Conference Program

AGU Hydrology Days 2017

March 20 - March 22, 2017

Program at a Glance

March 20		March 21		March 22	
9 am	Registration	9 am	Registration	8 am	Registration
				8 am	Hydraulics
	Mid-morning break		Mid-morning break		Mid-morning break
10 am	Global Water - BMPs - Irrigation - Water Quality	10 am	Eco-Hydrology	10 am	Ground Water - Contaminants - Remediation
12 - 2 pm	Lunch Borland Lecture in Hydrology	12 - 2 pm	Lunch Hydrology Days Award Lecture	12 - 2 pm	Lunch Borland Lecture in Hydraulics
2 pm	Water Management	2 pm	River Morphodynamics	2 pm	River Mechanics
					Confucius Institute Session I: Challenges
	Mid-afternoon break		Mid-afternoon break		Mid-afternoon break
4 pm	Soil Moisture - Climate - Hydrology	4 pm	Poster Session	4 pm	Erosion and Sedimentation
					Confucius Institute Session II: Opportunities
					World Water Day Celebration
					Hydrology Days Ends

		Monday
Date	Time	Session
March 20	9:00 am	Registration - Grey Rock Room 290 - Lory Student Center
March 20	10:00 am	Global Water - Irrigation - BMPs - Water Quality
		Co-Chairs: Professor Timothy K. Gates and Professor Ryan T Bailey Department of Civil and Environmental Engineering, CSU Grey Rock Room 290 - Lory Student Center
	10:00	Brominated THMs: Bromide Source Identification, Characterization and Geochemical Fingerprinting
		Alicia Shogbon, Kenneth Carlson and Randy Bassett Department of Civil and Environmental Engineering, Colorado State University
	10:15	Aerodynamic methods for estimating turbulent fluxes over irrigated crops
		Mahmoud Osman, Jose Chavez, Karan Venayagamoorthy Department of Civil and Environmental Engineering, Colorado State University
I-WATER	10:30	Incorporating Perceptions of Use and Risk in a Mixed-Methods Assessment of Change along the Urban/Rural Fringe of Cuzco, Peru: Applications for Sustainable Watershed Management
		Alicia Tyson Department of Ecosystem Science and Sustainability, Colorado State University
	10:45	Sustainable Transfer of Innovative Drinking Water Technology to Sub-Saharan Africa
		Jessica L. Baker and Subhas Karan Venayagamoorthy Department of Civil and Environmental Engineering, Colorado State University
I-WATER	11:00	Measuring Psychological Impacts of Collaborative Modeling in African Mountain Systems
		Cara Steger Graduate Degree Program in Ecology, Colorado State University
	11:15	Stochastic Estimation of Nonpoint-Source Return Flows and Pollutant Mass Loading to Two Reaches of the Arkansas River in Colorado
		John T. Cox and Timothy K. Gates Department of Civil and Environmental Engineering, Colorado State University
	11:30	Evaluating Best Land and Water Management Practices to Improve Water Quality Using a Coupled Stream-Aquifer Reactive Transport Model
		Christopher D. Shultz, Timothy K. Gates, and Ryan T. Bailey Department of Civil and Environmental Engineering, Colorado State University
	11:45	Barriers to Sprinkler Irrigation Adoption in Colorado's Lower Arkansas River Valley: Facts, Fiction, and Water Quality Impacts
		Tony Orlando, Dana Hoag and Timothy K. Gates Department of Agricultural and Resource Economics, Colorado State University
March 20	12:00 pm	Lunch - North Ballroom - Lory Student Center
	1:00 pm	Borland Lecture in Hydrology - North Ballroom - Lory Student Center
		Soil Moisture Remote Sensing: Status and Outlook Thomas J. Jackson Hydrology and Remote Sensing Laboratory, USDA-ARS, Beltsville, MD

March 20	2:00 pm	Water Management
		Chair: Professor Neil S. Grigg Department of Civil and Environmental Engineering, CSU Grey Rock Room 290 - Lory Student Center
	2:00	Urban water supply vulnerability: sealing the failure paths
		Neil S. Grigg Department of Civil and Environmental Engineering, Colorado State University
	2:15	State Politics, Water Supply, and Systems Engineering
		Edward M. Weaver Department of Civil and Environmental Engineering, Colorado State University
I-WATER	2:30	Hydroeconomic modeling framework for assessing vulnerability to water demands in arid regions
		André Dozier, Mazdak Arabi, Chris Goemans, Benjamin Wostoupal, Yao Zhang, and Keith Paustian Civil and Environmental Engineering, Colorado State University
	2:45	The Importance of accounting for well capacity in hydro-economic modeling
		R. Aaron Hrozencik, Dale Manning, Jordan Suter, Chris Goemans and Ryan Bailey Department of Agricultural and Resource Economics, Colorado State University
	3:00	Application of Stochastic Dynamic Programming and HEC-ResSIM for Development of Forecast-based Operational Rules for Lake Mendocino in the Russian River Basin, California
		Matthew E. Peacock, John W. Labadie, Lynn. E. Johnson Department of Civil and Environmental Engineering, Colorado State University
	3:15	Smart Water Grid application to Geumsan City, South Korea
		Seongjoon Byeon, Pierre Y. Julien and Hwa Young Ki Department of Civil and Environmental Engineering, Colorado State University
	3:30	Fine-Tuning Artificial Neural Network Parameters for Modeling Basin-wide Stream-Aquifer Interactions
		Faizal Rohmat, John W. Labadie, and Timothy K. Gates Department of Civil and Environmental Engineering, Colorado State University

March 20	3:45 pm	Mid-afternoon break

March 20	4:00 pm	Climate - Hydrology - Soil Moisture
		Chair: Professor Jeffrey D. Niemann Department of Civil and Environmental Engineering, CSU Grey Rock Room 290 - Lory Student Center
	4:00	A Review of the 2016 Water Year in Colorado
		Nolan Doesken, Rebecca Bolinger and Peter Goble Colorado Climate Center, Department of Atmospheric Science, Colorado State University

	4:15	South Korean Precipitation Variability in association with Large Scale Climate Patterns
		Jai Hong Lee, Pierre Y. Julien, and Jorge A. Ramirez Department of Civil and Environmental Engineering, Colorado State University
	4:30	Surface Flux Trends and Patterns in Western United States
		Jeremy Giovando and Jorge A. Ramirez Department of Civil and Environmental Engineering, Colorado State University
	4:45	Field-scale estimation of precipitation by cosmic rays
		Robert H. Erskine, Timothy R. Green, Trenton E. Franz, and Darin Desilets Deptartment of Civil and Environmental Engineering, Colorado State University
	5:00	An Evaluation of Downscaling Soil Moisture without Local Calibration
		Nicholas R. Grieco, Jeffrey D. Niemann, Timothy R. Green, and Andrew S. Jones Department of Civil and Environmental Engineering, Colorado State University
	5:15	Incorporating Channel Network Type in a Nonlinear Synthetic Unit Hydrograph Method
		Kelsey A. Czyzyk, Sediqa Hassani, Jeffrey D. Niemann, and Jorge Gironás Department of Civil and Environmental Engineering, Colorado State University

March 20 5:30 pm Adjourn

		Tuesday
Date	Time	Session
March 21	9:00 am	Registration - Grey Rock Room 290 - Lory Student Center
March 21	10:00 am	Eco-Hydrology
		Chair: Professor Ryan Morrison Department of Civil and Environmental Engineering, CSU Grey Rock Room 290 - Lory Student Center
	10:00	Variation in Aquatic Macroinvertebrate Responses to Predation and Temperature: Mechanisms of Trophic Interactions
		Scott G. Morton and N. LeRoy Poff Department of Biology, Colorado State University
I-WATER	10:15	Influence of experimental, environmental, and geographic factors on nutrient limitation patterns in freshwater streams
		Whitney S. Beck, Amanda T. Rugenski, and N. LeRoy Poff Department of Biology and Graduate Degree Program in Ecology, Colorado State University
I-WATER	10:30	Soil and waterborne amoeba can act as environmental reservoirs of pathogenic bacteria under certain precipitation regimes
		David Markman, Michael Antolin, Richard Bowen, William Wheat, Michael Woods, and Mary Jackson Department of Biology, Colorado State University
I-WATER	10:45	Climate effects on high elevation lakes: the influence of lake specific parameters
		Kyle Christianson, Brett Johnson and Douglas Silver Department of Fish, Wildlife and Conservation Biology, Colorado State University
I-WATER	11:00	Uptake and Transformation of Nitrate in Agricultural Tailwater Wetlands, Weld County, Colorado
		Erick A Carlson Forest and Rangeland Stewardship, GDPE, I-WATER
I-WATER	11:15	Location and Intensity of Changes to Ecosystem Services of Irrigated Agriculture: A case study in Weld County, Colorado
		Erick A Carlson Forest and Rangeland Stewardship, GDPE, I-WATER
	11:30	A Novel Regional Approach for Estimating Ecological Streamflow Regimes in Ungaged Basins Combining Hydrological and Statistical Modeling
		Stephen K. Adams and Brian P. Bledsoe Department of Civil and Environmental Engineering, Colorado State University
March 21	12:00 pm	Lunch - North Ballroom - Lory Student Center
	1:00 pm	Hydrology Days Award Lecture - North Ballroom - Lory Student Center
		Climate and humans as amplifiers of hydro-ecologic change: science and policy implications for intensively managed landscapes Professor Efi Foufoula-Georgiou Department of Civil and Environmental Engineering, University of California, Irvine

March 21	2:00 pm	River Morphodynamics
		Chair: Professor Peter A Nelson Department of Civil and Environmental Engineering, CSU Grey Rock Room 290 - Lory Student Center
	2:00	Bedload sheet characteristics under steady versus unsteady flow
		Aaron Schoelkopf, Jacob A. Morgan, and Peter A. Nelson Department of Civil and Environmental Engineering, Colorado State University
	2:15	Morphological changes in the middle Elwha River, Washington following dam removal
		Jacob A. Morgan, Peter A. Nelson, and Daniel J. Brogan Department of Civil and Environmental Engineering, Colorado State University
	2:30	Numerical simulation of alluviation in bedrock channels
		Jongseok Cho and Peter A. Nelson Department of Civil and Environmental Engineering, Colorado State University
	2:45	Alternate bar dynamics in response to increases and decreases of sediment supply
		Andrew R. Bankert and Peter A. Nelson Department of Civil and Environmental Engineering, Colorado State University
	3:00	How disturbing: The complications of sequential fire and floods in mountain catchments
		Daniel J. Brogan, Peter A. Nelson, Lee H. MacDonald and Jacob A. Morgan Department of Civil and Environmental Engineering, Colorado State University
	3:15	Stratigraphic Feedbacks on Alternate Bar Morphology
		Ryan A. Brown and Peter A. Nelson Department of Civil and Environmental Engineering, Colorado State University
I-WATER	3:30	Modifying Bagnold's bedload transport equation for use in watershed-scale channel incision models
		Roderick W. Lammers and Brian P. Bledsoe Department of Civil and Environmental Engineering, Colorado State University

March 21 3:45 pm Mid-afternoon break

March 21	4:00 pm	Poster Session
		Chair: Professor Timothy K. Gates Department of Civil and Environmental Engineering, CSU North Ballroom - Lory Student Center
	1	Mountain meadow source-sink dynamics: Disentangling legacy land-use effects on water and fluvial carbon storage relationships
		Tristan Weiss, Tim Covino, Ellen Wohl, and Deanna Laurel Department of Ecosystem Science and Sustainability, Colorado State University
	2	New Water Right Accounting Procedure
		Weimin Li Department of Civil and Environmental Engineering, Colorado State University

	3	Braided-Channel Network Influence on Bed Sediment Transport: A Laboratory Flume Study
		Dylan L. Armstrong and Robert Ettema Department of Civil and Environmental Engineering, Colorado State University
	4	Reducing emerging contaminants in ground and surface waters: Optimizing contaminant removal in animal waste prior to land application
		Victoria Larson and Susan K De Long Department of Civil and Environmental Engineering, Colorado State University
	5	Hydrologic Characterization of the Fountain Formation: Prospective Aquifer Storage and Recovery Targets
		Daniel F. Collazo Department of Geosciences, Colorado State University
	6	Ground-based multispectral remote sensing to estimate actual crop coefficients for alfalfa and grass pastures in the western slope Colorado
		Sumit Gautam, Perry Cabot, and José L. Chávez Department of Civil and Environmental Engineering, Colorado State University
	7	Assessing Biological and Physical Controls on Persistent Nutrient Losses in Severely-Burned Watersheds
		Allison E. Rhea, Timothy Covino, Charles Rhoades, and Timothy Fegel Department of Ecosystem Science and Sustainability, Colorado State University
	8	Assessing Conservation Effects of Agricultural Management Practices in Irrigated River Basins
		Olivia Jobin, Ali Tasdighi, and Mazdak Arabi Department of Civil and Environmental Engineering, Colorado State University
	9	Gravel transport rates in Rocky Mountain streams for normal annual highflow events
		Kristin Bunte, Kurt W. Swingle, Rob Ettema, Steven R. Abt and Dan A. Cenderelli Department of Civil and Environmental Engineering, Colorado State University
	10	Two 1970's methods for prescribing instream flow regimens
		Robert T Milhous Hydrologist, Fort Collins, Colorado
	11	Monte Carlo simulation for Diyala River basin in Iraq utilizing VIC model
		Saddam Q. Waheed and Jorge A. Ramirez Department of Civil and Environmental Engineering, Colorado State University

March 21 6:00 pm Adjourn

		Wednesday
Date	Time	Session
March 22	8:00 am	Registration - Grey Rock Room 290 - Lory Student Center
March 22	8:00 am	Hydraulics
		Chair: Professor Subhas Karan Venayagamoorthy Department of Civil and Environmental Engineering, CSU Grey Rock Room 290 - Lory Student Center
	8:00	Use of the Manning Equation for Estimating the Discharge of High-Gradient Canals and Natural Streams
		Henintsoa Rakotoarisaona, Ashley A. Ostraff, Nicholas Udy, Janelle Gherasim, Allison Stallings, Jeremy Saldivar, Kenneth Larsen, Sarah Allen, Morgan Abbott, and Steven H. Emerman Department of Earth Science, Utah Valley University, Orem, Utah
	8:15	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
	8:30	Flood Wave Propagation Caused by a Tailing Dam Failure Fundão Dam Case, Brazil
		Marcos C. Palu and Pierre Y. Julien Department of Civil and Environmental Engineering, Colorado State University
	8:45	Uncertainty analysis of flow velocity measurements using LDA and ADV in laboratory experiments
		Alex Carpenter, Amrapalli Garanaik, Subhas K. Venayagamoorthy and Timothy K. Gates Department of Civil and Environmental Engineering, Colorado State University
	9:00	Assessment of small scale anisotropy in stably stratified turbulent flows
		Amrapalli Garanaik and Subhas K. Venayagamoorthy Department of Civil and Environmental Engineering, Colorado State University
	9:15	On the propagation of gravity currents past a submerged array of cylinders
		Jian Zhou, Claudia Cenedese, Tim Williams, Megan Ball, Subhas K. Venayagamoorthy, and Roger Nokes Department of Civil and Environmental Engineering, Colorado State University
	9:30	Influence of inlet/outlet location on hydraulic disinfection efficiency of contact tanks
		Yishu Zhang and Subhas Karan Venayagamoorthy Department of Civil and Environmental Engineering, Colorado State University

March 22	9:45 am	Mid-morning break

March 22	10:00 am	Groundwater - Contaminants - Remediation
		Chair: Professor Professor Thomas C Sale Department of Civil and Environmental Engineering, CSU Grey Rock Room 290 - Lory Student Center
	10:00	The use of Oleophilic Bio-Barriers to prevent sheens at hydrocarbon contaminated sites
		Laura Tochko and Thomas Sale

		Department of Civil and Environmental Engineering, Colorado State University
	10:15	Storm-event groundwater recharge in a green infrastructure watershed
		Aditi S. Bhaskar Department of Civil and Environmental Engineering, Colorado State University
	10:30	Assessment of Water Quality and Genotoxicity Downstream of NPDES Oil and Gas Produced Water Discharges
		Molly McLaughlin, Jens Blotevogel, J. Lucas Argueso and Thomas Borch Department of Civil and Environmental Engineering, Colorado State University
	10:45	Assessment of using mine tailings and waste rock in waster balance covers
		Mohammad R. Gorakhki and Christopher A. Bareither Department of Civil and Environmental Engineering, Colorado State University
	11:00	Hydraulic conductivity of geosynthetic clay liners in mining applications
		Joel Conzelmann and Joseph Scalia Department of Civil and Environmental Engineering, Colorado State University
	11:15	A new inverse method for the simultaneous estimation of aquifer thickness and boundary conditions based on borehole and hydrodynamic measurements
		Fangyu Gao and Ye Zhang Department of Geology and Geophysics, University of Wyoming
	11:30	Reactor design for electrolytic treatment of the persistent organic pollutant 1,4-dioxane in groundwater
		P. Maxine Cottrell, Tom C. Sale, and Jens Blotevogel Department of Civil and Environmental Engineering, Colorado State University
March 22	12:00 pm	Lunch - North Ballroom - Lory Student Center
	1:00 pm	Borland Lecture in Hydraulics - North Ballroom - Lory Student Center
		Intraseasonal Disturbances and their Role in Air-Sea Interactions in Equatorial Regions Professor H. J. S. Fernando Departments of Civil & Environmental Engineering and Earth Sciences and Aerospace and Mechanical Engineering, University of Notre Dame

March 22	2:00 pm	River Mechanics
		Chair: Professor Robert Ettema Department of Civil and Environmental Engineering, CSU Grey Rock Room 290 - Lory Student Center
	2:00	Dynamics of flows in river bends
		Aseperi Oladapo and S. Karan Venayagamoorthy Department of Civil and Environmental Engineering, Colorado State University
	2:15	Where is instream wood most geomorphically effective? Investigating trends in wood-induced sediment and POM storage at the headwaters of North Saint Vrain Creek, CO
		Andrew Pfeiffer and Ellen Wohl Department of Geosciences, Colorado State University
	2:30	Monitoring the effects of river realignment on the Upper Colorado River, Rocky Mountain National Park
		Matthew Sparacino and Sara Rathburn Department of Geosciences, Colorado State University
	2:45	Utilizing changes in vegetation to identify ice effects on the banks of the Middle Reach of the Susitna River, Alaska
		Renee Vandermause and Robert Ettema Department of Civil and Environmental Engineering, Colorado State University
I-WATER	3:00	Do investments in wildfire risk reduction lead to positive financial returns? A return on investment analysis of a payment for ecosystem services program in Colorado
		Codie Wilson, Kelly W Jones, Jeffery B Cannon, Freddy A Saavedra, Stephanie K Kampf, Brett Wolk, Rob Addington, Antony S Cheng, Benjamin Gannon, Yu Wei, Lee MacDonald Department of Geosciences, Colorado State University
I-WATER	3:15	Post-fire precipitation thresholds and treatment efficacy from plot to watershed-scale
		Codie Wilson, Stephanie K Kampf and Joseph Wagenbrenner Department of Geosciences, Colorado State University
	3:30	Evaluation of fish passage at whitewater parks using 2D and 3D hydraulic modeling
		Travis L. Hardee, Peter A. Nelson, Matt C. Kondratieff, and Brian P. Bledsoe Department of Civil and Environmental Engineering, Colorado State University

March 22 3:45 pm Mid-afternoon break

March 22	4:00 pm	Erosion - Sedimentation
		Chair: Professor Pierre Y Julien Department of Civil and Environmental Engineering, CSU Grey Rock Room 290 - Lory Student Center
	4:00	Developing a Sediment Budget for the Upper Elk River Watershed, Northwestern California: Do Natural or Anthropogenic Sources Dominate?
		Lee H. MacDonald; Michael W. Miles, Shane Beach, and Nick Harrison; Matthew R. House; Patrick Belmont; and Ken L. Ferrier Natural Resource Ecology Lab, Colorado State University

	4:15	Estimating the Total Sediment Load using MEP and SEMEP
		Chun-Yao Yang and Pierre Y. Julien Department of Civil and Environmental Engineering, Colorado State University
	4:30	Multiple regressions analysis and model for sediment yield in South Korea
		Woochul Kang and Pierre Y. Julien Department of Civil and Environmental Engineering, Colorado State University
	4:45	Testing hydraulic efficiency of pressure difference samplers while varying mesh size and type
		Kristin Bunte, Matthew Klema, Taylor Hogan, Christopher Thornton Department of Civil and Environmental Engineering, Colorado State University
	5:00	Sediment Transport and Effects of Restoration Flows and Subsidence on Predicted Levee Capacities
		Susan Cundiff, Chad Morris and Stuart Trabant Tetra Tech Inc., Fort Collins, CO
	5:15	Estimation of Specific Degradation of Watersheds using Rainfall Erosivity
		Joonhak Lee and Pierre Julien Department of Civil and Environmental Engineering, Colorado State University
	5:30	Mud Flow Diversion Management in The Porong River, Indonesia
		Neil Andika and Pierre Y. Julien Department of Civil and Environmental Engineering, Colorado State University
March 22	5:30 pm	Reception and Refreshments Lory Student Center Theater
	6:15 pm	Dr. Norm Evans Endowed Lecture Series and World Water Day Celebration 2017
		2017 Distinguished Guest Speaker: Eleanor Allen, CEO Water For People "Keeping Water Flowing For Generations to Come" Lory Student Center Theater

March 22	2:00 pm	Confucius Institute Session I: Challenges
		Chair: Professor Steven R. Fassnacht Department of EcoSystem Science and Sustainability, CSU Cherokee Park Room - Lory Student Center
	2:00	Welcome and Symposium Introduction
		Ashley Stokes Assistant Vice President for the Office of Engagement at Colorado State University
	2:15	Introduction of Topics I: Challenges
		Steven R. Fassnacht Department of Ecosystem Science and Sustainability, Colorado State University
	2:20	Local state corporatism and Water Governance: How Tax Farming Contributed to Desertification in NW China
		KuoRay Mao Department of Sociology, Colorado State University
	2:35	Does remote sensing can improve the robust of monitoring evapotranspiration and precipitation
		Zhongjing Wang School of Civil Engineering, Tsinghua University, Beijing, China
	2:55	Fine Resolution Hydrological Variability to Estimate Uncertainty
		Steven R. Fassnacht, Anna K.D. Pfohl and Juan Ignacio López-Moreno EASC-Watershed Science, Colorado State University
	3:10	Monitoring on the global lakes using multi-resource data
		Mingguo Ma School of Geographical Sciences, South West University, Chongqing, China

March 22 3:30 pm Mid-afternoon break

March 22	3:45 pm	Confucius Institute Session II: Opportunities
		Chair: Professor Melinda Laituri Department of EcoSystem Science and Sustainability, CSU Cherokee Park Room - Lory Student Center
	3:45	Introduction of Topics II: Opportunities
		Melinda J. Laituri Dept of Ecosystem Science and Sustainability, Colorado State University
	4:00	Using Numerical Models to Test Hypotheses by Filtering out Model Pa-rameter Uncertainties
		Guo-Yue Niu and Ahmed S. Elshall, Ming Ye, and Greg A. Barron-Gafford Department of Hydrology and Atmospheric Sciences, The University of Arizona
	4:20	The Spatial Distribution of Fine Resolution Snow Surface Roughness
		Eric S. Thomas and Steven R. Fassnacht ESS-Watershed Science, Colorado State University

	4:35	The Uncertainty of Snowmelt Basal Outflow using over 100 Snow Lysimeters
		Ryan W. Webb, Mark W. Williams, and Tyler A. Erickson Institute of Arctic and Alpine Research, University of Colorado-Boulder
	4:55	A Long-Term Context for Snow Water Equivalent Trends in Rocky Mountain National Park
		Glenn G. Patterson and Steven R. Fassnacht EASC-Watershed Science, Colorado State University
	5:10	Concluding Questionas and Remarks
		Discussion led by Melinda Laituri and Steven Fassnacht Department of Ecosystem Science and Sustainability, Colorado State University
March 22	5:30 pm	Reception and Refreshments Lory Student Center Theater
	6:15 pm	Dr. Norm Evans Endowed Lecture Series and World Water Day Celebration 2017
		2017 Distinguished Guest Speaker: Eleanor Allen, CEO Water For People "Keeping Water Flowing for Generations to Come" Lory Student Center Theater

March 22 6:00 pm Hydrology Days 2017 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	Modifying Bagnold's bedload transport equation for use in watershed-scale channel incision models
	Roderick W. Lammers and Brian P. Bledsoe Department of Civil and Environmental Engineering, Colorado State University
I-WATER	Hydroeconomic modeling framework for assessing vulnerability to water demands in arid regions
	André Dozier, Mazdak Arabi, Chris Goemans, Benjamin Wostoupal, Yao Zhang, and Keith Paustian Civil and Environmental Engineering, Colorado State University
I-WATER	Soil and waterborne amoeba can act as environmental reservoirs of pathogenic bacteria under certain precipitation regimes
	David Markman, Michael Antolin, Richard Bowen, W. Wheat, Michael Woods, and M. Jackson Department of Biology, Colorado State University
I-WATER	Climate effects on high elevation lakes: the influence of lake specific parameters
	Kyle Christianson, Brett Johnson and Douglas Silver Department of Fish, Wildlife and Conservation Biology, Colorado State University
I-WATER	Do investments in wildfire risk reduction lead to positive financial returns? A return on investment analysis of a payment for ecosystem services program in Colorado
	Codie Wilson, Kelly W Jones, Jeffery B Cannon, Freddy A Saavedra, Stephanie K Kampf, Brett Wolk, Rob Addington, Antony S Cheng, Benjamin Gannon, Yu Wei, Lee MacDonald Department of Geosciences, Colorado State University
I-WATER	Incorporating Perceptions of Use and Risk in a Mixed-Methods Assessment of Change along the Urban/Rural Fringe of Cuzco, Peru: Applications for Sustainable Watershed Management
	Alicia Tyson Department of Ecosystem Science and Sustainability, Colorado State University
I-WATER	Influence of experimental, environmental, and geographic factors on nutrient limitation patterns in freshwater streams
	Whitney S. Beck, Amanda T. Rugenski, and N. LeRoy Poff Department of Biology and Graduate Degree Program in Ecology, Colorado State University
I-WATER	Uptake and Transformation of Nitrate in Agricultural Tailwater Wetlands, Weld County, Colorado
	Erick A Carlson Forest and Rangeland Stewardship, GDPE, I-WATER
I-WATER	Location and Intensity of Changes to Ecosystem Services of Irrigated Agriculture: A case study in Weld County, Colorado
	Erick A Carlson Forest and Rangeland Stewardship, GDPE, I-WATER
I-WATER	Post-fire precipitation thresholds and treatment efficacy from plot to watershed-scale
	Codie Wilson, Stephanie K Kampf and Joseph Wagenbrenner Department of Geosciences, Colorado State University