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Innovations in Managing Western Water: New Approaches for Balancing Environmental, Social and Economic Outcomes (Martz Summer Conference, June 11-12)

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2015

6-11-2015

### AGENDA: Innovations in Managing Western Water: New Approaches for Balancing Environmental, Social, and Economic Outcomes

University of Colorado Boulder. Getches-Wilkinson Center for Natural Resources, Energy, and the Environment

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# GWC

Getches-Wilkinson Center  
for Natural Resources, Energy,  
and the Environment

## 2015 Martz Summer Conference



### **Innovations in Managing Western Water: New Approaches for Balancing Environmental, Social, and Economic Outcomes**

**2015 Clyde Martz Summer Conference**

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**University of Colorado School of Law**

**Wolf Law Building, Wittemyer Courtroom**

**Thursday, June 11<sup>th</sup> and Friday, June 12<sup>th</sup>, 2015**

***Presented by the Getches-Wilkinson Center for Natural Resources,  
Energy, and the Environment***



**COLORADO LAW**  
UNIVERSITY OF COLORADO BOULDER

## Event Sponsors

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## 36<sup>th</sup> Annual Martz Summer Conference

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Clyde O. Martz was a father of natural resource law in the United States. He was an exemplary teacher, mentor, counselor, advocate, and a professor of natural resources law for 15 years at the Colorado Law. Professor Martz was one of the founders of the Rocky Mountain Mineral Law Foundation and of the Law School's Natural Resources Law Center, which later became the Getches-Wilkinson Center for Natural Resources, Energy, and the Environment. In 1951, he assembled and published the first natural resources law casebook, combining the previously discrete subjects of water law, mining law, and oil and gas law.

In 1962, Professor Martz joined the law firm of Davis Graham & Stubbs. During his tenure at Davis, Graham & Stubbs, he took periodic leaves of absence to serve as the Assistant Attorney General of the Lands and Natural Resources Division of the U.S. Department of Justice (1967-69), a Colorado Special Assistant Attorney General (1971-75), and as the Solicitor of the Department of the Interior (1980-81). He retired from the firm in the late 1990s and passed away in 2010 at the age of 89.



The Getches-Wilkinson Center's annual summer conference hosts outstanding faculty, scholars, public officials, and students who gather to discuss the complex and fascinating issues that dominate the field of natural resources law and policy. The GWC will administer the summer program in a way that honors Clyde's singular contributions to the profession.

## Conference Introduction

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Many aspects of western water allocation and management are the product of independent and uncoordinated actions, several occurring a century or more ago. However, in this modern era of water scarcity, it is increasingly acknowledged that more coordinated and deliberate decision-making is necessary for effectively balancing environmental, social, and economic objectives. In recent years, a variety of forums, processes, and tools have emerged to better manage the connections between regions, sectors, and publics linked by shared water systems. In this event, we explore the cutting edge efforts, the latest points of contention, and the opportunities for further progress.

# Agenda Day One: Thursday, June 11th

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**7:30-8:30 Welcome and Registration**

**8:30-8:45 Welcoming Remarks**

## Session One: The Rise of State Water Planning

Water planning at scales larger than individual water systems is obviously not a new idea; in fact, 2015 marks the 50<sup>th</sup> anniversary of the Water Resources Planning Act. But in the West, the word “plan” remains a 4-letter word to many supporters of the laissez-faire traditions in water management, so while some states have a long history of planning, others—notably Colorado—are taking their first steps.

**Morning session moderated by: Britt Banks, Getches-Wilkinson Center**

## 8:45-10:00 Experiences and Lessons for Some of the Most Extensive Efforts

- California     **Ellen Hanak, Public Policy Institute of California**
- Texas         **Ron Kaiser, Texas A&M University**
- Arizona       **Kathy Jacobs, University of Arizona**

## 10:00-10:30 Morning Networking Break (Refreshments provided in Boettcher Hall)

## 10:30-12:10 The Colorado Water Plan

10:30 to 10:50     Overview and Status Report  
**Lauren Ris, Colorado Department of Natural Resources**

10:50 to 11:40     Some Reactions and Responses (Panel Discussion)

- **Chris Treese, Colorado River Water Conservation District**
- **Bart Miller, Western Resource Advocates**
- **Mark Pifher, Colorado Springs Utilities**
- **Carlyle Currier, Currier Ranch**

11:40 to 12:10     GWC Task Force Report  
**Larry MacDonnell, University of Colorado Law School**

## 12:10-1:00 Lunch (Lunch provided in Schaden Commons, 2 floor-West End)

## **Session 2: New Supplies, Reduced Demands, and Reallocation: Reconciling Competing Visions for the Future**

Historically, water planning was little more than the identification of new supply projects, sometimes individually, and sometimes as part of larger, basin schemes. This is still an important element of the water planning dialogue. However, just as frequently today, the planning emphasis is focused on demand management or water reallocation (transfers). Each approach raises its own challenges in balancing objectives, managing participation, and implementing decisions.

**Afternoon session moderated by: Doug Kenney, Getches-Wilkinson Center**

### **1:00 to 2:45 New Supplies, Reduced Demands**

- Pursuing Reliability, Not New Yield: A New Breed of Water Infrastructure?
  - California's Bay-Delta Conveyance Problem: A Light at the End of the Tunnel(s)?  
**Jerry Meral, Natural Heritage Institute**
  - Urban Water Reliability and the Salton Sea: Can We Have Both?  
**Michael Cohen, Pacific Institute**
  - Gross Reservoir Expansion  
**Travis Bray, Denver Water**
- Stretching Supplies Further
  - The (Largely) Untold Success Story of Urban Water Conservation  
**Peter Mayer, Water Demand Management**

### **2:45-3:15 Afternoon Networking Break (Refreshments provided in Boettcher Hall)**

### **3:15 to 5:00 Agricultural Conservation and Transfers**

- Technical Challenges in Agricultural Water Conservation  
**Perry Cabot, Colorado Water Institute, Colorado State University**
- Legal Challenges and Considerations  
**Peter Nichols, Partner at Berg, Hill, Greenleaf and Ruscitti**
- The Cutting Edge in Western Alternative Water Transfers  
**Bonnie Colby, University of Arizona**
- Findings and Lessons from the Colorado River Basin Agricultural Work Group  
**Carly Jerla, Bureau of Reclamation**



## Agenda Day Two: Friday, June 12th

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### Session 3: Bringing it All Together: Familiar Challenges, New Approaches

Across the West, people are developing new ways of tackling old problems. In this session, we review some of the more intriguing efforts and emerging opportunities for further innovation.

**Morning session moderated by: Britt Banks, Getches-Wilkinson Center**

#### 8:30 to 10:30 New Partnerships

- Innovations on the Colorado River  
**Anne Castle, Stanford Woods Institute for the Environment**
- Tribes, Fish and Farmers: Lessons from the Klamath  
**Amy Cordalis, Staff Attorney Yurok Tribe**
- Instream Flows on Federal Lands: The BLM-State of Colorado MOU  
**Roy Smith, Bureau of Land Management**

**10:30-11:00 Morning Networking Break  
(Refreshments provided in Boettcher Hall)**

#### 11:00 to 12:00 Making the Water-Energy Nexus Work for the West

- Water and Oil & Gas Development: Solving Conflict Through Technology?  
**Jill Cooper, Anadarko Petroleum Corporation**
- Saving Water and Energy by Making Money: Benefits of Performance Contracting in the West  
**Rachel Brombaugh, McKinstry**

**12:00-1:00 Lunch  
(Lunch provided in Schaden Commons, 2 floor-West End)**

**1:00 to 1:15 Introducing the GWC Digital Archive**

- **Susan Nevelow Mart, University of Colorado Law Library**

**1:15 to 3:15 Advances in Law**

- Regulating Groundwater Use in California ... Finally  
**Lester Snow, California Water Foundation**
- Wrapping Up the Big Horn Adjudication: Lessons after 38 Years and 20,000 Claims  
**Ramsey Kropf, Deputy Solicitor for Water Resources, DOI**
- Challenges and Opportunities of the Expiring Columbia River Treaty  
**Barb Cosens, University of Idaho**
- Empowering the Acequias: Fixing What Wasn't Broken  
**Will Davidson, Acequia Project**

**3:15-3:45 Afternoon Networking Break  
(Refreshments provided in Boettcher Hall)**

**Session 4: Reasons for Optimism**

In this event, we have reviewed dozens of innovations in law, policy and management. In our final wrap-up panel, we ask our panelists to answer one over-arching question about these innovations, and then open the floor to audience questions and observations.

**Afternoon session moderated by: Doug Kenney, Getches-Wilkinson Center**

***3:45 to 4:45 Question: "What processes, partnerships, events, tools, or other 'innovations' provide you with optimism that the West can handle the growing stresses on its limited water supplies?"***

- **Brad Udall, Colorado Water Institute, Colorado State University**
- **Justice Greg Hobbs, Colorado Supreme Court**
- **John Fleck, Writer in Residence, University of New Mexico Water Resources Program**



## Speaker Biographies (Alphabetical by Last Name)

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**Britt Banks**  
**Getches-Wilkinson Center**

Britt Banks is the Executive Director of the Getches-Wilkinson Center for Natural Resources, Energy and the Environment at the University of Colorado Law School. He has been involved in the natural resources sector for over 20 years, as a corporate executive, attorney, consultant, teacher and researcher. Mr. Banks currently chairs the Independent Expert Review Panel at the International Council on Mining and Metals, serves on the Global Council on the Future of Mining and Metals at the World Economic Forum in Geneva, and was a founding member of the Forum's Partnering Against Corruption Initiative Task Force. He is a graduate of the University of Denver (B.S. cum laude 1983) and the University of Colorado Law School (J.D. 1988).



**Travis Bray**  
**Denver Water**

Travis Bray grew up in Craig Colorado and attended college at the University of Wyoming. He earned his Bachelor of Science in Fish and Wildlife Conservation and Management and a Masters degree in Rangeland Ecology Watershed Management/Water Resources. After graduating in 1996, Travis worked as a Research Associate for the University of Wyoming. In 1997, Travis and his family moved to Denver where he worked as an Aquatic Biologist for three years. During this time, Travis had the opportunity to travel to several States evaluating aquatic habitats and the effects of different land uses on aquatic ecosystems. Currently with Denver Water, Travis worked for five years in Raw Water Operations before transferring to the Environmental Planning group in 2005. Travis is Denver Water's Project Manager for the Moffat Collection System Project.



**Rachel Brombaugh**  
**McKinstry**

Rachel Brombaugh holds the position of Finance Manager at McKinstry, a leading design-build construction and energy services company that works to improve efficiency in the built environment. Serving as a subject matter expert on incentives, policy and financial structures, Rachel leads financial consulting services for McKinstry's customers as they navigate energy efficiency and renewable energy generation projects. Rachel also evaluates opportunities for investment, including acquisitions, technologies, and renewable energy projects, and leads market research into new market sectors and geographies. Rachel received her undergraduate degree in American History & Literature from Stanford and her MBA from the University of Washington. She is the board chair for Northwest SEED, an NGO that works to create clean energy communities in the PNW.



**Perry Cabot**  
**Colorado Water Institute,**  
**Colorado State University**

Dr. Perry Cabot is a Research Scientist and Extension Specialist at Colorado State University, based at the Orchard Mesa Agricultural Experiment Station. His primary research interests include agricultural water management, irrigation systems and sustainable fuels. He has co-authored several academic papers on agricultural issues, published in Applied

Engineering in Agriculture, Journal of Soil and Water Conservation and the journal Fuel. He received his Ph.D. in Agricultural Engineering and Land Resources from the University of Wisconsin-Madison and B.S. in Civil Engineering from Colorado State University. He has conducted international work through Engineers Without Borders and was a Fulbright Scholar (2009) in collaboration with the University of Zambia on research related to soil sustainability, irrigation practices, and bioenergy cropping. He is a Faculty Affiliate of the Department of Civil and Environmental Engineering at Colorado State University. He lives in Grand Junction, CO with his wife Leah and 2-year old son Oliver.



**Anne Castle**  
**Stanford Woods Institute for the Environment**

Anne Castle was confirmed as Assistant Secretary for Water and Science at the U.S. Department of the Interior in June 2009, and served in the position until September 2014. In this capacity, Castle oversaw water and science policy for the Department and had responsibility for the U.S. Bureau of Reclamation and the U.S. Geological Survey. Castle spearheaded the Department of the Interior's WaterSMART program, which provides federal leadership on the path toward sustainable water supplies. She was the driving force behind the 2010 Memorandum of Understanding among Interior, the Department of Energy, and the U.S. Army Corps of

Engineers addressing the development of sustainable hydropower generation, the oldest, largest, least respected, and most vilified form of renewable energy in the country. Castle also provided hands-on leadership on Colorado River issues and was the Secretary's designee to, and Chair of, the Glen Canyon Dam Adaptive Management Work Group and a champion of Minute 319 between the US and Mexico Castle is a recovering lawyer, having practiced law for 28 years in Denver, Colorado with the Rocky Mountain based law firm of Holland & Hart LLP, and specializing in water issues. Castle received a Bachelor of Science degree in applied mathematics, with honors, from the University of Colorado, College of Engineering, in 1973, Her J.D. in 1981 was also from the University of Colorado, qualifying her as a Double Buff.



**Michael Cohen**  
**Pacific Institute**

Michael Cohen is a Senior Research Associate at the Pacific Institute and is based here in Boulder. He has been a leading Salton Sea advocate for more than 17 years, developing revitalization proposals, promoting timely intervention, and writing articles, reports, and opinion pieces. Mr. Cohen is the lead author of three Pacific Institute reports on the Salton Sea: Haven or Hazard: The Ecology and Future of the Salton Sea (1999), Hazard: The Future of the Salton Sea With No Restoration Project (2006), and Hazard's Toll: The Costs of Inaction at the Salton Sea (2014). He also served on California's Salton Sea Advisory Committee. Mr. Cohen has a Master's degree in Geography, with a concentration in Resources and Environmental Quality, from San Diego State University, and a B.A. in Government from Cornell University.



**Bonnie Colby**  
**University of Arizona**

Bonnie Colby is a professor at the University of Arizona, where she has been a faculty member since 1983 in the Departments of Agricultural and Resource Economics and Hydrology and Water Resources.

She grew up in California's San Joaquin Valley, with an undergraduate degree from the University of California, Davis. Her early work on water issues was with the California Department of Food and Agriculture during intense statewide controversy over the Reclamation Reform Act. Her PhD is from the University of Wisconsin Department of Agricultural and Resource Economics.

Colby's research, teaching and outreach focus on evaluating economic tradeoffs in water and energy management, climate change adaptation, water conservation and incentive-based agreements to improve water supply reliability for agricultural, environmental and urban needs. Dr. Colby has authored over one hundred journal articles and eight books, including Risk And Resilience: The Economics Of Climate, Water and Energy In The Arid Southwest, Water Markets in Theory and Practice, Arizona Water Policy: Management Innovations in an Urbanizing, Arid Regions, Tribal Water Rights: Essays in Contemporary Law, Policy, and Economics, and Braving the Currents: Resolving Conflicts Over the Water of the American West.

Colby has provided invited testimony in her areas of expertise to state legislatures, state and federal courts and the U.S. Congress, and has taught at Harvard University's Kennedy School of Government Executive Training Programs. She works with western states, federal agencies, private firms, water districts and NGOs to develop and implement new strategies to improve water supply reliability and resolve conflicts over water.





**Jill Cooper**  
**Anadarko Petroleum Corporation**

Jill Cooper is a Corporate HSE Advisor for Anadarko Petroleum Corporation and works on global climate change, water resources, air quality, and other environmental matters for the company. She received her MBA in International Business at Thunderbird School of Global Management and continued on to receive her JD in Environmental Law at the University of Colorado Law School (1996). She has since then held several positions including the Senior Advisor to the Executive Director of Colorado Department of Public Health & Environment on environmental matters, Director of the Sustainability Division and Legal Administrator of the Air Pollution Control Division. She also practiced environmental, natural resource and sustainability law as an Attorney with Faegre & Benson LLP. Ms. Cooper was the Group Lead in the divisional environmental program for Encana Oil & Gas Inc., which included air, water, waste, land and wildlife sustainability. She specializes in sustainability, environmental and regulatory legal, management as well as oil and gas.



**Amy Cordalis**  
**Staff Attorney Yurok Tribe**

Amy Cordalis is a member of, and attorney for, the Yurok Tribe. Her family is from the Yurok village of Requa, located on the mouth of the Klamath River in Northern California. As traditional regalia holders and leaders, several generations of her family have fought for Yurok legal rights. Her connection to Yurok culture, particularly fishing, brought her into the field of law. She worked for the Native American Rights Fund and Berkey Williams LLP prior to joining the Tribe. Her practice is dedicated to the preservation of tribal sovereignty, cultural and natural resources, and tribal economic self-determination.



**Barb Cosens**  
**University of Idaho**

Barbara Cosens is a Professor with the University of Idaho College of Law and the Waters of the West Graduate Program which includes options for concurrent J.D./M.S. and J.D./Ph.D. degrees. She teaches Water Law, Water Policy, Law Science and the Environment, and leads a team taught graduate course in Interdisciplinary Methods in Water Resources. Barbara coordinates the Natural Resources and Environmental Law Program at UI. Her research interests include the integration of law and science in education, water governance, and dispute resolution; adaptive water governance and resilience; and the recognition and settlement of Native American water rights. She is a collaborator with the Utton Center and Earth Data Analysis Center at University of New Mexico and the American Indian Law Center on development of the Native American Water Right Settlement Electronic Repository and has served as a negotiator and mediator of Native American Water Right settlements. Barbara is a member of the Universities Consortium on Columbia River Governance has worked with Nigel Bankes, University of Calgary Faculty of Law, on two projects funded by the Program on Water Issues at the Munk School of Global Affairs: one on mechanisms for flexibility and adaptability in international water agreements; and the other on U.S. and Canada domestic law in international law. She is co-chair of a project made possible through support from the NSF funded National Socio-Environmental Synthesis Center, SESYNC: Adaptive Governance in Regional Water Systems to Manage Resilience in an era of Changing Climate. She spent spring 2014 as the Goyder Institute Visiting Professor in Public Sector Policy and Management at Flinders University researching adaptive water governance and water law in South Australia and the Lake Eyre Basin.



**Carlyle Currier**  
**Currier Ranch**

Carlyle Currier is a fourth generation rancher at Molina, CO. A graduate of Colorado State University, he has been very involved in organizations directing farm policy. He is currently Vice President of the Colorado Farm Bureau and a Board member of the US Meat Export Federation and is a past member of the Cattleman's Beef Promotion and Research Board. He is also very involved in water issues, serving as President of the Cottonwood Lakes Reservoir Company, Secretary of the Collbran Water Conservancy District, and a Supervisor of the DeBeque/Plateau Valley Conservation District. He represents the Colorado Basin Roundtable on the InterBasin Compact Committee (IBCC) and serves as Vice Chairman of the Colorado Agriculture Water Alliance.



**Will Davidson**  
**Acequia Project**

Will Davidson is a 2015 graduate of the University of Colorado School of Law. He grew up on the Kitsap Peninsula west of Seattle and attended St. John's College in Santa Fe New Mexico. During law school, Will volunteered with Colorado Law's Acequia Assistance Project, focusing on researching a century-old water rights dispute affecting acequias in San Luis, Colorado. Will is currently studying for the Colorado bar exam and looking forward to beginning a clerkship with Chief Judge James F. Hartmann of Colorado's Water Division One.



**John Fleck**  
**Writer in Residence**  
**University of New Mexico Water Resources Program**

John Fleck is a journalist and faculty member in the University of New Mexico Water Resources Program, where he teaches about contemporary issues in water management, institutions, and communication at the science/policy/politics interface. He's working on a book about the future of the Colorado River, "Beyond the Water Wars," to be published in 2016 by Island Press.



**Ellen Hanak**  
**Public Policy Institute of California**

Ellen Hanak is director of the PPIC Water Policy Center and a senior fellow at the Public Policy Institute of California. Under her leadership, the center has become a critical source of information and guidance for natural resource management in California. She has authored dozens of reports, articles, and books on water policy, including *Managing California's Water*. Her research is frequently profiled in the national media, and she participates in briefings, conferences, and interviews throughout the nation and around the world. Her other areas of expertise include climate change and infrastructure finance. Previously, she served as research director at PPIC. Before joining PPIC, she held positions with the French agricultural research system, the President's Council of Economic Advisers, and the World Bank. She holds a PhD in economics from the University of Maryland.





**Justice Greg Hobbs**  
**Colorado Supreme Court**

Appointed by Governor Roy Romer to the Colorado Supreme Court on April 18, 1996, Justice Hobbs is a former Adjunct Professor in Environmental Law and the Master's Program in Environmental Policy and Management, at University of Denver. Hobbs practiced law since 1986 in a variety of positions and private firms, and was a partner at *Davis, Graham & Stubbs* and senior partner at *Hobbs, Trout & Raley P.C.*

during his time in private practice. Hobbs has also served as the first assistant attorney in the Natural Resources Section for the State of Colorado and as an enforcement attorney for the United States Environmental Protection Agency. He also taught sixth grade in New York City and served in the Peace Corps. Hobbs earned his undergraduate degree in history from the University of Notre Dame in 1966. In 1971, he received his J.D. from the University of California at Berkeley.



**Kathy Jacobs**  
**University of Arizona**

Katharine Jacobs is a faculty member at the University of Arizona in the Department of Soil, Water and Environmental Science and is the Director of the Center for Climate Adaptation Science and Solutions (CCASS) within the Institute of the Environment. CCASS builds and supports climate change adaptation and assessment capacity at regional, national and international scales, based on climate science and service investments within the University.

From 2010 – 2013, Jacobs served as an Assistant Director in the Office of Science and Technology Policy (OSTP) in the Executive Office of the President. Jacobs was the director of the National Climate Assessment, leading a team of 300 authors and more than a thousand contributors who wrote the Third NCA report. She also was the lead advisor on water science and policy, and climate adaptation, within OSTP. Prior to her work in the White House, from 2006-2009 Jacobs was the Executive Director of the Arizona Water Institute, a consortium of the three state universities focused on water-related research, education and technology transfer in support of water supply sustainability. She has more than twenty years of experience as a water manager for the State of Arizona Department of Water Resources, including 14 years as director of the Tucson Active Management Area. Her research interests include water policy, connecting science and decision-making, stakeholder engagement, use of climate information for water management applications, climate change adaptation and drought planning. Ms. Jacobs earned her M.L.A. in environmental planning from the University of California, Berkeley. She has served on eight National Research Council panels and was Chair of the NRC Panel on Adapting to the Impacts of Climate Change and a member of the panel on America's Climate Choices.



**Carly Jerla**  
**Bureau of Reclamation**

Carly Jerla is an Operations Research Analyst for the Bureau of Reclamation's Lower Colorado Region in the Boulder Canyon Operations Office. She is currently on assignment to the University of Colorado's Center for Advanced Decision Support for Water & Environmental Systems in Boulder CO. Carly obtained BS Degrees in Civil and Environmental Engineering and Engineering and Public Policy from Carnegie Mellon University in 2002. She also earned her MS in Civil Engineering from the University of Colorado in 2005. Carly leads the Region's research and development of modeling applications and decision support for water operations and planning. She was Reclamation's Study Manager for the Colorado River Basin Water Supply and Demand Study and Phase 1 of the Moving Forward effort.



**Ron Kaiser**  
**Texas A&M University**

Ronald Kaiser is a Professor of Water Law and Policy at Texas A&M University and Chairs the Water Management and Hydrological Science graduate degree program. His water policy research interests focus on: (1) urban water conservation strategies; (2) water marketing; (3) environmental flows; and (4) water planning. A number of his water marketing and conservation research recommendations are incorporated in the Texas Water Code. He has published over 70 articles, two books and seven book chapters.



**Doug Kenney**  
**Getches-Wilkinson Center**

Doug Kenney is Director of the Western Water Policy Program, located within the University of Colorado Law School in the Getches-Wilkinson Center for Natural Resources, Energy and the Environment. He has written extensively on several water-related issues, including law and policy reform, river basin and watershed-level planning, climate change adaptation, and water resource economics. Among his publications are *In Search of Sustainable Water Management: International Lessons for the American West and Beyond* (2005, Edward Elgar Publishing) and *The Water-Energy Nexus in the Western United States* (2011, Edward Elgar Publishing). He is also a member of the CU Environmental Studies faculty, serves on the Board of Directors of the Universities Council on Water Resources, and is chairman of the Colorado River Research Group. He has a B.A. in biology from the University of Colorado, a M.S. in Natural Resources Policy and Administration from the University of Michigan, and a Ph.D. in Renewable Natural Resource Studies from the University of Arizona.



**Ramsey Kropf**

**Deputy Solicitor for Water Resources, DOI**

Ramsey Laursoo Kropf serves as Deputy Solicitor for Water Resources, Office of the Solicitor, at the U.S. Department of the Interior. Prior to her appointment, she was a shareholder with Patrick, Miller Kropf & Noto, P.C., a Colorado law firm with its practice limited to water resources law. From 1995 to 2014, she served as the Special Master for the Fifth Judicial District Court in Wyoming's Big Horn River General Adjudication, acting as a judicial officer and conducting hearings as necessary in the adjudication. Ms. Kropf has written and presented a variety of legal information relating to western water law, including general stream adjudications. She is a member of the American Bar Association, the ABA Section of Environment, Energy and Resources, where she served on the Section's Council, as Chair of the Section's Water Resources Committee from 2004-2006, and on the Section's Trends Newsletter Editorial Board. In addition, Ms. Kropf belongs to the Colorado Bar Association, where she has served on the executive council for the Water Bar Committee. She is also a member of the Wyoming Bar Association, the Arizona Bar Association and the Pitkin County Bar Association. Ms. Kropf proudly served as President of the Roaring Fork Conservancy, a Colorado organization with a mission to inspire people to explore, value, and protect the Roaring Fork Watershed, a major tributary to the Colorado River. Ms. Kropf was also a convener for a special project hosted by the National Judicial College, called "Dividing the Waters," a resource for judges and special masters who are presiding over and resolving water conflicts. Ms. Kropf received her joint J.D./M.B.A. degree from the University of Colorado in 1991. Her B.S. was earned in 1984 at the University of Denver, where she majored in marketing. She is admitted to the bar in Arizona, Wyoming, and Colorado, to the U.S. District Court of Colorado, and to the United States Supreme Court. She loves skiing, biking, soccer, travel and enjoying those things with her family.



**Larry MacDonnell**

**University of Colorado Law School**

Lawrence J. MacDonnell is an attorney and consultant in Boulder who retired in 2013 as a professor of law at the University of Wyoming College of Law where he taught water law, public land law, and natural resources law. He is also a senior fellow at the Getches-Wilkinson Center and a member of the adjunct faculty at the University of Colorado School of Law. He was the first director of the Natural Resources Law Center at the University of Colorado School of Law, a position he held between 1983 and 1994. Between 1995 and 2009 he worked as an attorney and consultant in Boulder, Colorado. His work focused primarily on water resources and on ways to make natural resource development more environmentally compatible. His publications include numerous books, law review articles, other journal articles, and research reports. He has given over 250 invited presentations. He is married, with three daughters.





**Peter Mayer**  
**Water Demand Management**

Peter Mayer is a professional engineer with expertise in urban water use, water efficiency, demand management, and water resource planning. Since 1994, Peter's work has focused on urban water management, researching water use patterns, assessing the impact of water rate structures, evaluating water conservation measures and programs, forecasting future demand with and without conservation, preparing water conservation plans and conducting water supply scenario analysis. Peter was the lead author for the American Water Works Association Research Foundation "Residential End Uses of Water" study and a key contributor to the companion "Commercial and Institutional End Uses of Water" study. He is currently co-principal investigator for an update to the Residential End Use study. In 2013, Peter founded WaterDM – Water Demand Management, a consulting firm focused on working with utilities to develop conservation planning, drought response, water budgets, and information systems designed to educate and inform water utilities and customers alike. Peter chaired the subcommittee that prepared the new 3rd edition of AWWA's M22 Sizing of Water Service Lines and Meters manual. He is a three time winner of the AWWA Journal "Best Paper" award from the Water Conservation Division. Peter earned his Master's Degree in water resources engineering from the University of Colorado in Boulder in 1995 and holds a bachelor's degree from Oberlin College. He lives in Boulder, Colorado with his wife Amanda and two sons - Zack and Miles.



**Jerry Meral,**  
**Natural Heritage Institute**

Dr. Gerald H. Meral is NH's Director of California Water Programs. Until the end of 2013, he served as Deputy Secretary of the California Natural Resources Agency. In that position, he had the leading role in successfully shepherding the Bay Delta Conservation Plan through the highly contentious planning phase. At NHI, Dr. Meral is building a suite of new projects to forge consensus solutions to some of California's most intractable water management problems, including implementation of the Bay Delta Conservation Plan, sustainable management of California's groundwater resources, realigning public funding for delta levees, and promoting water conservation. Dr. Meral previously served as Executive Director of the Planning and Conservation League (1983-2003), Deputy Director of the California Department of Water Resources (1975-1983), Director of the Western Water Program at the Environmental Defense Fund (1971-1975). He has a Ph.D. in zoology from the University of California. He previously served on the boards of directors of the National Wildlife Federation, American Land Conservancy, Sierra Fund, Berkeley Ecology Center, and other conservation organizations.



**Bart Miller**  
**Western Resource Advocates**

Bart Miller is Water Program Director at Western Resource Advocates (WRA), a non-profit conservation organization dedicated to protecting the West's land, air, and water. He leads and supports a talented team of experts throughout the West who work together to: protect healthy rivers; improve water efficiency; recover endangered species; and draw the connection between water, energy, and climate change. He ensures that WRA is at the cutting edge of western water policy through launching new research, contributing to the development of new water policies, and refining efforts to protect and restore our rivers so they can meet the needs of local communities, farms, anglers, boaters, and the environment. Mr. Miller has written and spoken on many topics, including water development, federal reserved water rights, the Endangered Species Act, and the interface between water and energy use. Before joining WRA in 2000, he taught Water Law at the University of Colorado Law School in the fall of 2011 as an adjunct professor, and spent 4 ½ years as an attorney-advisor in the Solicitors Office in Washington, D.C., on the legal staff advising agencies within the U.S. Department of the Interior. Mr. Miller graduated cum laude from Dartmouth College in 1988 and received his J.D. from University of Colorado's School of Law in 1995.



**Susan Nevelow Mart**  
**University of Colorado Law Library**

Susan Nevelow Mart is an Associate Professor and Director of the Law Library at the University of Colorado Law School in Boulder. Her scholarly and teaching interests center on legal informatics. She has written and presented nationally and locally on legal information policy, national security and libraries, access to information, computer information retrieval systems, and legal research pedagogy. Before joining Colorado Law, Professor Mart served as the Faculty Services Librarian and adjunct professor of law at the University of California, Hastings College of the Law. Prior to her work at Hastings, Professor Mart practiced law for seventeen years. Her law practice focused on construction litigation, complex real estate transactions, and partnership and corporate dissolution. Professor Mart holds an M.L.I.S. from San Jose State University, a J.D. from Berkeley Law School at the University of California at Berkeley, and a B.A. from the University of California at Santa Cruz.



### **Peter Nichols**

#### **Partner at Berg, Hill, Greenleaf and Ruscitti**

Peter D. Nichols is the lead attorney for the Lower Arkansas Valley Super Ditch Company and Lower Arkansas Valley Water Conservancy District, who are pioneering new approaches for agricultural to municipal water sharing. Peter is also the “go to” water attorney for conservation easements involving western water rights, and principal author of “Water Rights Handbook for Colorado Conservation Professionals” (Bradford, 2011). He serves as lead counsel for western water users defending water transfers under the Clean Water Act and EPA’s Water Transfers Rule, and as special assistant attorney general for Colorado and New Mexico, and co-counsel to other the western States, in the same matters, from the seminal case of *Miccosukee Tribe of Indians v. So. Fla. Water Mgmt. Dist.*, 541 US 95 (2004). Nichols is a partner of Berg Hill Greenleaf & Ruscitti LLP, Boulder, Colorado, practicing water, environmental, conservation, and related law, and an occasional international mountaineering guide. Nichols is a member of the bars of the U.S. Supreme Court, the First, Second, Ninth, Tenth and Eleventh Circuit Courts of Appeal, the U.S. District Court for Colorado, and Colorado. Peter earned his JD from the University of Colorado School of Law; he also holds an MPA from CU and a BA from Colorado College.



### **Mark Pifher**

#### **Colorado Springs Utilities**

Mark Pifher joined Colorado Springs Utilities in 2012 as a Manager working upon the City’s \$880M Southern Delivery System. He is the immediate past Director of Aurora Water. In that capacity he managed all City water, wastewater and stormwater activities and oversaw the completion of the City’s \$700M Prairie Waters Project. Immediately prior to joining Aurora, he served as the Director of the Colorado Water Quality Control Division. Mr. Pifher was in private law practice for twenty three years before entering public service, emphasizing water, environmental and natural resource matters. Mr. Pifher is a current Board member of the Colorado Water Congress and the chair of its Water Quality Committee. He also served on the Colorado Water Quality Control Commission. He is the immediate past chairman of the Western Urban Water Coalition and currently serves as the chair of its CWA Committee, a former member of the Colorado Inter-basin Compact Committee, and a past vice-president of the Association of State and Interstate Water Pollution Control Agencies. In addition, he has been an active member of the National Water Resources Association, chairing its Water Quality Committee, and the Western Coalition of Arid States. He is a 1979 cum laude graduate of the University of Wisconsin Law School.





**Lauren Ris**

**Colorado Department of Natural Resources**

As Assistant Director for Water at the Colorado Department of Natural Resources, Lauren Ris works to develop and implement water policy in coordination with DNR's Divisions and the Governor's Office. Formerly the department legislative liaison, Lauren oversaw legislative affairs for Colorado Parks and Wildlife and the Division of Forestry. Prior to joining DNR, Lauren

worked for Colorado Legislative Council where she staffed the House Agriculture, Livestock, and Natural Resources Committee and the Water Resources Review Committee. Previously, Lauren worked for the Natural Resources Law Center in Boulder and the U.S. Fish and Wildlife Service in Washington, D.C. She also has experience in the non-profit sector. Lauren has a master's degree in Environmental Policy from the University of Michigan's School of Natural Resources and Environment and a bachelor's degree from Willamette University in Oregon.



**Roy Smith**

**Bureau of Land Management**

Roy Smith has worked for the Bureau of Land Management in the Colorado State Office since 1992. He is the statewide lead and coordinator for BLM on Wild & Scenic Rivers, water rights, and instream flow protection issues. In his role as Wild & Scenic Rivers coordinator, he has facilitated the completion of public outreach, eligibility studies, and suitability studies for several major river segments in Colorado on the Yampa, Blue, Colorado, Eagle, Gunnison, and

Dolores rivers. Roy's instream flow work has included cooperation with the Colorado Water Conservation Board to assemble the technical, hydrological, and public support for new instream flow appropriation on more than 140 stream segments throughout the state. During the last five years he has cooperated with the CWCB to appropriate instream flow water rights on the Dolores River, San Miguel River, and on streams within BLM's Dominguez Canyon Wilderness Area. Roy's water rights work has included the adjudication of more than 2,000 water rights for BLM on springs, wells, reservoirs, and ditches. His biggest projects have focused on securing water rights for irrigation and wildlife purposes for BLM's large waterfowl management areas located in the Colorado's San Luis Valley and North Park. Roy is also an instructor and coordinator for BLM's National Training Center, where he instructs courses on western water law and on water-related rights-of-ways on federal lands. Roy has received national-level awards for his work on river and stream management from the Public Lands Foundation, The Wilderness Society, and The River Management Society. Roy holds a B.S. from Lewis and Clark College in Portland, OR and an M.S. from University of Michigan. He lives in Denver recreates throughout Colorado with his wife and two daughters.



**Lester Snow**  
**California Water Foundation**

Lester Snow is the Executive Director of the California Water Foundation. Mr. Snow has a distinguished record of innovation, collaboration and results while working on complex natural resource management matters. Most recently, he served as Secretary of the California Natural Resources Agency, where he oversaw 25 departments, commissions, boards, and conservancies, and served as chief advisor on issues related to the state's natural, historic, and cultural resources. His responsibilities included chairmanship of the Ocean Protection Council. Previously, Mr. Snow was Director of the California Department of Water Resources, with responsibility to protect, conserve, and manage California's water resources, including operation of the California State Water Project, the largest state-run, multi-purpose water and power system in the United States. Mr. Snow has also served as Executive Director of CALFED, regional director for the Bureau of Reclamation, General Manager of the San Diego County Water Authority, and spent six years with the Arizona Department of Water Resources, including four years as Tucson area director implementing Arizona's first comprehensive groundwater management efforts. Mr. Snow holds a Master's degree in Water Resources Administration from the University of Arizona and a Bachelor's degree in Earth Sciences from Pennsylvania State University.



**Chris Treese**  
**Colorado River Water Conservation District**

Chris Treese is the Manager of External Affairs for the Colorado River Water Conservation District, more commonly known as the River District. Chris manages a department that is responsible for the River District's legislative and regulatory governmental relations in Denver and Washington, D.C., as well as the District's water education and public information efforts. In short, Chris describes his job responsibilities as everything you don't want lawyers and engineers doing, including addressing the annual NRLC Martz summer conference. Chris moved from Denver to the wetter, better side of Colorado in 1982 to be the boomtown economist for Union Oil's oil shale project. He now lives in Glenwood Springs. He and his wife have a 22-year old daughter who just graduated from CU Colorado Springs. When not working, he pretends his knees can still bike, rock climb, ski, and play ice hockey. Chris has Bachelors and Masters degrees in Economics, which he finds largely irrelevant to his current work.



**Brad Udall**  
**Colorado Water Institute,**  
**Colorado State University**

Brad Udall serves as senior water and climate research scientist at the Colorado Water Institute to provide additional expertise in the field of water resources and climate change. He has extensive experience in water and climate policy issues, most recently as the director of the Getches-Wilkinson Center for Natural Resources, Energy and the Environment and the Western Water Assessment at the University of Colorado, Boulder. He has authored numerous peer-reviewed publications on water management and climate change which have been published by the federal government and major journals. He has researched water problems on all major Southwestern US rivers including the Rio Grande, Colorado, Sacramento-San Joaquin and Klamath, and has spent six months in Australia studying their recent water reforms.

# University of Colorado Law School

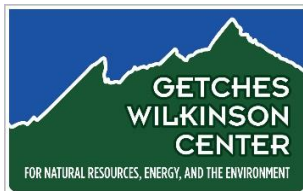
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Established in 1892, the University of Colorado Law School is one of the top public law schools in the United States. Colorado Law School's diverse student body is selected from among the statistically best applicants from every corner of the nation representing over 100 undergraduate institutions, and its highly published faculty is dedicated to interacting with students both inside and outside the classroom. The school's state-of-the-art green building is located at the base of the Rocky Mountains in beautiful Boulder, Colorado. With about 500 students and a low student to faculty ratio, Colorado Law School is a thriving academic community where the study of law is embraced to create leaders who recognize the civic responsibilities essential to the legal profession.

## Getches-Wilkinson Center for Natural Resources, Energy, and the Environment

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The Getches-Wilkinson Center for Natural Resources, Energy and the Environment continues the long-standing work of Colorado Law's Natural Resources Law Center. The newly renamed Center endeavors to serve the people of the American West, the nation, and the world through creative, interdisciplinary research, bold, inclusive teaching and innovative problem solving in order to further true sustainability for our use of the lands, waters, and environment. Major programs and initiatives focus on natural resources, water and public lands issues in Colorado and the West; energy and environmental security in the developing world; electricity regulation and energy policy; climate change law and policy; and native communities and environmental justice. The name comes from the contributions of two iconic figures in the law school's environmental law history, David Getches and Charles Wilkinson.

## Upcoming Events

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### **8<sup>th</sup> Annual Schultz Lecture**

*Featuring Governor John Hickenlooper*

**Coming Thursday, November 12<sup>th</sup>**

**5:30 p.m.**

**University of Colorado, Boulder**

**Wolf Law Building, Wittemyer Courtroom**

More information and registration coming soon to:

<http://www.colorado.edu/law/research/gwc/events>

### **2016 Martz Winter Symposium**

*Celebrating the Life and Career of Professor Charles Wilkinson*

**Coming March 10<sup>th</sup> and 11<sup>th</sup>, 2016**

**University of Colorado, Boulder**

**Wolf Law Building, Wittemyer Courtroom**

More information and registration coming soon to:

<http://www.colorado.edu/law/research/gwc/events>

*Serving the people of the American West, the nation, and the world through creative, interdisciplinary research, bold, inclusive teaching, and innovative problem solving in order to further true sustainability for our lands, waters, and environment.*

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