

Conference Program
AGU Hydrology Days 2016
 March 21 - March 23, 2016



Program at a Glance

	March 21		March 22		March 23
		8:30	Registration	8:30	Registration
8:30	Registration		Posters		Posters
9:45	WATER management	9:15	Eco-Hydrology I	9:00	Hydraulics I
				9:00	Poster Session
	Mid-morning break		Mid-morning break		Mid-morning break
10:45	Management of Water Quantity and Quality	10:30	Eco-Hydrology II	10:30	Hydraulics II
12 - 2	Lunch Borland Lecture in Hydrology	12 - 2	Lunch Hydrology Days Award Lecture	12 - 2	Lunch Borland Lecture in Hydraulics
2	Snow Hydrology	2	Soil Moisture - Irrigation	2	Erosion and Sedimentation I
					Water and Env. Sustainability I
	Mid-afternoon break		Mid-afternoon break		Mid-afternoon break
4	Groundwater - Stream/Aquifer Interactions	4	Climate - Hydrologic impacts	4:00	Erosion and Sedimentation II
			World Water Day		Water and Env. Sustainability II
	Adjourn		Adjourn		Hydrology Days Ends

Monday		
Date	Time	Session
March 21	8:30	Registration - Cherokee Park Room - Lory Student Center
March 21	9:45	WATER Management
		Chair: Professor Jorge A. Ramírez Department of Civil and Environmental Engineering, CSU
		Cherokee Park Room - Lory Student Center
I-WATER	9:45	Dipsa: A Video Game for Stakeholder Engagement when Planning Future Water Resources
		Andre Q. Dozier Department of Civil and Environmental Engineering, Colorado State University
	10:00	Evaluating groundwater management policies with an integrated hydrologic-economic model of the Republican River Basin
		R. Aaron Hrozencik, Dale Manning, Jordan Suter, Chris Goemans and Ryan Bailey Department of Agricultural and Resource Economics, Colorado State University
	10:15	Finding Land and Water Management Practices to Lessen River Pollutant Concentrations in Irrigated Regions
		Christopher D. Shultz, Timothy K. Gates, and Ryan T. Bailey Department of Civil and Environmental Engineering, Colorado State University
	10:30	Why do Residents of Utah County, Utah, Dig Shallow Wells in their Backyards?
		Janelle E. Gherasim, Sterling M. Roberts, Skyler K. Tulley, Anthony C. Bradford, Neal B. Christensen, Lawrence T. Kellum, Joshua S. McNeff, Colby Oliverson, Jarrett D. Nichols, Jake V. Sorensen, and Steven H. Emerman Department of Earth Science, Utah Valley University
March 21	10:45	Mid-morning break
March 21	11:00	Management of Water Quantity and Quality
		Chair: Professor Marzieh Motallebi Baruch Institute of Coastal Ecology and Forest Science, Clemson University
		Cherokee Park Room - Lory Student Center
	11:00	Conditions for a Successful Water Quality Trading Program: Case Study Jordan Lake, North Carolina
		Marzieh Motallebi, Ali Tasdighi, Dana L. Hoag, Mazdak Arabi, and Deanna L. Osmond Baruch Institute of Coastal Ecology and Forest Science, Clemson University, Georgetown, SC
	11:15	Water Quality Trading: How to Deal with Uncertainties in Modeling Nonpoint Sources?
		Ali Tasdighi, Mazdak Arabi and Marzieh Motallebi Department of Civil and Environmental Engineering, Colorado State University
	11:30	Water Resources Law of Republic of Indonesia
		Neil Andika and Neil S. Grigg Department of Civil and Environmental Engineering, Colorado State University
	11:45	Colorado Water Plan: Collective action, public trust, and private ownership of water rights
		Neil S. Grigg Department of Civil and Environmental Engineering, Colorado State University

March 21	12:00	Lunch - North Ballroom - Lory Student Center
	1:00	Borland Lecture in Hydrology - North Ballroom - Lory Student Center
		Future of Water Resources Systems Analysis: The Science of Sustainable Water Management
		Professor Casey Brown Department of Civil and Environmental Engineering, University of Massachusetts, Amherst, MA
March 21	2:00	Snow Hydrology
		Chair: Professor Steven R. Fassnacht Department of EcoSystem Science and Sustainability, CSU
		Cherokee Park Room - Lory Student Center
	2:00	The Sub-Daily Temporal Distribution of Snowmelt
		Ryan W. Webb, Steven R. Fassnacht, and Michael N. Gooseff Department of Civil and Environmental Engineering, Colorado State University
	2:15	The Spatial Distribution of Fine Resolution Snow Surface Roughness
		Eric S. Thomas and Steven R. Fassnacht ESS-Watershed Science, Colorado State University
	2:30	Integrating the Spatial Variability of Snowpack Properties
		Rob Davis, Cassidi Rosenkrance, Joseph Fattor, Steven R. Fassnacht, Anna K.D. Pfohl ESS-Watershed Science, Colorado State University
	2:45	Using Agent-based Models to Understand Sampling Logistics: An Example of Surveying the Snow
		R. Allen Gilbert Jr. and Steven R. Fassnacht ESS-Watershed Science, Colorado State University
	3:00	When and Where Do Enhanced Warming and Snowmelt Occur in Rocky Mountain National Park?
		Glenn G. Patterson, Steven R. Fassnacht and Amanda Weber Watershed Science, Colorado State University
	3:15	Change in the Andes Mountains Snow Cover from 2000 to 2014
		Freddy Saavedra and Stephanie Kampf Department of Geosciences, Colorado State University
	3:30	Homogenization of High Elevation Temperature Data Across Colorado
		Chenchen Ma, Steven R. Fassnacht and Stephanie K. Kampf ESS-Watershed Science, Colorado State University
March 21	3:45	Mid-afternoon break
March 21	4:00	Groundwater - Stream/Aquifer Interactions
		Co-Chairs: Professor Thomas C. Sale and Professor Ryan T Bailey Department of Civil and Environmental Engineering, CSU
		Cherokee Park Room - Lory Student Center
	4:00	Groundwater aquifer depletion in a Great Lakes State: The effects of pumping restrictions in the North and East Metropolitan Area of Minneapolis and Saint Paul
		Jessica K. Daignault Short Elliott Hendrickson (SEH), Inc.
	4:15	Subsurface contaminant particle tracking given dynamic natural gradients and pumping about wells
		Yuan Gao and Thomas Sale Department of Civil and Environmental Engineering, Colorado State University
	4:30	Comprehensive Estimation of Solute Transport and Interaction in Surface-Subsurface Hydrologic System using the Linked SWAT-MODFLOW-RT3D Model
		Xiaolu Wei, Ryan Bailey, Rosemary Records, Mazdak Arabi Department of Civil and Environmental Engineering, Colorado State University

4:45	Artificial Neural Networks Database Development for Modeling Stream-Aquifer Interactions in the Lower Arkansas River Basin of Colorado
	Faizal Rohmat, John W. Labadie, and Timothy K. Gates Department of Civil and Environmental Engineering, Colorado State University
5:00	Groundwater depletion rates estimated from different GRACE products and water balance models of different spatial scale
	Muhammad Ukasha and Jorge A. Ramirez Department of Civil and Environmental Engineering, Colorado State University
5:15	Modeling and Managing Artificial Groundwater Recharge in Arid Regions
	Rafey A Siddiqui, Ryan T Bailey and Arif I Osmani Department of Civil and Environmental Engineering, Colorado State University
5:30	Freshwater Resources for Selected Atolls -- Recommendations and Conclusions Based on Modeling Study
	Alise M. Beikmann and Ryan T. Bailey Department of Civil and Environmental Engineering, Colorado State University

March 21 6:00 Adjourn

Tuesday		
Date	Time	Session
March 22	8:30	Registration - Cherokee Park Room - Lory Student Center
March 22	9:15	Eco-Hydrology I
		Chair: Professor Jorge A. Ramírez Department of Civil and Environmental Engineering, CSU
		Cherokee Park Room - Lory Student Center
I-WATER	9:15	Early warning system for east Colorado ranchers to reduce N deposition in Rocky Mountain National Park
		Aaron J. Piña, Russ S. Schumacher, Brock Faulkner, and A. Scott Denning Department of Atmospheric Science, Colorado State University
I-WATER	9:30	Algal blooms in the alpine – investigating the coupled effects of chronic nitrogen deposition and climate change on alpine lakes
		Isabella A. Oleksy, Jill S. Baron Natural Resource Ecology Laboratory, Colorado State University
I-WATER	9:45	Stream Algae Nutrient Limitation Along an Elevation Gradient in the Poudre Watershed, Colorado
		Whitney S. Beck Department of Biology and Graduate Degree Program in Ecology, Colorado State University
I-WATER	10:00	High elevation lakes in a changing climate
		Kyle Christianson Department of Fish, Wildlife and Conservation Biology, Colorado State University
March 22	10:15	Mid-morning break
March 22	10:30	Eco-Hydrology II
		Chair: Professor Steven Emerman Department of Earth Science, Utah Valley University
		Cherokee Park Room - Lory Student Center
I-WATER	10:30	Can stream restoration remedy the nutrient pollution problem?
		Roderick W. Lammers and Brian P. Bledsoe Department of Civil and Environmental Engineering, Colorado State University
I-WATER	10:45	Soil and waterborn amoeba act as long-term environmental reservoirs of pathogenic bacteria
		David Markman Department of Biology, Colorado State University
	11:00	Soil Information Linking to the Amoeba-Plague relation within Prairie Dog Colonies
		Brandon Lemire and Steven R. Fassnacht and David Markman ESS-Watershed Science, Colorado State University
	11:15	Improving water quality forecasting using data assimilation
		Hamideh Riazi, Sunghee Kim, Dong-Jun Seo, Changmin Shin Department of Civil Engineering, The University of Texas at Arlington, Arlington, TX
	11:30	Optimal Allocation of Leaf-Level Nitrogen Explains Covariation of Vcmax and Jmax
		Jonathan Quebbeman and Jorge A. Ramirez Department of Civil and Environmental Engineering, Colorado State University
	11:45	Implications of Dynamic Vegetal Processes Affecting Future Water Yield: Consideration of Optimality Theories in Long-Term Hydrologic Modeling
		Jonathan Quebbeman and Jorge A. Ramirez Department of Civil and Environmental Engineering, Colorado State University

March 22	12:00	Lunch - North Ballroom - Lory Student Center
	1:00	Hydrology Days Award Lecture - North Ballroom - Lory Student Center
		Water and Energy Cycles Coupling Diagnosed From Remotely Sensed Global Observations
		Professor Dara Entekhabi Department of Civil and Environmental Engineering, Massachusetts Institute of Technology, Cambridge, MA
March 22	2:00	Soil Moisture - Irrigation
		Chair: Professor Jeffrey D. Niemann Department of Civil and Environmental Engineering, CSU
		Cherokee Park Room - Lory Student Center
	2:00	Adapting a Remote-Sensing Method for Soil Moisture to Account for Regional Soil, Vegetation, and Climatic Characteristics
		Shukran Sahaar and Jeffrey D. Niemann Department of Civil and Environmental Engineering, Colorado State University
	2:15	Downscaling Soil Moisture in Regions with Large Elevation Ranges
		Garret S. Cowley, Jeffrey D. Niemann , Timothy R. Green, Mark S. Seyfried and Andrew S. Jones Department of Civil and Environmental Engineering, Colorado State University
	2:30	Evaluating Methods to Downscale Multiple Coarse-Resolution Grid Cells of Soil Moisture
		Dylan C. Hoehn, Jeffrey D. Niemann, Timothy R. Green and Andrew S. Jones Department of Civil and Environmental Engineering, Colorado State University
	2:45	Integration of an unmanned aircraft system and ground based remote sensing to estimate spatially distributed crop evapotranspiration and soil water deficit through the vegetation soil root zone
		Jeffrey C. Hathaway and José L. Chávez Department of Civil and Environmental Engineering, Colorado State University
	3:00	Remote Sensing Assessments of Full and Partial Irrigation Regimes to Estimate Conserved Consumptive Use of Agricultural Water in Western Slope of Colorado
		Amandeep Vashisht, Jose Chavez and Perry Cabot Department of Civil and Environmental Engineering, Colorado State University
	3:15	Non-hydrostatic hydro-meteorological atmospheric simulations of extreme weather events: WRF and WRF-Hydro models applications to a case study in central Italy
		Francesca Viterbo, Antonio Parodi, Fabio Delogu, Jost von Harenberg, Antonello Provenzale and Dave Gochis CIMA Foundation, Savona, Italy and Institute of Atmospheric Sciences and Climate (ISAC-CNR), Torino, Italy
	3:30	Joint modelling of flood characteristics in Çoruh Basin, Turkey
		Fatih Tosunoglu and İbrahim Can Department of Civil Engineering, Erzurum Technical University, Turkey
March 22	3:45	Mid-afternoon break
March 22	4:00	Climate - Hydrologic impacts
		Chair: Professor Jorge A. Ramirez Department of Civil and Environmental Engineering, CSU
		Cherokee Park Room - Lory Student Center
I-WATER	4:00	Simulating the 2012 High Plains drought using three single column models (SCM)
		Isaac D. Medina Department of Atmospheric Science, Colorado State University
	4:15	A Review of the 2015 Water Year in Colorado
		Nolan Doesken, Zach Schwalbe and Noah Newman Colorado Climate Center, Department of Atmospheric Science, Colorado State University

4:30	Hydroclimatic Impact of the ENSO on South Korean Precipitation Patterns
	Jai-Hong Lee and Pierre Y. Julien Department of Civil and Environmental Engineering, Colorado State University
4:45	Maximizing Information from Hydrologic Ensemble Traces Using Alternate Data Displays
	Richard Koehler NOAA, National Weather Service, UCAR/COMET Program, Boulder, CO
5:00	A model of the distribution of storm depths as resulting from independent storm generating processes
	Matthew E. Peacock Department of Civil and Environmental Engineering, Colorado State University
5:15	Flood Frequency Trends and Spatial Patterns across the Western United States
	Jeremy Giovando Department of Civil and Environmental Engineering, Colorado State University
5:30	Assessing impacts of rainfall patterns, population growth and sea level rise on groundwater supplies in the Republic of Maldives
	Chenda Deng and Ryan T. Bailey Department of Civil and Environmental Engineering, Colorado State University
March 22	6:30pm World Water Day Celebration
	Screening of Film: WATERSHED: Exploring a new water ethic for the new West
	CSU Behavioral Sciences Building, Room 131

March 22 6:00 Adjournal

Wednesday		
Date	Time	Session
March 23	8:30	Registration - Cherokee Park Room - Lory Student Center
March 23	9:00	Hydraulics I
		Chair: Professor Jorge A Ramirez Department of Civil and Environmental Engineering, CSU
		Cherokee Park Room - Lory Student Center
	9:00	Seismic Dam Break & Damage Modeling
		Humberto A. Gallegos, Angel Huezco, Matthew Alipio, Alex Cividanis, Stephanie Cash, Ryan Meier, and Minh Sou Department of Engineering & Technologies, East Los Angeles College
	9:15	A Study on the Impacts of SMART Tunnel Outflow on Hydraulics of Kerayong River
		Kennard Lai and Pierre Y. Julien Department of Civil and Environmental Engineering, Colorado State University
	9:30	The viability of water balance covers constructed with mine tailings and waste rock
		Mohammad Gorakhki and Christopher A. Bareither Department of Civil and Environmental Engineering, Colorado State University
	9:45	Hydraulic Conductivity of Fly Ash-Amended Mine Waste
		Sultan A. Alhomair and Christopher A. Bareither Department of Civil and Environmental Engineering, Colorado State University
	10:00	Assessing Dam-Induced Flow Alterations and Channel Enlargement at Hog Park Creek in the Southern Rocky Mountains
		Tyler J. Carleton Ecosystem Science and Sustainability, Watershed Science, Colorado State University
March 23	10:15	Mid-morning break
March 23	10:30	Hydraulics II
		Chair: Professor Pierre Y Julien Department of Civil and Environmental Engineering, CSU
		Cherokee Park Room - Lory Student Center
	10:30	Erosion Caused by Cavitation in Bottom Outlets, Cambambe Dam Case, Angola
		Marcos Cristiano Palu and Pierre Y. Julien Department of Civil and Environmental Engineering, Colorado State University
	10:45	Use of the Manning Equation for the Design of High-Gradient Canals
		Ashley A. Ostraff, Henintsoa Rakotoarisaona, and Steven H. Emerman Department of Earth Science, Utah Valley University, Orem, Utah
	11:00	A Conceptual Framework for the Use of Machine Learning for the Synthesis of Stream Discharge – Gage Height Rating Curves
		Sarah M. Allen, Steven H. Emerman, Thomas H. Murdock, and Skyler K. Tulley Department of Earth Science, Utah Valley University, Orem, Utah
	11:15	Implementing a travel time model for water and energy budgets of complex catchments: Theory, software, and preliminary application to the Posina River
		Marialaura Bancheri, Riccardo Rigon, Giuseppe Formetta and Timothy R. Green Dipartimento di Ingegneria Civile Ambientale e Meccanica, Università degli Studi di Trento, Italy
	11:30	Classifying Gaining and Losing Streams Using Stream Typology and Distributed Hydrologic Modeling
		Christopher M. Fields and John W. Labadie and Lynn E. Johnson Department of Civil and Environmental Engineering, Colorado State University
	11:45	Storm event hydrograph separation at nested spatial scales in Skin Gulch, Northern Colorado
		Michael Gieschen and Peter A. Nelson Department of Civil and Environmental Engineering, Colorado State University

March 23	12:00	Lunch - North Ballroom - Lory Student Center
	1:00	Borland Lecture in Hydraulics - North Ballroom - Lory Student Center
		Turbulence-resolving models in sediment-transporting flows
		Professor Mark Schmeckle
		Geomorphology and Sediment Transport Laboratory, USGS, Golden, CO
March 23	2:00	Erosion - Sedimentation I
		Chair: Professor Pierre Y Julien
		Department of Civil and Environmental Engineering, CSU
		Cherokee Park Room - Lory Student Center
I-WATER	2:00	Defining Dominant Discharge: A Sediment Yield Perspective
		Joel Sholtes Colorado State University
	2:15	Stable Channel Design Tool Using the Capacity/Supply Ratio (CSR)
		Travis R. Stroth and Brian P. Bledsoe Department of Civil and Environmental Engineering, Colorado State University
	2:30	The effects of sediment supply and self-formed stratigraphy on alternate bar morphodynamics
		Andrew R. Bankert and Peter A. Nelson Department of Civil and Environmental Engineering, Colorado State University
	2:45	Assessing Uncertainty due to the Selection of a Sediment Transport Equation Using Univariate and Multivariate Bayesian Model Averaging
		Youngjai Jung and Jeffrey D. Niemann and Blair P. Greimann Department of Civil and Environmental Engineering, Colorado State University
	3:00	Runoff and sediment transport through riparian buffers in a Rocky Mountain headwater catchment
		Kira C. Puntteney, Kevin D. Bladon, and Uldis Silins Department of Forest Engineering, Resources, and Management, Oregon State University, Corvallis, OR.
	3:15	Properties of netting attached to bedload samplers affect hydraulic and sampling efficiency
		Kristin Bunte, Kurt W. Swingle, Steven R. Abt, and Dan A. Cenderelli Department of Civil and Environmental Engineering, Colorado State University
	3:30	Laboratory and Numerical Simulation of the Accelerated Erosion Model for Arsenic Contamination of Groundwater
		Sterling M. Roberts, Katie A. Merten, Marissa R. Keck, Eric L. Hadley, Mark A. Christiansen, David J. Griggs (deceased), and Steven H. Emerman Department of Earth Science, Utah Valley University
March 23	3:45	Mid-afternoon break
March 23	4:00	Erosion - Sedimentation II
		Chair: Professor Pierre Y Julien
		Department of Civil and Environmental Engineering, CSU
		Cherokee Park Room - Lory Student Center
	4:00	Morphodynamics of riffle-pool sequences in the middle Elwha River, Washington
		Jacob A. Morgan and Peter A. Nelson Department of Civil and Environmental Engineering, Colorado State University
I-WATER	4:15	Connectivity of runoff and sediment from hillslope to watershed-scale in the High Park Fire

		Codie Wilson, Stephanie Kampf , Sandra Ryan Department of Geosciences, Colorado State University
4:30		Effects of closing and decommissioning forest roads as determined with rainfall simulations
		Gabriel Sosa-Perez and Lee H. MacDonald Department of Geosciences, Colorado State University
4:45		Impacts of capping contaminated sediments at groundwater-surface water interfaces
		Calista Campbell and Thomas Sale Department of Civil and Environmental Engineering, Colorado State University
5:00		Sorting in gravel bed channels under varying degrees of meandering and sediment supply
		Tess Hanson and Peter A. Nelson Department of Civil and Environmental Engineering, Colorado State University
5:15		Optimization of Sangju Weir operations to mitigate sedimentation problems
		Hwa Young Kim and Pierre Y. Julien Department of Civil and Environmental Engineering, Colorado State University
5:30		Assessment of Irrigation-Influenced Groundwater Flow and Transport Pathways Along a Stream Reach
		David T. Criswell, Timothy K. Gates, and Ryan T. Bailey Department of Civil and Environmental Engineering, Colorado State University

March 23 6:00 Hydrology Days 2016 ends

March 23	2:00	Water and Environmental Sustainability Across the Globe: Challenges and Opportunities I
		Chair: Professor Steven R. Fassnacht Department of EcoSystem Science and Sustainability, CSU
		Gray Rock Room - Lory Student Center
	2:00	Introduction to Water and Environmental Sustainability Symposium
		Wei Gao Director of the Confucius Institute at CSU, Assistant Vice Provost for China Programs
	2:10	Introduction of Topics I: Challenges
		Steven R. Fassnacht ESS, CSU
	2:15	Anhui Agricultural University – CSU Initiatives on Water, Environmental Sustainability, Extension, and Economic Development
		Louis Swanson Vice President for Engagement, CSU
	2:30	Climate Change Impacts on Water for Agricultural Production
		Xin-Zhong Liang Earth System Science Interdisciplinary Center and Department of Atmospheric and Oceanic Science, University of Maryland
	2:45	Snow Data Assimilation and Its Use in Hydroclimate Prediction
		Zong-Liang Yang, Yongfei Zhang, Yonghwan Kwon, Peirong Lin and Long Zhao The University of Texas at Austin
	3:00	Water Resources in High Mountain Asia: An Initial Exploration with Particular Attention to Contributions by Colorado State University (CSU) - Past, Present & Future
		George F. Taylor II Visiting Fellow, School of Global Environmental Sustainability, Colorado State University
	3:15	The City of Shanghai, China “Sponge-City” Initiative – Research Collaboration between Colorado State University and East China Normal University
		Chris Olson Department of Civil and Environmental Engineering, Colorado State University
March 23	3:30	Mid-afternoon break
March 23	3:45	Water and Environmental Sustainability Across the Globe: Challenges and Opportunities II
		Chair: Professor Steven R. Fassnacht Department of EcoSystem Science and Sustainability, CSU
		Gray Rock Room - Lory Student Center
	3:45	Introduction of Topics II: Opportunities
		Melinda Laituri Dept of ESS, CSU
	3:50	The Aquatic Ecological Characteristics of Highland Rivers in Qinghai-Tibet Plateau
		Xu Mengzhen, Zhao Na, Zhou Xiongdong, Wang Zhaoyin State Key Laboratory of Hydrosience and Engineering, Department of Hydraulic Engineering, Tsinghua University
	4:15	Estimating Groundwater Contributions to Streamflow in Headwater Catchments
		William E. Sanford Geosciences, CSU
	4:30	Water Chemistry in Changing Headwater Glacier
		Ed K. Hall Natural Resources Ecology Laboratory, Colorado State University
	4:45	Networks and Modeling Headwater Systems
		Yuefei Huang Civil Engineering, Tsinghua University

	5:00	Water Allocation and Desertification in Northwestern China from a Social Science Perspective
		KuoRay Mao Department of Sociology, Colorado State University
	5:15	Closing Questions and Remarks
		Discussion led by Steven Fassnacht and Melinda Laituri CSU

March 23 6:00 pm Hydrology Days 2016 ends

		Compendium of I-WATER Symposium Presentations
		Chair: Professor Jorge A Ramirez Department of Civil and Environmental Engineering, CSU
		I-WATER: Integrated Water Atmosphere Ecosystem Education and Research - IGERT Program at CSU
I-WATER		Soil and waterborn ameeoba act as long-term environmental reservoirs of pathogenic bacteria
		David Markman Department of Biology, Colorado State University
I-WATER		Stream Algae Nutrient Limitation Along an Elevation Gradient in the Poudre Watershed, Colorado
		Whitney S. Beck Department of Biology and Graduate Degree Program in Ecology, Colorado State University
I-WATER		Algal blooms in the alpine – investigating the coupled effects of chronic nitrogen deposition and climate change on alpine lakes
		Isabella A. Oleksy, Jill S. Baron Natural Resource Ecology Laboratory, Colorado State University
I-WATER		Can stream restoration remedy the nutrient pollution problem?
		Roderick W. Lammers and Brian P. Bledsoe Department of Civil and Environmental Engineering, Colorado State University
I-WATER		High elevation lakes in a changing climate
		Kyle Christianson Department of Fish, Wildlife and Conservation Biology, Colorado State University
I-WATER		Early warning system for east Colorado ranchers to reduce N deposition in Rocky Mountain National Park
		Aaron J. Piña, Russ S. Schumacher, Brock Faulkner, and A. Scott Denning Department of Atmospheric Science, Colorado State University
I-WATER		Dipsa: A Video Game for Stakeholder Engagement when Planning Future Water Resources
		Andre Q. Dozier Department of Civil and Environmental Engineering, Colorado State University
I-WATER		Connectivity of runoff and sediment from hillslope to watershed-scale in the High Park Fire
		Codie Wilson, Stephanie Kampf, Sandra Ryan Department of Geosciences, Colorado State University
I-WATER		Defining Dominant Discharge: A Sediment Yield Perspective
		Joel Sholtès Colorado State University
I-WATER		Simulating the 2012 High Plains drought using three single column models (SCM)
		Isaac D. Medina Department of Atmospheric Science, Colorado State University

March 23	9:00	Poster Session
		Chair: Professor Jorge A Ramirez Department of Civil and Environmental Engineering, CSU
		North Ballroom - Lory Student Center
		Adapting subsurface drip irrigation system to deficit irrigation
		Manijeh Mahmoudzadeh Varzi and Ramchand Oad Department of Civil and Environmental Engineering, Colorado State University
		Channel Initiation of Headwater Streams in Western Colorado
		Krista K. Garrett and Ellen E. Wohl Department of Geosciences, Colorado State University
		Measurements needed to ground-truth surface soil water content across a homogenous terrain
		Rachel Habermehl, Steven R. Fassnacht and Anna Pfohl ESS-Watershed Science, Colorado State University
		The influence of lateral hydrologic connectivity on ecosystem metabolism in an active beaver meadow
		Pam Wegener, Tim Covino, Stephanie Kampf, Shad Lacy, and Ellen Wohl Ecosystem Science and Sustainability Department, Colorado State University
		Should We Care About Frost? The Relevance of Sublimation onto the Snowpack
		Jacob Olson, Connor Mitts, Steven R. Fassnacht, Anna K.D. Pfohl ESS-Watershed Science, Colorado State University
		Examining trends in streamflow in the Southern Rocky Mountains
		Anna K. D. Pfohl, Steven R. Fassnacht ESS-Watershed Science, Colorado State University
		Hydrologic response along the intermittent-persistent snow transition of the Western U.S.
		John C. Hammond, Freddy Saavedra and Stephanie Kampf Department of Geosciences, Colorado State University
		Assessment and management of saline irrigation-return flows in areas affected by tile drain networks
		Miles B. Daly, Ryan T. Bailey, Timothy K. Gates Department of Civil and Environmental Engineering, Colorado State University
		Patterns of Snowmelt Rates across the Southern Rocky Mountains, U.S.A.
		Amanda N. Weber and Steven R. Fassnacht ESS-Watershed Science, Colorado State University
		Mapping Snow Surfaces Using Photogrammetry Versus Lidar
		R. Allen Gilbert Jr. and Steven R. Fassnacht ESS-Watershed Science, Colorado State University
		Environmental flows: research science versus applied science
		Robert T Milhous Hydrologist, Fort Collins, Colorado
		Combining Mongolian Herder and Station Observations of Hydro-climate Change
		Sukh Tumenjargal, Steven R. Fassnacht, Arren Mendezona Allegretti, Niah B.H. Venable, Maria E. Fernandez-Gimenez, Batjav Batbuyanand and Melinda J. Laituri ESS-Watershed Science, Colorado State University and National Security Council, Government of Mongolia, Ulaanbaatar, Mongolia

	Benthic Community Structure along a Disturbance Regime - Vulnerability to Extreme Flooding
	Scott Morton, NL Poff, Erin Larson, Boris Kondratieff, Rachel Harrington, Kayce Anderson, Chris Funk, Alex Flecker Department of Biology, Colorado State University
	Implications of Hydraulic Conditions of the San Acacia Reach for the Rio Grande Silvery Minnow
	Corinne Horner Department of Civil and Environmental Engineering, Colorado State University
	Impact of Climate Change on Spring Discharge in the White Mesa Cultural and Conservation Area, Manti-La Sal National Forest, Southeastern Utah
	Kenneth L. Larsen, Skyler K. Tulley, Janelle E. Gherasim, Paul E. Morris, Jared R. Abbott, Ephram C. Matheson, Brock O. Howell, Daniel J. Zacharias, and Steven H. Emerman Department of Earth Science, Utah Valley University