

# AGU Fall Meeting 2023

## CZNet Presentation Schedule - CZNet Booth Located at #547

### Monday, December 11th

Session Type	Cluster	Date	Start Time	End Time	Property	Room	Session Number	Title	People
Poster	Bedrock	12/11/2023	8:30AM	12:50PM	Moscone Center South	Poster Hall A-C - South	ED11B-0763	Connections in the Critical Zone: Bringing Cutting-Edge Science to K-12 Educators	Lily Eligator, Virginia Polytechnic Institute and State University, Jorden L Hayes, Dickinson College, Natalie Cist, Dickinson College, Rachel Uecker, Clemson University, Russell Callahan, University of Connecticut
Poster	Big Data	12/11/2023	8:30AM	12:50PM	Moscone Center South	Poster Hall A-C - South	B11F-1857	Exploring the Importance of Capturing Shoulder Seasons Dynamics in Arctic Headwaters: Are we Giving the Arctic the Cold Shoulder? (Invited)	Arial Shogren, University of Alabama, Jay P Zarnetske, Michigan State University, Abigail Rec, University of Vermont, Amelia Grose, Michigan State University, Jansen Nipko, Brigham Young University, Jonathan A O'Donnell, National Park Service Anchorage, William B Bowden, University of Vermont, Benjamin W Abbott, Brigham Young University
Poster	Big Data	12/11/2023	8:30AM	12:50PM	Moscone Center South	Poster Hall A-C - South	H11J	Catchment and Critical Zone Science: Understanding Ecosystems Through Monitoring, Analysis, and Experimentation	James B Shanley, United States Geological Survey
Poster	Big Data	12/11/2023	8:30AM	12:50PM	Moscone Center South	Poster Hall A-C - South	H11J-1410	Historic High Summer Streamflow in Vermont and the DOM Response	James B Shanley, United States Geological Survey, Serena Matt, United States Geological Survey, Bryn Stewart, Pennsylvania State University Main Campus, Addie Hedges, United States Geological Survey, Li Li, Pennsylvania State University Main Campus
Poster	Big Data	12/11/2023	8:30AM	12:50PM	Moscone Center South	Poster Hall A-C - South	H11J-1419	Modeling the Co-Benefits of Mechanical Thinning on Forest Structure, Fire Effects, Biodiversity, and Hydrological Refugia	Louis Graup, University of California Santa Barbara, Christina (Naomi) Tague, University of California Santa Barbara, Adrian Adam Harpold, University of Nevada Reno, Patricia Manley, Pacific Southwest Research Station, Sebastian Wolf, ETH Swiss Federal Institute of Technology Zurich, James W Kirchner, ETH Swiss Federal Institute of Technology Zurich
Poster	CZHub Drylands Dynamic Water	12/11/2023	8:30AM	12:50PM	Moscone Center South	Poster Hall A-C - South	H11I-1386	Coupled Water and Heat Energy Transport in the Soil-Plant-Atmosphere Continuum under a Semi-Arid Climate of West Texas	Xinying Ling, Texas Tech University, Sanjit Deb, Texas Tech University, Juske Horita, Texas Tech University
Poster	Dust^2	12/11/2023	8:30AM	12:50PM	Moscone Center South	Poster Hall A-C - South	H11J-1413	Transport of Dissolved and Particulate Trace Elements during Snowmelt Runoff in a Montane Watershed, Provo River, Utah, USA	Kendra Caskey, Brigham Young University, Gregory T Carling, Brigham Young University, Alyssa Thompson, Brigham Young University, Kevin Rey, Brigham Young University, Barry Bickmore, Brigham Young University, Landon Burgener, Brigham Young University, Diego P Fernandez, University of Utah
Poster	Dust^2	12/11/2023	8:30AM	12:50PM	Moscone Center, South	Poster Hall A-C - South	H11J-1419	Modeling the Co-Benefits of Mechanical Thinning on Forest Structure, Fire Effects, Biodiversity, and Hydrological Refugia	Louis Graup, University of California Santa Barbara, Christina (Naomi) Tague, University of California Santa Barbara, Adrian Adam Harpold, University of Nevada Reno, Patricia Manley, Pacific Southwest Research Station, Sebastian Wolf, ETH Swiss Federal Institute of Technology Zurich, James W Kirchner, ETH Swiss Federal Institute of Technology Zurich
Oral	Big Data	12/11/2023	2:10PM	3:40PM	Moscone Center West, Level 3	3014	H13C	Catchment and Critical Zone Science: Understanding Ecosystems Through Monitoring, Analysis, and Experimentation	James B Shanley, United States Geological Survey
Oral	Big Data	12/11/2023	2:20PM	2:30PM	Moscone Center West, Level 3	3011	H13A-02	Calculation of Burn Severity Based on Physics of Wildfires	Hamid Vahdat Aboueshagh, Desert Research Institute, Sean McKenna, Desert Research Institute, Hans Moosmuller, Desert Research Institute, Gabrielle Boisrame, Desert Research Institute Las Vegas, Brad Sion
Oral	Dust^2	12/11/2023	2:34PM	2:44PM	Moscone Center, West Level 2	2004	C13A-03	Biogeochemical Effects of Permafrost Degradation across Alaska from Prudhoe Bay to Valdez	Raymond Mark Lee, University of Wisconsin, Superior, Gregory T Carling, Brigham Young University, Janice Brahney, Utah State University, Neal J Pastick, USGS Earth Resources Observation and Science (EROS) Center Sioux Falls, Jonathan A O'Donnell, National Park Service Anchorage, Jansen Nipko, Brigham Young University, Paden Allsup, Brigham Young University, Michelle A Baker, Utah State University, Stephanie A Ewing, Montana State University, Benjamin Abbott, Brigham Young University
Oral	Bedrock	12/11/2023	3:10PM	3:25PM	Moscone Center South, Level 3	301-302	INV13C	The Coevolution of Hydrologic, Geomorphic, and Ecologic Systems on Earth, and Other Worlds (Invited)	Ciaran J Harman, Johns Hopkins University
Oral	Big Data	12/11/2023	4:00PM	5:30PM	Moscone Center West, Level 3	3014	H14D	Catchment and Critical Zone Science: Understanding Ecosystems Through Monitoring, Analysis, and Experimentation	James B Shanley, United States Geological Survey

Oral	Hub	12/11/2023	5:20PM	5:30PM	Moscone Center West, Level 3	3014	H14D-09	CZNet: the United States Critical Zone Collaborative Network	Elizabeth W Boyer, Penn State University, Emma L Aronson, University of California Riverside, Steve Holbrook, Virginia Tech, Praveen Kumar, University of Illinois at Urbana Champaign, Holly A Michael, University of Delaware, Julia N Perdrial, University of Vermont, Claire Welty, Center for Urban Environmental Research, Holly R Barnard, University of Colorado Boulder, Lixin Jin, University of Texas at El Paso, Deanna McCay, Consortium of Universities for the Advancement of Hydrologic Science, Inc., Jeffrey S Munroe, Middlebury College, Jordan S Read, Consortium of Universities for the Advancement of Hydrologic Science, Inc.
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## Tuesday, December 12th

Session Type	Cluster	Date	Start Time	End Time	Property	Room	Session Number	Title	People
Poster	Big Data	12/12/2023	8:30AM	12:50PM	Moscone Center South	Poster Hall A-C, South	H21Y-1676	Predicting the Hydrological Benefits and Risks of Landscape-Scale Forest Thinning Across Watershed Scales	Elijah Boardman, University of Nevada Reno, Adrian Adam Harpold, University of Nevada Reno, Zhuoran Duan, Pacific Northwest National Laboratory, Mark S Wigmosta, Pacific Northwest National Laboratory, Samuel W Flake, North Carolina State University
Poster	Drylands	12/12/2023	8:30AM	12:50PM	Moscone Center South	Poster Hall A-C, South	ED21D-0775	Phosphorus Availability Shifts across a Desert Soil Chronosequence	Raleigh Lariza Avila, El Paso Community College, Kristopher Torres, University of Texas at El Paso, Dylan Stover, University of Texas at El Paso, Jennie McLaren, University of Texas at El Paso
Poster	Dust^2	12/12/2023	8:30AM	12:50PM	Moscone Center South	Poster Hall A-C, South	ED21D-0759	Undergraduate Earth, Atmospheric, Ocean, and Space Science Research and Outreach Posters	Anika Knight, EarthScope Consortium, Mark Lord, Western Carolina University, Bonnie Murray, NASA Langley Research Center, Kelsey Russo-Nixon, EarthScope Consortium, Anika Knight, Medaille College, Kelsey Russo-Nixon, UNAVCO, Inc.
Poster	Dust^2	12/12/2023	8:30AM	12:50PM	Moscone Center South	Poster Hall A-C, South	GC21G-0989	Analyses of Emission Sectors in the Salt Lake Valley using NOx and CO2	Haley Humble, University of Utah, John C Lin, University of Utah, Derek V Mallia, University of Utah, Maria R Garcia, University of Utah, Megan Ostlie, University of Utah, Nicholas S Hofmann, University of Utah
Poster	Hub	12/12/2023	8:30AM	12:50PM	Moscone Center South	Poster Hall A-C, South	H21M-1523	Exploring Agricultural Sustainability in the Critical Zone: Environmental and Economic Conditions in the Chesapeake Bay Watershed	Sadikshya Sharma, Penn State University, David Able, Penn State University, Elizabeth Boyer, Penn State University
Oral	Big Data	12/12/2023	8:40AM	8:50AM	Moscone Center West, Level 3	3002	H21B-02	Exploring Patterns and Processes of Critical Zone (CZ) Multidimensional Resilience Across the CZ Collaborative Network	Julia N Perdrial, University of Vermont, Benjamin Abbott, Brigham Young University, Gabrielle Boisrame, Desert Research Institute Las Vegas, Lixin Jin, University of Texas at El Paso, Camden Hatley, Kansas State University, Dawson Fairbanks, University of Arizona, Elizabeth W Boyer, Penn State University, Lin Ma, University of Texas, Deidre Wheaton, Jackson State University, Li Li, Pennsylvania State University, Nathaniel Spicer, University of Maryland, Dustin W Kincaid, University of Vermont, Lauren Lowman, Wake Forest University, Erin Cedar Seybold, University of Kansas, Holly A Michael, University of Delaware, Elizabeth Marie Andrews, Colorado School of Mines, Ashlee Laura Denton Dere, University of Nebraska at Omaha, James B Shanley, United States Geological Survey, Niara Hicks, University of Vermont, Bren Cable, University of Vermont, Sharon A Billings, University of Kansas
Oral	Coastal	12/12/2023	9:45AM	9:55AM	Moscone Center, West Level 2	2003	OS21A-08	Effect of Saltwater Marsh Migration on Soil Microbial Respiration as a Result of Sea Level Rise on the Delmarva Peninsula	Katherine Raiano, American University, Nathaniel Spicer, University of Maryland, Katherine Lynn Tully, Earth Institute, Columbia University, Brian Moyer, University of Maryland College Park
Oral	Drylands	12/12/2023	10:35AM	10:45AM	Moscone Center West, Level 3	3002	H22E	What Drives Trees Nuts? A Multi-temporal, Multi-scale and Multi-disciplinary Look at Stress Sources of Water-subsidized Trees in Dryland Agroecosystems of North America and their impact on the Regional Water Use and Conservation.	Hugo Alberto Gutiérrez-Jurado, University of Texas at El Paso, Jesus Manuel Ochoa-Rivero, Instituto Nacional de Investigaciones Forestales, Agrícolas y Pecuarias (INIFAP), Orlando Ramirez-Valle, University of Texas at El Paso/INIFAP, Maria Carmen Delgado-Gardea, Autonomous University of Chihuahua, Maria del Rocio Infante-Ramirez, Autonomous University of Chihuahua, Luis Ubaldo Castruita-Esparza, Autonomous University of Chihuahua, Noe Chavez-Sanchez, Instituto Nacional de Investigaciones Forestales Agrícolas y Pecuarias (INIFAP), Lixin Jin, University of Texas at El Paso, Lin Ma, University of Texas, Mark Engle, University of Texas at El Paso

Oral	Big Data	12/12/2023	10:52AM	11:02AM	Moscone Center West, Level 3	3008	B22B-04	Hydrology is the Dominant Driver of Dissolved Carbon Production and Export in a Water-Limited Mountain Catchment	Devon Kerins, Pennsylvania State University, Kayalvishi Sadayappan, Pennsylvania State University, Pamela L Sullivan, Oregon State University, Rosemary W H Carroll, Desert Research Institute Reno, Matthias Sprenger, Lawrence Berkeley National Laboratory, Wenming Dong, Lawrence Berkeley National Lab, Wei Zhi, Pennsylvania State University, Kenneth Hurst Williams, Lawrence Berkeley National Laboratory, Holly R Barnard, University of Colorado Boulder, Julia N Perdrial, University of Vermont, Li Li, Pennsylvania State University
Oral	Big Data	12/12/2023	11:22AM	11:32AM	Moscone Center West, Level 3	3008	B22B-07	Illuminating the "Invisible": Carbon Transformation and Transport in the Deeper Subsurface (Invited)	Li Li, Pennsylvania State University, Bryn Stewart, Pennsylvania State University, Devon Kerins, Pennsylvania State University, Hang Wen, Pennsylvania State University, Julia N Perdrial, University of Vermont, Pamela L Sullivan, Oregon State University, Kenneth Hurst Williams, Lawrence Berkeley National Laboratory, James B Shanley, United States Geological Survey, Holly R Barnard, University of Colorado Boulder
Poster	Drylands	12/12/2023	2:10PM	6:30PM	Moscone Center South	Poster Hall A-C, South	H23P-1789	Investigating Physiological Responses of Pecan Trees (Carya illinoensis) to Water Sources and Soil Properties Under Heat Wave Conditions in Agroecosystems of the Chihuahuan Desert	Jesus Manuel Ochoa-Rivero, The University of Texas at El Paso, Hugo Alberto Gutiérrez-Jurado, University of Texas at El Paso, Alan Alvarez-Holguin, Autonomous University of Chihuahua, Linda Citlali Noperi-Mosqueda, Autonomous University of Chihuahua, Jesus Antonio Olivas-Rodríguez, Autonomous University of Chihuahua, Mark Engle, University of Texas at El Paso, Federico Villarreal-Guerrero, Autonomous University of Chihuahua, Omar Castor Ponce-García, Instituto Nacional de Investigaciones Forestales, Agrícolas y Pecuarias (INIFAP), Orlando Ramirez-Valle, Instituto Nacional de Investigaciones Forestales, Agrícolas y Pecuarias (INIFAP), Lixin Jin, University of Texas at El Paso, Lin Ma, The University of Texas at El Paso
Poster	Bedrock	12/12/2023	2:10PM	6:30PM	Moscone Center South	Poster Hall A-C, South	EP23F-1999	Links Between Sheet Jointing and Weathering in Saprolite and Weathered Rock Revealed by Ground Penetrating Radar and Seismic Refraction Surveys	Brady Flinchum, Clemson University, Jennifer Briglio, Clemson University, Clifford S Riebe, University of Wyoming, Russell Callahan, University of Connecticut, Leonard S Sklar, Concordia University, Steve Holbrook, Virginia Tech
Oral	Bedrock	12/12/2023	2:25PM	2:35PM	Moscone Center West, Level 3	3012	H23D	Landscape-scale Observations of Hydrologic Processes Using Geophysics, Streamflow Variability, and Age Tracers, and Theoretical Frameworks for Integrating Them (Invited)	Ciaran J Harman, Johns Hopkins University
Oral	Big Data	12/12/2023	3:05PM	3:15PM	Moscone Center West, Level 3	3020	H23G-06	Assessing the Transferability of Runoff Generation Paradigms to Permafrost Catchments in the Arctic	Amelia Grose, Michigan State University, Jay P Zarnetske, Michigan State University, Ariel J Shogren, University of Alabama, Benjamin W Abbott, Brigham Young University, William B Bowden, University of Vermont, Jonathan A O'Donnell, National Park Service Anchorage, Jesus D Gomez-Velez, Vanderbilt University

### Wednesday, December 13th

Session Type	Cluster	Date	Start Time	End Time	Property	Room	Session Number	Title	People
Poster	Big Data	12/13/2023	8:30AM	12:50PM	Moscone Center, South	Poster Hall A-C, South	B31M-2244	Fire Return Intervals Explain Different Vegetation Cover Responses to Wildfire Restoration in Two Sierra Nevada Basins	Octavia Crompton, U.S. Department of Agriculture, Agricultural Research Service, Sally E Thompson, University of Western Australia, Ekaterina Rakhmatulina, University of California Berkeley, Scott Stephens, University of California Berkeley, Gabrielle Boisrime, Desert Research Institute Las Vegas
Poster	Big Data	12/13/2023	8:30AM	12:50PM	Moscone Center, South	Poster Hall A-C, South	H31CC-1659	Leveraging High Resolution Sensor Data and Large-Scale Physical Models to Monitor and Forecast Critical Water Quality Parameters in Sensitive Watersheds	John Trusal Kemper, University of Vermont, Kristen Underwood, University of Vermont, Scott D Hamshaw, United States Geological Survey, James B Shanley, United States Geological Survey, Andrew W. Schroth, University of Vermont
Poster	Big Data	12/13/2023	8:30AM	12:50PM	Moscone Center, South	Poster Hall A-C, South	H31U	Frontiers in Water Quality	Erin Cedar Seybold, University of Kansas

Poster	Big Data	12/13/2023	8:30AM	12:50PM	Moscone Center, South	Poster Hall A-C, South	H31X-1837	Variable Inundation Among Earth's Terrestrial Ecosystems	James Stegen, Pacific Northwest National Laboratory, Thibault Datry, Inrae, Anna Elizabeth Braswell, University of Florida, Jianqiu Zheng, Pacific Northwest National Laboratory, Jiantu Painter, Oak Ridge National Laboratory, Erin Cedar Seybold, University of Kansas, Lauren E Kinsman-Costello, Kent State University, Julia Guimond, Woods Hole Oceanographic Institution, Ladau Joshua, Lawrence Berkeley National Laboratory, Inke Forbrich, University of Toledo, Amy J Burgin, University of Kansas, Etienne Fluet-Chouinard, Pacific Northwest National Laboratory, Ross Vander Vorste, University of Wisconsin La Crosse, Michelle H Busch, University of Kansas, Joshua B Fisher, Chapman University, Elizabeth Herndon, Oak Ridge National Laboratory, Kevin Roche, Boise State University, Jan Sweetman, Pennsylvania State University, Jenna N Abrahamson, North Carolina State University Raleigh, Peter Regier, Pacific Northwest National Laboratory, Kristin Boye, SLAC National Acceleratory Laboratory, Beth Middleton, United States Geological Survey, Hyun-Seob Song, University of Nebraska Lincoln, Edward Bam, University of Alberta
Oral	Drylands	12/13/2023	9:20AM	9:30AM	Moscone Center, West Level 3	3020	H31E	Using Shallow Electromagnetic Techniques to Map Soil Properties and Soil Water Distribution in Dryland Critical Zones	Kristina Sasser, University of Texas at El Paso, Mark Engle, University of Texas at El Paso, Aracely Garcia, University of Texas at El Paso, Diane Irene Doser, University of Texas at El Paso, Mark R Baker, University of Texas at El Paso, Lixin Jin, University of Texas at El Paso, Jessica Hartman, University of Texas at El Paso
Oral	Bedrock	12/13/2023	9:30AM	9:40AM	Moscone Center, West Level 3	3020	H31E	The Virtual Critical Zone: Mapping Geophysical and Geochemical Heterogeneity in a Critical Zone Outcrop	Denise Burgett, Virginia Polytechnic Institute and State University, Steve Holbrook, Virginia Tech, Sean P Bemis, Virginia Polytechnic Institute and State University, Benjamin Eppinger, Virginia Tech, Brady Flinchum, Clemson University
Oral	Bedrock	12/13/2023	9:40AM	9:50AM	Moscone Center, West Level 3	3020	H31E	Vegetation Water-use Drives Persistent Differences in Rock Moisture Content Between Hillslopes with Opposing Aspects (Invited)	Russell Patrick Callahan, University of Connecticut, Nerissa Barling, University of California, Santa Cruz, Amanda M Donaldson, University of California, Santa Cruz, Mong-Han Huang, University of Maryland College Park, Daniella Marie Rempe, University of Texas at Austin, Daphne Smith, University of Texas at Austin, Saffat Shahid, University of Maryland College Park, Margaret A Zimmer, University of California, Santa Cruz
Oral	Dust*2	12/13/2023	10:55AM	11:05AM	Moscone Center West, Level 3	3020	H32B-04	Advancing Domestic and International Water Management Capabilities with a Global Daily Snow Cover and Albedo Product	Karl Rittger, University of Colorado Boulder, Mark S Raleigh, Oregon State University, Edward Bair, Leidos, Inc., McKenzie Skiles, University of Utah, Mark C Serreze, University of Colorado Boulder, CIRES, Patrick Naple, University of Utah, Thomas H Painter, University of California Los Angeles, Michelle Stokes, NOAA Colorado Basin River Forecast Center, Martyn P Clark, University of Saskatchewan, Sean Fleming, Oregon State University, Sebastian Lenard, University of Colorado Boulder, Keith N Musselman, University of Colorado Boulder, Mary J. Brodzik, University of Colorado Boulder, Otto Ian Lang, University of Utah, Patrick Kormos, NOAA Colorado Basin River Forecast Center, David Casson, University of Saskatchewan, Jonathan P Conway, National Institute of Water and Atmospheric Research, Alice Hill, National Institute of Water and Atmospheric Research
Poster	Bedrock	12/13/2023	2:10PM	6:30PM	Moscone Center, South	Poster Hall A-C, South	H33N-1971	Critical Zone Structure Along a Montane Gradient in the San Jacinto, Mountains in Southern California	Rachel Uecker, Clemson University, Brady Flinchum, Clemson University, Ken Ferrier, University of Wisconsin - Madison, Kai Hu, University of Wisconsin - Madison, Clifford S Riebe, University of Wyoming, Bradley Carr, University of Wyoming, Ang Li, University of Wyoming, Steve Holbrook, Virginia Tech
Poster	Bedrock	12/13/2023	2:10PM	6:30PM	Moscone Center, South	Poster Hall A-C, South	H33N-1972	Exploring the Critical Zone with P-wave and S-wave Velocities: Insights from Vp/Vs Ratios	William Cummings, Clemson University, Brady Flinchum, Clemson University, Bradley Carr, University of Wyoming, Steve Holbrook, Virginia Tech, Dario Grana, University of Wyoming
Poster	Bedrock	12/13/2023	2:10PM	6:30PM	Moscone Center, South	Poster Hall A-C, South	H33N-1968	Sharpening our Picture of the Critical Zone with Double Component Near-Surface Full Waveform Inversion	Benjamin Eppinger, Virginia Tech, Steve Holbrook, Virginia Tech, Zhaolun Liu, Ocean University of China, Jeroen Tromp, Princeton University

Poster	Big Data	12/13/2023	2:10PM	6:30PM	Moscone Center South	Poster Hall A-C, South	B33I-2340	Disturbances, Resilience, and the Role of Calcium-Bearing Minerals Weathering in Northeastern Forests	Bren Cable, University of Vermont, Elliott Bloom, University of Vermont, Victoria Treto, University of Vermont, James B Shanley, United States Geological Survey, Li Li, Pennsylvania State University, Justin B Richardson, University of Virginia, Bryn Stewart, Pennsylvania State University, Julia N Perdrial, University of Vermont, Nicolas Perdrial, University of Vermont, Nicolas Perdrial, University of Vermont, Niara Hicks, University of Vermont, Dustin W Kincaid, University of Vermont, Erin Cedar Seybold, University of Kansas, Andrew Vierbicher, Pennsylvania State University, Alexandra Rice, University of Virginia
Poster	Urban	12/13/2023	2:10PM	6:30PM	Moscone Center South	Poster Hall A-C, South	H33U-2066	Chemical Dynamics of Soils in the Urban Critical Zone: Soil Metal Contamination in the Pennypack Creek Watershed of Philadelphia, Pennsylvania	Victor Barrientos, CUNY Queens College, Daniel Bain, University of Pittsburgh, Laura Toran, Temple University
Oral	Big Data	12/13/2023	4:00PM	5:00PM	Moscone Center West, Level 3	3022	H34B	Frontiers in Water Quality	Erin Cedar Seybold, University of Kansas Elizabeth Whitney, University of Delaware, Nathaniel Spicer, University of Maryland, Aleksandar I Goranov, Old Dominion University, Patrick G Hatcher, Old Dominion University, Yu-Ping (Yo) Chin, University of Delaware, Katherine L Tully, Earth Institute, Columbia University, Brian Moyer, University of Maryland College Park
Oral	Coastal	12/13/2023	5:00PM	5:10PM	Moscone Center, West Level 3	3024	H34E	Exploring Dissolved Organic Carbon and Nitrogen Dynamics During Tidal and Storm Events Across Land Use	

## Thursday, December 14th

Session Type	Cluster	Date	Start Time	End Time	Property	Room	Session Number	Title	People
Poster	Big Data	12/14/2023	8:30AM	12:50AM	Moscone Center, South	Poster Hall A-C, South	B41G-2537	Differential Production and Export of Dissolved Carbon from Shallow and Deep Subsurface (Invited)	Bryn Stewart, Pennsylvania State University, James B Shanley, United States Geological Survey, Serena Matt, United States Geological Survey, Erin Cedar Seybold, University of Kansas, Dustin W Kincaid, University of Vermont, Andrew Vierbicher, Pennsylvania State University, Bren Cable, University of Vermont, Niara Hicks, University of Vermont, Julia N Perdrial, University of Vermont, Li Li, Pennsylvania State University
Poster	Big Data Dust*2	12/14/2023	8:30AM	12:50AM	Moscone Center, South	Poster Hall A-C, South	B41G-2539	Using Coupled Concentration- and Process-Discharge Analysis to Inform Arctic Stream Metabolic Response to River Discharge.	Abigail Rec, University of Vermont, William B Bowden, University of Vermont, Ariel J. Shogren, University of Alabama, Amelia Grose, Michigan State University, Jansen Nipko, Brigham Young University, Jay P Zarnetske, Michigan State University, Jonathan A O'Donnell, National Park Service Anchorage, Benjamin W Abbott, Brigham Young University
Poster	Dust*2	12/14/2023	8:30AM	12:50PM	Moscone Center, South	Poster Hall A-C, South	H41T-2046	How Much River Flow Will it Take to Rescue the Great Salt Lake?	Suly Morel, Benjamin W Abbott, Brigham Young University, Karoline Busche, Brigham Young University, Robert Sainsbury, Brigham Young University, Rachel Wood, Brigham Young University, Matthew F Bekker, Brigham Young University, Kate Olsen, Brigham Young University, Gregory T Carling, Brigham Young University
Poster	Dynamic Water	12/14/2023	8:30AM	12:50PM	Moscone Center, South	Poster Hall A-C, South	H41T-2053	Do Snowmelt Driven Differences in Stream Discharge Control Surfacewater - Groundwater Interaction in an Alpine Stream?	Jose Montoya, University of New Mexico Main Campus, Kenneth Swift Bird, Colorado School of Mines, Rorisang Kgoadi, Kamini Singha, Colorado School of Mines
Oral	Dust*2	12/14/2023	9:02AM	9:12AM	Moscone Center, West Level 2	2004	C41B-04	Spatial Assessment of Snow Grain Size Form Airborne Lidar Intensity Against Coincident Imaging Spectroscopy Retrievals	Chelsea Ackroyd, University of Utah, McKenzie Skiles, University of Utah, Chris Donahue, University of Northern British Columbia, Brian B Menounos, University of Northern British Columbia
Oral	Bedrock	12/14/2023	10:32AM	10:42PM	Moscone Center, Level 2 West	2006	EP42C	Soils in the Balance: Using Cosmogenic Nuclides to Test for Steady-state Soil Thickness on Hillslopes	Nancy Weinheimer, University of Wyoming, Claire E Lukens, University of California Merced, Russell Callahan, University of Connecticut, Seulgi Moon, University of California Los Angeles, Alexander Neely, University of Tubingen, Paul A Schroeder, University of Georgia, Athens, Steve Holbrook, Virginia Tech, Clifford S Riebe, University of Wyoming, Kevin P Norton, Victoria University of Wellington, Leonard S Sklar, Concordia University, Daniel deB. Richter, Nicholas School of the Environment, Duke University, Andy Darling, Arizona State University

Oral	Bedrock	12/14/2023	11:10AM	11:20AM	Moscone Center, South, Upper Mezzanine	157	S42A	"Large-N" for the Critical Zone: Probing the Subsurface beneath the World's Largest Trees with a Dense Nodal Seismic Array	Steve Holbrook, Virginia Polytechnic Institute and State University, Sean P Bemis, University of Kentucky, Virginia Polytechnic Institute and State University, Claire E Lukens, University of California Merced, Bradley Carr, University of Wyoming, Emma L Aronson, University of California Riverside, Stephen C Hart, University of California Merced, Benjamin Eppinger, Virginia Tech, Denise Nicole Burgett, Virginia Polytechnic Institute and State University, Clifford S Riebe, University of Wyoming
Oral	Bedrock	12/14/2023	10:52AM	11:02AM	Moscone Center, Level 2 West	2006	EP42C	Linking Hillslope Sediment Size to Detrital Samples at Catchment Outlets by Modelling Particle Wear Rates in Transport (Invited)	Leonard S Sklar, Concordia University, Clifford S Riebe, University of Wyoming, Claire E Lukens, University of California Merced
Oral	Bedrock	12/14/2023	11:22AM	11:32AM	Moscone Center, Level 2 West	2006	EP42C	Testing Hypotheses Linking Hillslope Morphology to Variable Source Area Runoff Generation: A Natural Experiment (Invited)	David Litwin, Helmholtz Centre Potsdam GFZ German Research Centre for Geosciences, Johns Hopkins University, Ciaran J Harman, Johns Hopkins University
Oral	Drylands	12/14/2023	11:22AM	11:32AM	Moscone Center, Level 3 West	3008	B42B	Field-Scale Quantification of Water Mass Balance to Better Understand Salt buildup, Crop Yields, and Pedogenic Carbonate Accumulation in Irrigated Dryland Soils	Jessica Hartman, University of Texas at El Paso, Lin Ma, University of Texas at El Paso, Mark Engle, University of Texas at El Paso, Lixin Jin, University of Texas at El Paso
Poster	Bedrock Geomicro	12/14/2023	2:10PM	6:30PM	Moscone Center, South	Poster Hall A-C, South	EP43E	Interactions Between Microbial Communities and Landscape Evolution in Eastern Sierra Nevada, CA	Michal Ben-Israel, University of California Merced, Claire E Lukens, University of California Merced, J. Michael Beman, University of California Merced
Poster	Big Data	12/14/2023	2:10PM	6:30PM	Moscone Center, South	Poster Hall A-C, South	H43J-2205	Assessing and Improving National Water Model Performance in Montane Headwater Catchments	Mirce Ivon Morales Velazquez, University of Vermont, Andrew W Schroth, University of Vermont, Beverley Wemple, University of Vermont, James B Shanley, United States Geological Survey, Donna M Rizzo, University of Vermont, John Trusal Kemper, University of Vermont, Kristen Underwood, University of Vermont
Poster	Dust^2	12/14/2023	2:10PM	6:30PM	Moscone Center, South	Poster Hall A-C, South	C43D-1631	A Cold Laboratory Hyperspectral Imaging System Mapping Firn Core Grain Size and Ice Layer Stratigraphy	Ian McDowell, University of Nevada Reno, Kaitlin M Keegan, University of Nevada, Reno, McKenzie Skiles, University of Utah, Christopher Donahue, University of Northern British Columbia, Eric C Osterberg, Dartmouth College, Robert L Hawley, Dartmouth College, Hans-Peter Marshall, Boise State University
Oral	Dust^2	12/14/2023	2:24PM	2:38PM	Moscone Center, West Level 3	3005	A43F-02	A 23-year Record of MODIS Dust on Snow Radiative Forcing in the Upper Colorado River Basin	Patrick Naple, University of Utah, McKenzie Skiles, University of Utah, Karl Rittger, University of Colorado at Boulder
Oral	Dust^2	12/14/2023	2:38PM	2:52PM	Moscone Center, West Level 3	3005	A43F-03	Long-term Trends in Spring Season Dust Emissions Across the Southwestern United States	Saraj Dhital, USDA-ARS Jornada Exp. Range, Nicholas Webb, USDA-ARS Jornada Exp. Range, McKenzie Skiles, University of Utah, Adrian Chappell, Cardiff University, Sandra LeGrand, US Army Engineer Research and Development Center, Patrick Naple, University of Utah, Nathaniel W. Chaney, Duke University, Gayle Tyree, New Mexico State University, Michael Duniway, United States Geological Survey, Southwest Biological Science Center, Theodore Letcher, US Army Engineer Research and Development Center, Jiaxuan Cai, Duke University
Oral	Dust^2	12/14/2023	4:00PM	5:30PM	Moscone Center, West Level 2	2004	C44B	Remote Sensing of the Cryosphere: Seasonal Snow	McKenzie Skiles, University of Utah
Oral	Dust^2	12/14/2023	4:36PM	4:48PM	Moscone Center, West Level 3	3014	H44C-04	Aerosol Measurements for Integrated Mountainous Hydroclimate Processes in the Upper Colorado River Basin (Invited)	Allison C Aiken, Los Alamos National Laboratory, Paul J DeMott, Colorado State University, McKenzie Skiles, University of Utah, Katherine Benedict, Los Alamos National Laboratory, Darielle Dexheimer, Sandia National Laboratories, Fan Mei, Pacific Northwest National Laboratory, Jiwen Fan, Argonne National Laboratory, James N Smith, University of California Irvine, Abu Sayeed Md Shawon, Los Alamos National Laboratory, Swarup China, Pacific Northwest National Laboratory, Maria A Zawadowicz, Brookhaven National Laboratory
<b>Friday, December 15th</b>									
Session Type	Cluster	Date	Start Time	End Time	Property	Room	Session Number	Title	People
Poster	Bedrock	12/15/2012	8:30AM	12:50PM	Moscone Center, South	Poster Hall A-C, South	EP51D-1641	Influence of Bedrock Weathering on Soil Production and Hillslope Morphology	Joshua Lee, University of California Los Angeles, Seulgi Moon, University of California Los Angeles, Clifford S Riebe, University of Wyoming, Russell Callahan, University of Connecticut
Poster	Bedrock	12/15/2023	8:30AM	12:50PM	Moscone Center, South	Poster Hall A-C, South	EP51D-1638	Auger vs. Push Core: Methods of Sampling Sapolite to Understand Bedrock Weathering in the Critical Zone	Kate Wilcox, Dickinson College, Jorden L Hayes, Dickinson College, Bradley Carr, University of Wyoming, Clifford S Riebe, University of Wyoming, Steve Holbrook, Virginia Tech

Poster	Bedrock	12/15/2023	8:30AM	12:50PM	Moscone Center, South	Poster Hall A-C, South	EP51D-1639	Linking Geochemistry and Geophysics to Quantify Controls on Subsurface Weathering in Heterogeneous Bedrock	Christina Kitamikado, University of Wyoming, Clifford S Riebe, University of Wyoming, Dario Grana, University of Wyoming, Seulgi Moon, University of California Los Angeles, Brady Flinchum, Clemson University, Anders J Noren, University of Minnesota, Leonard S Sklar, Simon Fraser University, Bradley Carr, University of Wyoming, Steve Holbrook, Virginia Tech, Jordan L Hayes, Dickinson College, Benjamin Eppinger, Virginia Tech, Daniel deB. Richter, Duke University
Poster	Big Data	12/15/2023	8:30AM	12:50PM	Moscone Center, South	Poster Hall A-C, South	H51K-1251	Snowpack Declines Drive Changes in Hydrologic Partitioning and Seasonal Runoff in a Montane Catchment of the Northeastern USA	Kate Hale, University of Vermont, Andrew W. Schroth, University of Vermont, James B Shanley, United States Geological Survey, Beverley Wemple, University of Vermont
Poster	Big Data	12/15/2023	8:30AM	12:50PM	Moscone Center, South	Poster Hall A-C, South	V51D-0092	Impact of Changes in Water Availability on Water Quality: A Data-driven Investigation of Critical Zone Subsurface and Vegetation Interactions	Niara Hicks, University of Vermont, Li Li, Pennsylvania State University, Kristen Underwood, University of Vermont, Dustin W Kincaid, University of Vermont, James B Shanley, United States Geological Survey, Bren Cable, University of Vermont, Bryn Stewart, Pennsylvania State University, Ijaz UL HAQ, University of Vermont, Lauren Lowman, Wake Forest University, Erin Cedar Seybold, University of Kansas, Julia N Perdrial, University of Vermont
Poster	CINet	12/15/2023	8:30AM	12:50PM	Moscone Center, South	Poster Hall A-C, South	EP53C-1679	Sediment Dynamics in an Intensively Managed Agricultural Watershed	Anne Cook, Bruce L Rhoads, University of Illinois Urbana-Champaign, Chelsy Rae Salas, University of Illinois Urbana-Champaign
Poster	Coastal	12/15/2023	8:30AM	12:50PM	Moscone Center, South	Poster Hall A-C, South	H51N	Coastal Drought Drives Salinization of Groundwater Along the Marsh-upland Boundary on the Delmarva Peninsula	Dannielle Pratt, University of Delaware, Eva Snell-Bacmeister, University of Delaware, Julia Guimond, Woods Hole Oceanographic Institute, Holly A Michael, University of Delaware
Poster	Drylands	12/15/2023	8:30AM	12:50PM	Moscone Center, South	Poster Hall A-C, South	H51P-1302	The Role of Discontinuous Pedogenic Carbonate Layers in Controlling 3-D Soil Water Dynamics in Dryland Critical Zones	Mark Engle, University of Texas at El Paso, Nohemi Valenzuela Garay, University of Texas at El Paso, Kristina Sasser, University of Texas at El Paso, Christian Leach, University of Texas at El Paso, Carmel G Murrillo, University of Texas at El Paso, Lin Ma, University of Texas, Mark R Baker, University of Texas at El Paso, Diane Irene Doser, University of Texas at El Paso
Poster	Dust*2	12/15/2023	8:30AM	12:50PM	Moscone Center, South	Poster Hall A-C, South	C51C-0959	A Two Decade Record of Dust on Snow in the Great Salt Lake Basin: Interannual Variability in Radiative Forcing and Snowmelt Timing	Otto Ian Lang, University of Utah, McKenzie Skiles, University of Utah, Karl Rittger, University of Colorado at Boulder, Derek V. Mallia, University of Utah
Poster	Dust*2	12/15/2023	8:30AM	12:50PM	Moscone Center, South	Poster Hall A-C, South	C51F	Remote Sensing of the Cryosphere: Seasonal Snow	McKenzie Skiles, University of Utah
Poster	Dust*2	12/15/2023	8:30AM	12:50PM	Moscone Center, South	Poster Hall A-C, South	A51U-2250	Constraining Methane Emissions Across the Salt Lake Valley Urban Area	James Mineau, University of Utah, John C Lin, University of Utah, Derek V Mallia, University of Utah, Logan Mitchell, Utah Clean Energy, Maria R Garcia, University of Utah
Poster	Dust*2	12/15/2023	8:30AM	12:50PM	Moscone Center, South	Poster Hall A-C, South	C51F-1005	Snow Grain Size Retrieval Algorithm Effectiveness using UAV-borne High-Resolution Hyperspectral Observations	Adam Hunsaker, University of New Hampshire, Jennifer M Jacobs, University of New Hampshire, Jeremy M Johnston, University of New Hampshire, McKenzie Skiles, University of Utah
Poster	Dust*2	12/15/2023	8:30AM	12:50PM	Moscone Center, South	Poster Hall A-C, South	H51K-1256	Understanding Impacts of Dust-on-Snow on Regional Hydrology Dynamics in the Upper Colorado River Basin for the Past 20 Years	Jiaxuan Cai, Duke University, Patrick Naple, University of Utah, McKenzie Skiles, University of Utah, Saroj Dhital, USDA-ARS Jornada Exp. Range, Nicholas Webb, USDA-ARS Jornada Exp. Range, Michael Duniway, United States Geological Survey, Southwest Biological Science Center, Gayle Tyree, United States Geological Survey, Southwest Biological Science Center, Nathaniel W Chaney, Duke University
Poster	Urban	12/15/2023	8:30AM	12:50PM	Moscone Center, South	Poster Hall A-C, South	EP51D-1648	Investigation of the Soil-Bedrock Interface in Tributaries Above and Below the Knickpoint of a Fall Zone Stream	Tristina Ting, University of Minnesota Twin Cities, Karen L Prestegard, University of Maryland, John A Harris, University of Maryland College Park, Mong-Han Huang, University of Maryland College Park
Oral	Dust*2	12/15/2023	8:30AM	8:40AM	Moscone Center, West Level 3	3004	A51F-01	Quantifying Greenhouse Gas Emissions from Cities: from Neighborhood to Global Scales	John C Lin, University of Utah, Derek V Mallia, University of Utah, James Mineau, University of Utah, Taylor Wilmot, University of Utah, Atmospheric Sciences, Aaron Meyer, University of Utah, Logan Mitchell, Utah Clean Energy, Megan Ostlie, University of Utah, Maria R Garcia, University of Utah

Oral	Big Data	12/15/2023	10:40AM	10:50AM	Moscone Center, West Level 3	3009	B52D-03	Seasonal Drivers of Carbon Processing in Arctic Rivers: Biodegradation and Photodegradation in North Slope, Alaska	Jansen Nipko, Brigham Young University, Benjamin W Abbott, Brigham Young University, William B Bowden, University of Vermont, Ariel J Shogren, University of Alabama, Raymond Lee, University of Wisconsin-Superior, Amelia Grose, Michigan State University, Zachary Aanderud, Brigham Young University, Jay P Zarnetske, Michigan State University, Jonathan A O'Donnell, National Park Service Fairbanks, Abigail Rec, University of Vermont, Jackson VerSteeg, Brigham Young University
Poster	Big Data	12/15/2023	2:10PM	6:30PM	Moscone Center, South	Poster Hall A-C, South	H53M-1502	From Ashes to Insights: Dissecting Ecosystem Dynamics Before and After Wildfire in Illilouette Creek Basin	Ijaz UL HAQ, University of Vermont, Gabrielle Boisrame, Desert Research Institute Las Vegas, Byung Suk Lee, University of Vermont, Kristen Underwood, University of Vermont, Julia N Perdrial, University of Vermont
Poster	Dust^2	12/15/2023	2:10PM	6:30PM	Moscone Center, South	Poster Hall A-C, South	A53N-2466	Projecting the Impacts of a Shrinking Great Salt Lake on Dust Exposure Along the Wasatch Front	Derek Vincent Mallia, University of Utah, Sara Grineski, University of Utah, Timothy Collins, University of Utah, Kevin D Perry, University of Utah, John C Lin, University of Utah, Otto Ian Lang, University of Utah, McKenzie Skiles, University of Utah
Poster	Dust^2	12/15/2023	2:10PM	6:30PM	Moscone Center, South	Poster Hall A-C, South	A53N-2467	Core Microbiome to Fingerprint Dust Emission Sources Across the Western United States of America	Jakob Young, Brigham Young University, DeTiare Leffi, Brigham Young University, Zachary Aanderud, Brigham Young University
Poster	Dust^2	12/15/2023	2:10PM	6:30PM	Moscone Center, South	Poster Hall A-C, South	H53R-1557	Microplastic Pollution at the River Basin Scale: a Convergence Approach	Heejun Chang, Portland State University, Elise F GraneK, Portland State University, Jordyn Wolfand, University of Portland, Janice Brahney, Utah State University, Amanda Gannon, Portland State University, Nancee Hunter, Portland State University, Sarah Carvill, Portland State University
Poster	Drylands	12/15/2023	2:10PM	6:30PM	Moscone Center, South	Poster Hall A-C, South	B53F	Threshold Concentration Range of Organic acids (OAs) -to Mobilize Phosphorus (P) Across Landforms/Vegetation in the -Chihuahuan Desert Soils	Kalpna Kukreja, University of Texas at El Paso, Mark Engle, University of Texas at El Paso, Anthony Darrouzet-Nardi, University of Texas at El Paso
Oral	Big Data	12/15/2023	2:10PM	2:20PM	Moscone Center, West Level 3	3008	B53A-01	Tracking Vegetation Recovery Following Mixed Severity Wildfires in the Sierra Nevada	Gabrielle Boisrame, Desert Research Institute Las Vegas, Adrian Adam Harpold, University of Nevada Reno, Jens T Stevens, University of California Berkeley, Sally E Thompson, University of Western Australia, Scott Stephens
Oral	Dust^2	12/15/2023	2:20PM	2:20PM	Moscone Center, West Level 3	3008	B53A-01	Tracking Vegetation Recovery Following Mixed Severity Wildfires in the Sierra Nevada	Gabrielle Boisrame, Desert Research Institute Las Vegas, Adrian Adam Harpold, University of Nevada Reno, Jens T Stevens, University of California Berkeley, Sally E Thompson, University of Western Australia, Scott Stephens