

The Scientific Bases of Colorado River Basin Water Management

Committee

Ernest T. Smerdon

Chair

Ernest T. Smerdon (NAE), Chair, is an expert in water resources engineering and management, especially in the U.S. West. Dr. Smerdon is a retired former vice-provost and dean of the College of Engineering and Mines at the University of Arizona. Dr. Smerdon has served as an advisor to the U.S. federal government and several foreign governments on water resources development and agricultural issues. Dr. Smerdon has served on several NRC and WSTB committees, most recently serving as chairman of the committee that authored *Managing the Columbia River: Instream Flows, Water Withdrawals, and Salmon Survival* (2004). Dr. Smerdon is thus well-versed in western water science and policy matters and the NRC study process. Dr. Smerdon received his B.S., M.S., and Ph.D. degrees, all in engineering, from the University of Missouri.

Julio L. Betancourt

Member

Julio L. Betancourt is a research scientist with the U.S. Geological Survey Desert Laboratory in Tucson, Arizona. Dr. Betancourt's research focuses on ecosystem and watershed responses to climate variability on different temporal and spatial scales. Dr. Betancourt employs various techniques and approaches to help reconstruct pre-instrumental hydrologic and climatic data. These include the use of rodent midden and tree-ring data in the Americas, and the design and testing of approaches that include historical documents and photographs, instrumental hydrological and climatic data, long-term vegetation plots, tree rings, stable isotopes, ancient DNA, biometrical measurements, alluvial stratigraphy, and ice core reconstruction. Dr. Betancourt received his B.A. degree in anthropology from the University of Texas, Austin, and his M.S. and his Ph.D. degrees in Geosciences from the University of Arizona.

Gordon W. Fassett

Member

Gordon W. “Jeff” Fassett is the president of Fassett Consulting LLC in Cheyenne, Wyoming, where he specializes in water rights, water resources engineering, and water policy matters in the western states. Prior to opening his firm in 2000, Mr. Fassett served as the Wyoming State Engineer from 1987-2000. In that post, he was directed all policy, technical, and administrative issues of the cabinet-level agency responsible for the appropriation, beneficial use, and general supervision and regulation of all waters in the state. Mr. Fassett received his B.S. degree in civil engineering from the University of Wyoming.

Luis A. Garcia

Member

Luis A. Garcia is an associate professor of civil engineering at Colorado State University, where he specializes in the fields of irrigation and drainage, decision support systems for water resources decision making, and computer modeling and geographic information systems (GIS) applications. Dr. Garcia has worked on these issues in many locales across the U.S. West, as well as in several foreign countries, including Egypt, India, and Italy. Dr. Garcia received his B.S. and M.S. degrees in civil engineering from Texas A&M University, and his Ph.D. degree in civil engineering from the University of Colorado.

Donald C. Jackson

Member

Donald C. Jackson is a professor of history at Lafayette College in Easton, PA. Dr. Jackson's areas of professional interest are in western U.S. water development and history, and the engineering and political aspects of large dam construction and operations. Dr. Jackson's books on these topics include Big Federal Dams of the New Deal Era, co-authored with David P. Billington (in press), Building the Ultimate Dam: John S. Eastwood and the Control of Water in the West (1995), and Great American Bridges and Dams (1988). Dr. Jackson has served as a fellow at the Dibner Institute for the History of Science and Technology at the Massachusetts Institute of Technology and as a fellow at The Huntington Library in San Marino, CA. Dr. Jackson received his B.S. degree in engineering from Swarthmore College, and his M.A. and Ph.D. degrees in history from the University of Pennsylvania.

Dennis P. Lettenmaier

Member

Dennis P. Lettenmaier is a professor of civil engineering at the University of Washington. Dr. Lettenmaier's specialties are in the fields of hydroclimatology, surface water hydrology, and GIS and remote sensing. In addition to his service at the University of Washington, he has served as a visiting scientist at the U.S. Geological Survey in Reston, VA (1985-86) and as program manager of NASA's Land Surface Hydrology Program at NASA Headquarters (1997-98). He is currently Chief Editor of the American Meteorological Society Journal of Hydrometeorology. Dr. Lettenmaier received his B.S. degree in mechanical engineering from the University of Washington, his M.S. degree in civil, mechanical, and environmental engineering from George Washington University, and his Ph.D. degree in civil engineering from the University of Washington.

Eluid L. Martinez

Member

Eluid L. Martinez is the president of Water Resources Management Consultants LLC in Santa Fe, New Mexico. Prior to assuming his current position in 2001, Mr. Martinez served as the Commissioner of the U.S. Bureau of Reclamation from 1995-2001. Before his service with the Bureau, Mr. Martinez served as the New Mexico State Engineer from 1990-1994. Mr. Martinez thus has experience in working several western U.S. river management agreements and compacts, including the Colorado River, Rio Grande River, and the La Plata River. Mr. Martinez received his B.S. degree in civil engineering from New Mexico State University.

Stephen C. McCaffrey

Member

Stephen C. McCaffrey is Distinguished Professor and Scholar at University of the Pacific's McGeorge School of Law and is an expert on international water resources law. He is a former chairman of the International Law Commission and during his time there he guided the work that formed the basis of the 1978 United Nations Convention on the Law of the Non-Navigational uses of International Watercourses, a treaty designed to ensure the equitable use of waters shared by more than one country. Dr. McCaffrey currently serves as legal consultant to the Nile River Basin Cooperative Framework, a UN-sponsored project to forge a multinational agreement on utilization of the Nile's water resources. He has argued in front of The World Court, advised the State Department, and represented foreign governments in river-use disputes. Dr. McCaffrey has published several books and more than 50 articles in law journals. He received his B.A. degree from the University of Colorado, his J.D. from the University of California, Berkeley, and his Dr. iur. degree from the University of Cologne, Germany.

Eugene M. Rasmusson

Member

Eugene M. Rasmusson (NAE) is research professor emeritus in the Department of Meteorology at the University of Maryland in College Park. Dr. Rasmusson's research interests are in the atmospheric general circulation and the global hydrologic cycle. Much of his research has centered on the relationship between sea-air interaction in the tropics and global precipitation variability, with particular emphasis on the El Niño phenomenon of the tropical Pacific. He also has interests in developing methods for improved prediction of climate variations and their impacts on water resources. Dr. Rasmusson received his B.S. degree in civil engineering from Kansas State University, his M.S. degree in engineering mechanics from St. Louis University, and his Ph.D. degree in meteorology from Massachusetts Institute of Technology.

Kelly T. Redmond

Member

Kelly T. Redmond is the deputy director of the Western Region Climate Center at the Desert Research Institute in Reno, Nevada. Dr. Redmond's fields of expertise and areas of interest include all aspects of climate and climate dynamics, including heavy precipitation episodes and spatial patterns of western U.S. climate variability. Dr. Redmond received his B.S. degree in physics from the Massachusetts Institute of Technology, and his M.S. and Ph.D. degrees in meteorology from the University of Wisconsin.

Philip M. Smith

Member

Philip M. Smith is a consultant with Science Policy and Management in Santa Fe, New Mexico. He has been engaged in water research programs and policy and involved in national and international science and technology policy and program development for more than four decades. From 1981 to mid-1994, Mr. Smith was Executive Officer of the National Academy of Sciences and National Research Council. For more than twenty years he was a government research management and science and technology policy official with the White House Office of Science and Technology Policy, Office of Management and Budget, and the National Science Foundation. Mr. Smith received his B.S. degree in geology and science education and his M.A. degree from Ohio State University, and was awarded an honorary D. Sc. degree by North Carolina State University.

Connie A. Woodhouse

Member

Connie A. Woodhouse is a research scientist at the University of Colorado's Institute of Arctic and Alpine Research, and a physical scientist within the National Climatic Data Center of the National Oceanographic and Atmospheric Administration (NOAA). In her research, Dr. Woodhouse has focused on the generation and interpretation of high-resolution records of climate for the past 2,000 years. Her current research includes tree-ring reconstructions of drought for the Great Plains and Rocky Mountains, and investigations into the mechanisms of long term drought and impacts on ecosystems. Dr. Woodhouse received her B.A. degree from Prescott (AZ) College, her M.S. degree in geography from the University of Utah, and her Ph.D. degree in geosciences from the University of Arizona.