 *Prioritizing Safety in Geophysical Experiments:* **J Bonner**, K Martin, S Taruru

1968319 *Pushing the boundaries of onshore seismic imaging of magmatic systems at Mount St. Helens and Yellowstone:* **B Schmandt**, E Kiser, J M Farrell, S M Hansen, A Levander, S M Wu, C Duan, F C Lin, R Maguire

1960057 *The Nodal NEST: Imaging the Laurentia-Appalachian suture of northwestern Massachusetts at depth using a high-density nodal seismic transect:* **J R Bourke**, P Karabinos, L E Webb, M D Long, H Sheridan, C Gulick, C Smith

1997565 *Tunnel Vision – Keeping an Open Mind Underground:* **H A Knox**, P Schwering, J Morris, J A Burghardt, C E Strickland, A Churby

1931209 *When Science Lands: Coordinating Safety and Science for the OSIRIS-REx SRC Geophysical Observation Campaign:* **C Carr**, E A Silber, D C Bowman, S Krishnamoorthy

1932933 *Wildlife, Illness, Equipment Malfunction, Flooding, and Adaptive Collaboration during the DRIAR Broadband Seismic Experiment in Uganda:* **A Kabanda**, S van der Lee, F Tugume, J Nyago, L Kabenge, G P Babirye, Y Nseko, B Alonzo

249795
Beyond Silos: Integrating Earth Sciences in the Water-Energy-Food-Health Nexus

Conveners: **Swapan Sahoo**, Equinor US; **Julie Bloxson**, Stephen F. Austin State University; **Yogaraj Banerjee**, Central Michigan University; **Yogaraj Banerjee**, Central Michigan University

1860286 *OneEarth OneHealth: An Ecosystem for Human-Centered Climate Solutions:* **H H Nguyen**, S Lowry

1957922 *Advances in community-driven climate action research:* **K M Cobb**

1972797 *Beyond Discovery; Understanding the challenges and opportunities associated with the increased mineral and metal supply needed for the Energy Transition:* **S M Jowitt**

249036
Building Safe, Supportive and Effective Field Research Teams

Conveners: **Alice Hill**, Cooperative Institute for Research in Environmental Sciences; **Anne Gold**, Cooperative Institute for Research in Environmental Sciences (CIRES); **Mariama Dryák-Vallies**, University of Maine; **Blair Schneider**, University of Kansas

1980931 *Beyond First Aid: Testing a New Approach to Archaeological Fieldwork Safety Training:* **L Norman**

1859304 *Building a Safe and Welcoming Antarctic Research Community: Reflections from the International Thwaites Glacier Collaboration:* **B Sheffield**, L R Henry, M S Karplus, E C Pettit, J Wellner

1856578 *Fostering Belonging and Cultural Change in Cryospheric Science Through Peer-Based Virtual Communities:* **J Z Mejia**, J N Bassis, L A Stearns, L M Miller, M McKenzie

249264
Climate Extremes and Population Mental Health in the Deep South: Lessons from Katrina and Paths to Resilience

Conveners: **Azar Abadi**, University of Alabama at Birmingham; **Dennis Stolle**, American Psychological Association; **Mark Shimamoto**, American Geophysical Union

1966811 *City CoLabs as a Transformative Science to Application Collaboratory:* **D Niyogi**, N Sudharsan, A Leclercq, M Coudert, Z Baumer, H Kamath, H Schmalbach, P Bixler, A Dallmann, T Brooks, H Dashtian, M Singh, A Tiwari, B Neupane

1904411 *From Landscape Change to Planetary Terraformation: Advancing a convergent "Landscape Terraformation science" of how life transforms planets with a multi-scale collaboratory and "digital twin" of Biosphere 2:* **S R Saleska**, R Ferrière, C Román-Palacios, C Impey, P A Troch, K Dontsova, G Makke, J Croissant, S Shao, W J Riley, A Bugaj, H H Bauser, W R Ng, A E Arnold, J Chorover, V Milici, S Duhamel, B Hulin

1850931 *Gear Sharing for Cryosphere Scientists; an Initiative Supported by CryoCommunity and PSECCO:* **M McKenzie**, J Mejia, J N Bassis, L A Stearns, L Miller, M C Dryák-Vallies

1851225 *Research stations as active players in fostering safe and supportive field research: lessons from Alaska's Toolik Field Station:* **H Dunleavy**, S Filippone, A Young, M Kuizenga, B Barnes, M S Bret-Harte

1853631 *STEMSEAS works to create a welcoming environment for up-and-coming seagoing scientists and the marine workforce:* **S K Cooper**, L D White, J C Lewis, S Burrell

1853341 *The University of New Hampshire Research Fieldwork Safety Program: Supporting Physical, Psychological, and Interpersonal Safety in the Field:* **E Burakowski**, K Gladstone, A Glode, C Jones, J Stapleton

1855315 *"Nothing About Us Without Us" - On Upending Status Quo Hierarchies and Safety-by-Exclusion Frameworks, Toward the Creation of Truly Safe Field Programs:* **M J MacFerrin**, E Marin-Spiotta, B Schneider, M Price, L Dove

1858751 *Perspectives on Climate Change and Mental Health Since Hurricane Katrina:* **D Dodgen**

1955857 *Severe Weather Events, Psychological Health, and Resilience from Hurricane Katrina to Present - Experiences and Insights from Community Partnered Research in South Louisiana:* **B Springgate**

251762
Earth Song: Advancing Visualization and Sonification in Geoscience

Conveners: **Zhigang Peng**, Georgia Tech; **Deborah Kilb**, Scripps Institution of Oceanography; **Leif Karlstrom**, Stanford University; **Jessie Saunders**, Caltech; **Phuc Mach**, Georgia Institute of Technology

1928001 *Audifying Earth: Perceptual Tools for Exploring Real-Time and Archival Seismic Data:* **R Alexander II**, L Karlstrom, E V Masongsong

1962165 *Beyond the Visual: Building Interdisciplinary Teams that Harness Sound as a Discovery Tool in Geoscience:* **K Meredith**

1876262 *Earthquake Bangs: Supercomputing Insights into Seismoacoustic Nuisance from an Induced M_L 1.8 Earthquake in Helsinki, Finland:* **A A Gabriel**, G Hillers, L Krenz, S Wolf, M Bader

1903132 *Exploring Data Sonification for Thunderstorm Detection and Characterization:* **M Arul**, I I Bukvic

252461
Expanding Our Scientific Reach: Experiences, lessons learned, and best practices for engaging broader audiences in the doing and benefits of science

Conveners: **Elizabeth Crocker**, American Geophysical Union; **Camille Gaynus**, Black In Marine Science (BIMS); **Tiara Moore**, Black in Marine Science; **Ralinda Wimbush**, Black in Marine Science

1977361 *Co-Creating Resilience: The Space Coast RESCUE Model for Community-University-Municipal Flood Mitigation:* **Q Simpson**, C Hadley, S Lazarus

1899283 *Effect of Locally Managed Marine Areas in increasing mangrove cover in Madagascar:* **A Rabearisoa**

252630
Independent Science: Past, Present and Future Opportunities for Transcending Disruptions

Conveners: **Brenda Ekwurzel**, Union of Concerned Scientists Washington DC; **H. Christopher Frey**, North Carolina State University Raleigh; **Kyle Meng**, University of California Santa Barbara; **Phil Levin**, University of Washington

1879753 *Advancing complex environmental systems science: A roadmap from the NSF Advisory Committee on Environmental Research and Education:* **D E Pataki**, R Pandya, K Jones

1919388 *Improving Scientific Communication using Earthquake Simulations: Insights from A Public Survey:* **J Rekoske**, D L Kilb, L Kuratle, A A Gabriel

1876117 *Listening to the stories of ice and stone: Using soundscapes to capture glacial melt and landscape change:* **M N Koppes**

1924366 *Revealing the Voice of Air Pollution Through Sonification of Particulate Matter:* **C Hutton**, D Donohoue

1978962 *Sonic and Visual Exploration of Spatiotemporal Patterns in Seismicity at Geothermal Reservoirs:* **A Barth**, B K Holtzman, E Beauce

1949811 *Sonic Explorations: From Diamond Volcanoes to Ocean Waves:* **M Russo**, A Santaguida

1938452 *Sonification High-Resolution Tremor Catalogs with Piano Keys:* **Z Peng**, P Mach, X Si, D R Shelly, A Wech, A Kato

1861592 *Sonification of Earth's Microseism Background Signal:* **R C Aster**

1870288 *The Music of Earthquakes in Nature, Research, Education, and Art:* **A J Michael**, S Ross, S Detweiler

1955369 *Expanding Our Reach: Centering Culture and Community in Climate Science through Youth Leadership in Coastal Florida:* **C Hadley**, Q Simpson

1966008 *Ocean Justice AI - A Data Driven Platform for Environmental Justice and Education:* **G BeBe**, T Moore

1951555 *Stories, Data and Action – From Managing Nitrogen to Managing Shorelines Across Global Coastal Communities:* **M A Trotz**, K A Hinds, T Moore, D M Cwiertny, R Zarger, M Burke, H Van Dyke, K Moore

1901553 *The BIMS Institute: Shifting and Strengthening Science:* **C Gaynus**

1900367 *"Holistic Support of Undergraduate Scientists on the Doctoral Pathway: Collaborative Mentoring and Science Education":* **K Thiero**, K Cobian, L McIntire, R N Ulrich, PhD Candidate, C R Whitcraft, R Eagle, A E Tripati, K Kamer

1896626 *Designing for Resilience in Higher Education: Building Flexible and Collaborative Organizational Structures for Sustaining Coastal Resilience Research, Engagement, and Education in the Chesapeake Bay, Virginia:* **J Whitehead**, C Considine

1848051 *How Do We Ensure Independent Science Advice Informs Federal Policies and Benefits the Public Good in Times of Disruption?:* **M Finucane**

1927311 *Meeting the Moment: How AGU is Supporting and Mobilizing the Scientific Community in the Face of Existential Threats to U.S. Science:* **A Shultz**

1968181 *Translating Independent Science into Local Action: HBCUs as Anchors of Innovation, Community Partnership, and Climate Resilience:* **J G Hunter**

248133
Lights! Camera! Traction!How Film and Television Can Shape and Empower the Climate Action Narrative (cosponsored by AMS: American Meteorological Society,GSA: Geological Society of America)

Conveners: **Joshua Weinberg**, American Geophysical Union; **Heather Goss**, American Geophysical Union

253095
NASA-ISRO SAR Mission Status and Early Results

Conveners: **Paul Rosen**, NASA Jet Propulsion Laboratory; **Marco Lavalle**, Jet Propulsion Laboratory; **Gerald Bawden**, NASA Headquarters

1914561 *Capacity Building and Community Engagement Efforts in Support of NISAR Mission Science:* **E Podest**, K C McDonald, R A Boger, R Low

1923505 *Constraining Hydrological Signatures Using C- and L-band InSAR in the Age of NISAR:* **M Zebker**

1850145 *Early Results for the Cryosphere from NISAR's L-band Instrument:* **I R Joughin**, V Brancato, R R Forster, B Holt, S Jeong, C M Oaida Taglialatela, E J Rignot, B Scheuchl, S Herreid

1856881 *NISAR Commissioning in Action: Early Results and Performance Evaluation of L-band Level-0 to Level-2 Science Products:* **H Fattahi**, B Hawkins, H Ghaemi, C Veeramachaneni, V Brancato, G H X Shiroma, R Burns, G Gunter, B Huang, X Huang, T Hudson, S Jeong, J Jung, S C Niemoeller, J Shimada, M Lavalle, B Chapman, C Cheng, S J Shaffer, P Rosen

251570
Navigating Broader Impacts in Current Political Climate

Conveners: **Benjamin Nault**, University of California Berkeley; **Dylan Blaskey**, University of South Carolina; **Asa Rennermalm**, Rutgers University New Brunswick; **Daniel Myers**, ; **Mohammad Afzal Shadab**, University of Texas at Austin

1904944 *Assessing Challenges for Polar Early Career Scientists During Science Policy Upheaval:* **F Ishraque**, M A Shadab, O Lauter, N Narayanan, K Shionalyn, M N Schaberg, Z Labe, S S Gaikwad, M Nicewonger, R Narayanan

1862845 *What is the Value of Scientific Integrity Policies for Transcending Disruptions?:* **F Grifo**

1894322 *Cinematic–Field learning ecosystems for freshwater education in and around the Great Lakes basin: Full-Length Documentaries, Place-Based Inquiry, and adaptive assessment for environmental and indigenous Literacy:* **M Dragovich**

1967642 *Impact-based and Action-driven Documentary Short Film Storytelling for Conservation, Science Communication, and Climate:* **K Perrault**

1937039 *NISAR Ecosystems: Science performance and early results:* **P Siqueira**, J D Armston, B Chapman, A Christensen, K Cushman, A Das, B Downs, R Dubayah, J Kellndorfer, K C McDonald, J Martinez, C Patnaik, D S Saatchi

1852288 *NISAR Soil Moisture Product: First Results:* **R B Lohman**, R Bindlish, N N Das, S Kim, X Huang, J T Johnson, P Lal, J Park, J Judge, D K Pandey

1866288 *NISAR: Advancing our knowledge of forest ecosystem dynamics and natural resource management:* **A Whitehurst**, R Pavlick, G W Bawden, M Lavalle, P A Rosen, M A Hofton

1868172 *Solid Earth Science from the NISAR Mission: First Fringes:* **M Simons**, R Agrawal, A A Borsa, D P Bekaert, V Brancato, J Chen, A Donnellan, H Fattahi, E J Fielding, M Govorcin, E Havazli, M C M Jasir, C Jones, J Jung, R B Lohman, F J Meyer, M E Pritchard, P Rosen, K M Sreejith, E Tymofyeyeva, H A Zebker, R W Zinke

1898070 *Engaged research as a means to improve broader impact of geosciences:* **K A Jagannathan**

1924514 *Reflections from Early Career Researchers on reframing research language for impactful and relevant Broader Impacts statements:* **C Mayernik**, M M Chikomo, K Garvey, A N Price, D T Myers

1974256 *Science for People: Building Collaborative Communities and Resilient Science Communication:* **L Turner**

1983221 *Staying on course in the storm: Navigating upheavals in support systems for accessible and inclusive science.:* **A M Marshall**

252717
Public Data, National Priorities: Unlocking Value with Landsat

Conveners: **Crista Straub**, Organization Not Listed; **Zhuoting Wu**, USGS National Land Imaging Program; **Christopher Neigh**, NASA Goddard Space Flight Center; **Kimberly Casey**, USGS Reston

1986668 *Analyzing Current and Future Satellite Architecture Performance for Land Imaging User Needs Through Multi-Attribute Utility Evaluation:* **S N N Ramaseri Chandra**, J Rowe, E Wengert, K Casey, D W Opstal, I Garthwaite

1915585 *Bridging Data and Decision: Making Landsat Accessible for Public and Commercial GIS:* **S Breyer**

1963264 *Bringing Remote Sensing Down to Earth: The U.S. Department of the Interior Remote Sensing Report:* **N Taylor**, M A Bouchard, P Connot, T Adamson, I Garthwaite, D W Opstal

1921989 *Enabling Earth Observation Applications Through use of Public and Commercial Data:* **J O'Neil**

1970477 *From Data to Decisions: Leveraging the Power of Remote Sensing User Needs for Earth Observation Programmatic and Mission Directions:* **K Casey**, D W Opstal, C Straub, I Garthwaite, E Wengert, J Rowe, S N N Ramaseri Chandra

1873172 *From Fields to Floods: How the Unflinching Eyes of the National Land Imaging Program and Landsat Power Real-World Solutions:* **D W Opstal**

250087
Societal Impact of Earth and Space Sciences: Past Achievements and Future Opportunities

(cosponsored by AOGS: Asia Oceania Geosciences Society,CGS: Chinese Geophysical Society,EGU: European Geosciences Union,JpGU: Japan Geoscience Union)

Conveners: **Thushara Gunda**, Vanderbilt University; **Kripa Akila Jagannathan**, Lawrence Berkeley National Laboratory, Climate and Ecosystem Sciences Division; **Asa Rennermalm**, Rutgers University New Brunswick; **Bianca Corpuz**, Johns Hopkins University

1861719 *Big Discoveries and Future Prospects from Space Physics and Aeronomy:* **K Reeves**, M W Liemohn

1856696 *Building partnerships in Science and Society:* **K A Reed**, K A Jagannathan, T Gunda

1995453 *Landsat 8, 9, and Next: Pole-Vaulting the Cryosphere to New Heights:* **T A Scambos**, M A Fahnestock, T Snow, C A Shuman, A S Gardner

1970114 *Landsat and its Role in Integrated Land Monitoring:* **M Hansen**

1932967 *Landsat for a resilient and thriving economy:* **N Pahlevan**

1924316 *Landsat Nighttime Thermal Infrared Data for Characterizing Thermal Areas in Yellowstone:* **R G Vaughan**, J Hungerford

1987994 *Leveraging Landsat 8 and 9 for Collecting Spectral Signatures of Non-resolved Resident Space Objects:* **M Gartley**

1927426 *Maximizing Public Data Impact: Operational and User Community Gains from Landsat Next's Spectral Expansion:* **I Garthwaite**, K Casey

1920568 *New Landsat Next bands are essential for drought, fire, and agricultural applications:* **P E Dennison**, M Campbell, B T Lamb, W D Hively

1983308 *Next generation satellites support moisture correction in mapping agricultural fractional cover:* **W D Hively**

1952496 *Pathfinding the steps to ensure global analysis ready consistent reflectance from the Landsat MSS to Landsat Next era:* **D Roy**, H Zhang, L Yan

1966369 *Physics-Informed Machine Learning for Cloud Detection:* **S Qiu**, Z Zhu, X Yang, J Ju, Q Zhou, C S R Neigh

1880322 *Thermal Environments along the Northern Gulf Coast (2013-2024) from Landsat 8 and 9 terrestrial radiation and ground station observations:* **G A Carter**

1960957 *From Earthquakes to Whales, Volcanoes to Clean Energy, and Beyond, Seismology is Benefiting Society in More Ways Than Most of us Know:* **R E Abercrombie**, E Garnero

1874906 *Planetary Science and Society – 60 Years of Discovery:* **W M Calvin**, I Daubar

1965952 *Real-world Impact of Research from the AGU Atmospheric Science Section:* **A C Clement**

1955121 *Scientific Advances in the Cryosphere Inform the Broad Societal Reach of Snow, Ice, and Permafrost Decline:* **M Skiles**, A K Rennermalm

1982074 *Strengthening the STEM Workforce and the Scientific Literacy of Society through Evidence-based Education:* **L Lukes**

1916958 *Volcanology, Geochemistry, and Petrology – Physical and Chemical Constraints on the Structure of the Earth.:* **T O Rooney**, M Edmonds

249703
Strengthening STEM Learning: Creating Impact through Collaborative Programs

Conveners: **Anne Holland**, Space Science Institute Boulder; **Joelle LeMer**, Northern Arizona University

1984862 *Fostering Science - Impact of a science camps program designed for youth in the foster care system:* **K Spellman**, C P H Mulder, J Eklof, T Villano, E B Sparrow, S Decina, K Kornhauser, A Larson

1926118 *Informal Learning, Outreach, and Participatory Science via the "Heliophysics Audified: Resonances in Plasmas Project":* **X Shi**, M Hartinger, M O Archer, E V Masongsong, R Alexander, J Laca, A Abe Pacini, J B Harold, S Coyle, K Collins, PhD, R Candey, L W Blum, T Costello, L Williams

1989037 *Insights to a STEM Learning Ecosystem: Arctic and Earth SIGNs:* **E B Sparrow**, K Spellman, M J Chase, C Buffington, G J Fochesatto, T Brannan, E Sousa, B Murray, J D Shaw, S Roach, C P Dierenfield, A Larson, D Allen, J Danielson, T Saito

1953646 *NASA@ My Library: Seventeen Thousand Opportunities for Inspiration:* **J B Harold**

1958019 *NCCN: Broadening the Impact of NASA Science Through Partnerships and Experiences:* **S Steel**, P K Harman, J Valcarcel, D Richardson, C Clark, A Grillo-Hill, I C Weaver

1952092 *STEM Immersion and Virtual Field Trips to Astronomical Observatories: Bringing Authentic Science Learning Experiences to Teachers, Students, and the Public.:* **D E Backman**, C Clark, P K Harman, A J J Tamer, A D Anbar, C Mead

1899379 *Voices from the Classroom: Teacher Perspectives on GLOBE Mission EARTH's Impact on STEM Learning and Science Community- Building.:* **N E Adaktylou**, S Darche, M A Wojton, S Feit, D Padgett, M Enwemaya, J Taylor, P Garik, K P Czajkowski

250779
The Grand Challenge of Sustainable Aviation: Uniting Atmospheric, Aerospace, and Environmental Sciences

Conveners: **Holly Mayton**, John Deere; **Sebastian Eastham**, Harvard University

247432
Understanding the Linkage Between Geosciences and Biothreats for Enhancing National and Global Security

Conveners: **Bailey Magers**, Organization Not Listed; **Rita Colwell**, University of Maryland; **Jesse Bell**, University of Nebraska Medical Center

1904551 *Challenges and Progress in Hydrological Modeling: Earth Observations and AI/ML:* **V Lakshmi**

1932529 *Cholera, Climate, and Conflict: Anticipatory Action Through Remote Sensing and Engineering Diplomacy:* **S Islam**

1961552 *The Linkage between Geosciences and Biothreats for Enhancing National and Global Security: The View from the Policy Side:* **J Glasser**

1985712 *Turning Geoscience into Decisions: Case Studies on the Evolution of Environmental Intelligence Decision Support:* **R Harris**

249641
Unlocking Broader Impacts: Finding & Keeping Community Partners to Advance Local Sustainability Goals

Conveners: **Ada Inman**, EPIC-N; **Gavin Luter**, EPIC-Network

249552

Water, Climate and Infectious Microbes in the Environment (cosponsored by ASM: American Society for Microbiology)

Conveners: **Antarpreet Jutla**, University of Florida; **Rachel Burckhardt**, ASM; **Erin Lipp**, The University of Georiga; **Bailey Magers**, Organization Not Listed

1994054 *Climate Change Impacts on Human Health – An NSF Perspective:* **B Ransom**

1866027 *Environmental Drivers are Reshaping the Global Malaria Econiche:* **T V Loboda**, D Chen, V Shevade

252323

We Need a Hero! We Need Effective Communication with the Public! (cosponsored by NAGT: National Association of Geoscience Teachers)

Conveners: **Adam Ianno**, Organization Not Listed; **Kyle Rybacki**, Pennsylvania Geological Survey

1882833 *Connecting Geoscience with the Public for the International Geological Congress 2028 (Calgary, Alberta, Canada):* **K J E Boggs**, A Dubois Gafar, G Dolphin, L Navarro, S Booker, J Demorcy, D W S Eaton, D Lebel, K Knudson, J Daugulis, R Carlisle, L Donnelly, G Wach

249480

Where Science Connects Us: The Role of Research Parks and Innovation Districts in Building Communities of Innovation Based on Earth and Space Sciences

Conveners: **Brian Darmody**, Association of University Research Parks

1918128 *Integrating Geosciences and Healthcare to Address Climate-Sensitive Coastal Pathogens and Toxins:* **F Revere**

1870670 *Offering Novel Environmental Health Perspectives through NASA Earth Science:* **J Haynes**, H Chapman, L M Judd

1961512 *The Role of Policy in Harmonizing Water, Climate, and Infectious Microbes Actors and Work Streams:* **J Glasser**

1913706 *Weather-driven Waterborne Infectious Diseases: Detection, Prediction, and Prevention in the Twenty-first Century:* **R R Colwell**

1848870 *From Field to Film: Using Vlogs and Social Media to Reconnect Students with Earth Science:* **H Grant**

1858637 *Geo-STEM Learning Ecosystems: A Community-Centered Approach to Rebuilding Trust and Engagement in Geoscience:* **C L B Manning, PhD**

1947429 *Increasing Engagement and Enrollment in Geoscience Through Strategic and Collaborative Social Media Outreach:* **R Phillips**, K Ryker, C Larsen, C Fetter

2001131 *Underfoot: Soil Exhibits in Public Spaces:* **R Butalia**

1895709 *You Need A Sidekick: How Community Colleges Bridge the Gap between Academia, Industry, and the Public:* **S Turner**