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Dr. Phil Alderman grew up internationally as the child of a U.S. Air Force officer. The cross-cultural and cross-linguistic experiences of his childhood led him initially to pursue a BA in Linguistics from the University of Florida. However, through part-time work as an undergraduate research assistant, Dr. Alderman was exposed to simulation modeling and its potential for use in agricultural research. This interest led him to pursue an MS degree modeling physiological aspects of perennial grass regrowth and a Ph.D. performing integrated socioeconomic-biophysical modeling of soil fertility dynamics and household welfare in northern Ghana. After that, Dr. Alderman worked for nearly three years in the Global Wheat Program of the International Maize and Wheat Improvement Center (known by its Spanish acronym CIMMYT). While there, he collaborated closely with international wheat modeling efforts to research climate impacts and adaptation strategies for wheat. Since joining the Plant and Soil Sciences Department at Oklahoma State University, Dr. Alderman has continued to pursue interdisciplinary research into the agricultural impacts of climate variability. The goal of his research is to provide meaningful information and decision-support resources to enhance the resource use and resilience of agricultural systems in Oklahoma and around the world.



**DR. RONALD BONETT**  
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Dr. Ronald Bonett is an Associate Professor of Biological Science at the University of Tulsa. Dr. Bonett has a bachelor's degree and master's degree in biology, both from East Stroudsburg University (Pennsylvania). He received his doctorate degree in quantitative biology from the University of Texas Arlington in 2004, followed by postdocs at the University of California Berkeley and University of Michigan.

Dr. Bonett studies patterns and process of biodiversity, with an emphasis on complex life cycles of amphibians. His laboratory uses genetic and ecological analyses to test the factors that limit species distributions. The timing of amphibian development appears to be largely governed by hormonal systems and therefore his lab also conducts experiments to test how environmentally-induced hormone levels regulate life history strategies. Dr. Bonett has been working on biodiversity questions in Oklahoma for more than 15 years. The Ozark Plateau of northeastern Oklahoma is a unique network of subterranean and surface streams, which has played a major role in the life cycles and ecologies of associated fauna. Dr. Bonett and his students are currently evaluating how distributional limits of stream vertebrates and invertebrates can be used to understand hydrologic patterns and assess water quality in the Ozarks.



**DR. TRACY BOYER**  
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Tracy Boyer, Associate Professor of Agricultural Economics, has been at Oklahoma State University since 2003. She holds a doctorate in applied economics from the University of Minnesota focused on environmental and resource economics and a master's degree in public policy from the Humphrey Institute of Public Affairs at the University of Minnesota.

Dr. Boyer conducts research in the areas of environmental and resource economics focusing on valuing water and water-based amenities, soil and water conservation, adaptation to climate change, and estimating market demand for food and agricultural products.

She currently co-leads the ENVISION modelling team with Drs. McCarthy and Koch, focusing on water use and climate change in Oklahoma City. She teaches two classes on environmental and resource economics (AGEC 4503 and AGECE5503) at the senior undergraduate and graduate levels.



**DR. DANA BRUNSON**  
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Dana Brunson is Assistant Vice President for Research Cyberinfrastructure; Director, Oklahoma State University High Performance Computing Center (OSUHPCC); Adjunct Associate Professor, Department of Mathematics and

Department of Computer Science; and Co-lead of the OneOklahoma Cyberinfrastructure Initiative (OneOCII).

Dr. Brunson earned her Ph.D. in mathematics at the University of Texas at Austin in 2005 and her M.S. and B.S. in mathematics from OSU. She is PI on OSU's 2011 and 2015 National Science Foundation (NSF) Major Research Instrumentation (MRI) grants for High Performance Compute clusters for multidisciplinary computational and data-intensive research. She is also Co-PI on Oklahoma's NSF Campus Cyberinfrastructure-Network Infrastructure and Engineering CC-NIE grant, "OneOklahoma Friction Free Network" (OFFN), a collaboration among OSU, OU, Langston University, and the Tandy Supercomputing Center of the Oklahoma Innovation Institute.

She and her counterpart at University of Oklahoma, Henry Neeman, have been appointed joint co-leads of the XSEDE Campus Engagement program, which includes the Campus Champions. Dr. Brunson also serves on Internet2's External Advisory Group on Researcher Engagement and Pittsburgh Supercomputing Center's Bridges external advisory board. She also collaborates with the Clemson-led Campus Research Computing Infrastructures Consortium.



**DR. RAY HUHNKE**

**OK NSF EPSCoR PROJECT DIRECTOR & PI**

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Dr. Ray Huhnke is Director, Biobased Products and Energy Center for the Division of Agricultural Sciences and Natural Resources; Associate Director, Sun Grant Program - South Central Region; and Professor, Biosystems and Agricultural Engineering at Oklahoma State University (OSU). In July 2013, he assumed the role of project director for the current Oklahoma NSF EPSCoR Research Infrastructure Improvement project “Adapting Socio-ecological Systems to Increased Climate Variability.” He has been a Principal Investigator or Co-Principle Investigator on over \$68 million in grants and contracts from federal, state, university and private sources. Dr. Huhnke has authored or co-authored over 85 journal articles, two patents, three book chapters, 10 educational videos, and nearly 300 technical papers and presentations. Recently, he was appointed to serve as a member of the joint U.S. Department of Agriculture (USDA) and U.S. Department of Energy (DOE) Biomass Research and Development Technical Advisory Committee. His leadership roles at OSU include serving as advisory board member on the university’s National Energy Solutions Institute and the Food-Energy-Water Nexus Council. Dr. Huhnke is a licensed professional engineer and fellow in the American Society of Agricultural and Biological Engineers.



**DR. STEPHEN T. JACKSON**  
**OK NSF EPSCoR EXTERNAL ADVISORY BOARD MEMBER**

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Stephen T. Jackson is Director of the Department of the Interior Southwest Climate Science Center, a partnership between the U.S. Geological Survey and a multi-university consortium led by the University of Arizona. In this position, he works to foster effective engagement between researchers and resource-management decision-makers. He is also Adjunct Professor of geosciences and natural resources and environment at the University of Arizona. Before assuming his current position in 2012, he was at the University of Wyoming, where he was founding Director of the Program in Ecology and is now Professor Emeritus of Botany.

Jackson is currently a member of the Board of Reviewing Editors for *Science* and the Advisory Editorial Board for *Trends in Ecology and Evolution*, and has previously served on editorial boards for *Ecology*, *Ecology Letters*, *Frontiers in Ecology & Environment*, *Ecological Monographs*, *Ecosystems*, *Journal of Vegetation Science*, *Diversity & Distributions*, *Wetlands*, and *New Phytologist*. He is a past Fellow of the Aldo Leopold Leadership Program (2006), a Visiting Research Fellow at Merton College, University of Oxford (2012), and a Scholar in Residence at the Ucross Foundation (2012). He is an elected Fellow of the American Association for the Advancement of Science (2009) and the Ecological Society of America (2014). Jackson was awarded the 2011 George Duke Humphrey Distinguished Faculty Medal from the University of Wyoming, and the 2015 Excellence in Leadership Award from the U.S. Geological Survey. His research continues to utilize the past 25,000 years of earth history as a source of natural experiments to explore ecological responses to environmental changes of various kinds, rates, and magnitudes.



**DR. HANK C. JENKINS-SMITH**  
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Hank Jenkins-Smith earned his Ph.D. in political science and public policy from the University of Rochester (1985). He is a George Lynn Cross Research Professor in the University of Oklahoma Political Science Department and serves as Co-Director of the National Institute for Risk and Resilience. Professor Jenkins-Smith has published books, articles and reports on public policy processes, risk perception, national security, weather, and energy and environmental policy. He has served on National Research Council Committees focused on policies to transport spent nuclear fuel and dispose of chemical weapons. He currently serves as an elected member on the National Council on Radiation Protection and Measurement, and the American Political Science Association. His current research focuses on theories of the public policy process, with particular emphasis on the management (and mismanagement) of controversial technical issues involving high risk perceptions on the part of the public. In 2012 he and collaborators initiated a series of studies focused on social responses to the risks posed by severe weather. This work, funded by the National Science Foundation, continues with a panel survey of Oklahoma households to track perceptions of and responses to changing weather patterns. In his spare time, Professor Jenkins-Smith engages in personal experiments in risk perception and management via skiing, scuba diving and motorcycling.



**DR. DAN M. KAHAN**

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**Professor of Psychology**

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Dan Kahan is the Elizabeth K. Dollard Professor of Law and Professor of Psychology at Yale Law School. He is a member of the Cultural Cognition Project, an interdisciplinary team of scholars who use empirical methods to examine the impact of group values on perceptions of risk and science communication. In studies funded by the National Science Foundation, Professor Kahan and his collaborators have investigated public dissensus over climate change, public reactions to emerging technologies, and public understandings of scientific consensus across disputed issues. Articles featuring the Project's studies have appeared in a variety of peer-reviewed scholarly journals including the *Journal of Risk Research*, *Judgment and Decision Making*, *Nature Climate Change*, *Science*, and *Nature*. The Project's current focus is on field research to integrate insights from the science of science communication into the craft of professional science communicators in various domains, including democratic decision-making, education, and popular engagement with science. Professor Kahan is a Senior Fellow at the National Center for Science and Civic Engagement, and a member of the American Academy of Arts and Sciences.



**DR. GREGORY A. KIKER**  
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Dr. Greg Kiker works in the field of the simulated modeling of coupled human-natural systems, focusing on the integration of ecological, hydrological and management models, especially as regards “wicked problems.” Wicked problems are time-sensitive, have multivariate inputs, and often deal not only with causes/associations, but the impacts of the consequences of management decisions. Dr. Kiker has studied a variety of topics that have been integrated into coupled models, including invasive species, mercury dynamics, nutrient-transport, climate change, crop production, livestock/wildlife dynamics, ecosystem management, household decision-making, and risk analysis. Dr. Kiker has also worked in a variety of settings, especially on rangeland ecosystems. Current research includes ecosystem and hydrological modeling for south Florida and southern African ecosystems, and the simulation of beef cattle farming systems for ecological and enterprise sustainability. To further assist with ecosystem management, Dr. Kiker is researching food-ecology-water system integration into decision support and scenario analysis systems, and the implementation of decisions with uncertain information. He serves as the Graduate Coordinator as well, and thus brings a useful perspective to student research and education dynamics. Prior to his work at the University of Florida, Dr. Kiker was a Research Physical Scientist for the U.S. Army Corps of Engineers from 2002-2005, based at the Engineer Research and Development Center’s Environmental Laboratory at the Waterways Experiment Station, in Vicksburg, MS. He also won the UF Institute of Food and Agricultural Sciences International Achievement Award in 2011; was a Fulbright Scholar to South Africa in 1992 and 2012; and won the Robert E. Stewart Engineering-Humanities Award from the American Society of Agricultural Engineers in 1988.



**DR. JENNIFER KOCH**  
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Dr. Jennifer Koch has been an Assistant Professor in the University of Oklahoma's Department of Geography and Environmental Sustainability since August 2014. Her primary research interest is the development of integrated approaches for modeling and simulation of land systems, with applications for natural resource management, conservation planning, and sustainability solutions. Dr. Koch received her Ph.D. in environmental systems engineering from the University of Kassel in 2010, where she implemented an application of the LandSHIFT modeling framework for the Jordan River region. She also completed a Diplom (Univ.) in geoecology from the University of Bayreuth in 2005, majoring in ecological modeling and agricultural ecology. Before joining the University of Oklahoma, she was involved in several inter- and trans-disciplinary research projects. The Forests, People, Fire project focused on interactions, dynamics and adaptation in fire-prone landscapes of the eastern Cascades of Oregon. The integrated water resources management project GLOWA Jordan River provided scientific support for sustainable water management in the Jordan River region. Since joining the University of Oklahoma, Dr. Koch has continued her research in interdisciplinary settings. Besides her involvement with Oklahoma EPSCoR, she is part of the NSF-funded NRT titled "Aeroecology as a test-bed for interdisciplinary STEM training." She is a member of an interdisciplinary team conducting research on resilience in the Rio Grande Basin.



**DR. JERRY MALAYER**  
**EPSCoR STATE DIRECTOR**

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Jerry R. Malayer, Ph.D., is the Associate Dean for Research & Graduate Education in the Center for Veterinary Health Sciences at Oklahoma State University, where he has been on the faculty since 1994. He is a Professor in the Department of Physiological Sciences in the College of Veterinary Medicine, and an Adjunct Professor in the Department of Biochemistry and Molecular Biology in the Division of Agricultural Science and Natural Resources. Dr. Malayer received Bachelor's and Master's degrees from Purdue University, and the Ph.D. from the University of Florida in 1990. He was the recipient of a National Research Service Award Postdoctoral Fellowship from the National Institutes of Health under the mentorship of Professor Jack Gorski at the University of Wisconsin-Madison. He is a member of the American Association for the Advancement of Science, the Society for the Study of Reproduction, Sigma Xi, and Phi Zeta, the Honor Society of Veterinary Medicine. He has served on Editorial Boards and been a scientific reviewer for numerous professional journals and funding agencies including the National Science Foundation, Department of Homeland Security, Defense Department and the USDA. Dr. Malayer is a member of the Oklahoma Science and Technology Council and the Health Research Committee of the Oklahoma Center for the Advancement of Science and Technology. He is a founding member of the Scientific Steering Committee of the Oklahoma Center for Adult Stem Cell Research, Past Chair of the Research Committee of the Association of American Veterinary Medical Colleges, State Executive Director for Oklahoma EPSCoR, and currently serves as Vice-Chair of the Board of Directors of the Coalition of EPSCoR States. Dr. Malayer has been the recipient of the Pfizer Animal Health Award for Research Excellence, the Oklahoma A&M Regent's Distinguished Research Award, and the Oklahoma State University Graduate and Professional Student Association Award for Excellence in graduate student mentoring. In 2006, he was selected for the American Council on Education Fellows Program, and in 2007, he was recognized as a Distinguished Alumnus by Purdue University. Dr. Malayer's research focuses on mechanisms of inter-and intra-cellular communication, the role of steroid receptors in the control of gene expression, and molecular approaches in the development of diagnostic technologies.



**DR. HEATHER McCARTHY**  
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Dr. Heather McCarthy is an Assistant Professor of Plant Biology in the Department of Microbiology and Plant Biology at the University of Oklahoma. Her research interests include: plant physiological ecology, global change ecology, urban ecology, ecohydrology and coupled human-natural systems. Her research largely explores how trees and forests respond to environmental changes and, conversely, how they can be managed to moderate environmental changes. This research draws on physiological and ecosystem ecology to explore how plant water and carbon cycle processes respond to global change factors, including changes in water availability, extreme weather events, elevated atmospheric CO<sub>2</sub>, and urbanization. Dr. McCarthy received her B.S. in environmental science at Oregon State University and her Ph.D. in ecology at Duke University, after which she was a postdoctoral fellow in the Department of Earth System Science at the University of California, Irvine.



**DR. RENEE McPHERSON**  
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Dr. Renee A. McPherson is Associate Professor of Geography and Environmental Sustainability at the University of Oklahoma (OU) and University Co-director of the South Central Climate Science Center. She also is an Adjunct Associate Professor of Meteorology at OU. Dr. McPherson holds a B.S. in mathematics and B.S., M.S., and Ph.D. in meteorology. Her research includes regional and applied climatology, mesoscale meteorology, severe local storms, land-air-vegetation interactions, surface observing systems, applied meteorology, and societal and ecological impacts of climate variability and change. She teaches classes in climatology and physical geography, advises graduate students in their research and education, and mentors undergraduate students who are interested in research opportunities. Formerly, she was State Climatologist of Oklahoma and Acting Director of the Oklahoma Climatological Survey.

Dr. McPherson oversees the Consortium-related activities of the South Central Climate Science Center as a co-governing partner of the U.S. Geological Survey (USGS). Activities include coordination with USGS Headquarters, our USGS Director, our Consortium (Texas Tech University, Oklahoma State University, Chickasaw Nation, Choctaw Nation of Oklahoma, Louisiana State University, and NOAA's Geophysical Fluid Dynamics Laboratory), the six Landscape Conservation Cooperatives within our region, and the seven other Climate Science Centers. She has been principal or co-investigator on over \$40 million of grants and contracts from federal and state agencies, universities, private companies, or non-governmental organizations. Dr. McPherson is a member of Phi Beta Kappa, the American Meteorological Society, American Geophysical Union, Association of American Geographers, and the American Association of State Climatologists. She was co-recipient of the Innovations in American Government Award (Harvard University) and Environmental Achievement Award (U.S. Department of the Interior), and she received the Vice President for Research Norman Campus Outstanding Research Engagement Award.



**DR. HENRY NEEMAN**  
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Henry Neeman is the founding Director of the OU Supercomputing Center for Education and Research (OSCER), Assistant Vice President for Information Technology-Research Strategy Advisor, Associate Professor of Engineering, and Adjunct Associate Professor of Computer Science at the University of Oklahoma (OU).

He received his BS in Computer Science and his BA in Statistics, with a minor in Mathematics, in 1987 from the University at Buffalo, State University of New York, his MS in CS from the University of Illinois at Urbana-Champaign (UIUC) in 1990 and his Ph.D. in CS from UIUC in 1996.

Prior to coming to OU, Dr. Neeman was a postdoctoral research associate at the National Center for Supercomputing Applications (NCSA) at UIUC, and before that served as a graduate research assistant both at NCSA and at the Center for Supercomputing Research and Development, also at UIUC.

Dr. Neeman and his counterpart at Oklahoma State University, Dr. Dana Brunson, have been appointed joint co-leads of the Campus Engagement program of the Extreme Science and Engineering Discovery Environment (XSEDE), the umbrella organization over the National Science Foundation's national supercomputing centers.

He also collaborates with the Advanced Cyberinfrastructure Research and Education Facilitators (ACI-REF) project led by Clemson University and serves on the steering committee of the Linux Clusters Institute, as well as on the National Science Foundation's Advisory Committee for Cyberinfrastructure, where he leads the Working Group for Learning and Workforce Development.



**DR. SILVIA SECCHI**  
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Dr. Silvia Secchi is an Associate Professor in the Department of Geography and Environmental Resources and the Director of the interdisciplinary Ph.D. program in Environmental Resources and Policy at Southern Illinois University Carbondale. She holds a Ph.D. in economics from Iowa State University. She is a natural resource economist by training, and her work typically combines methodologies from the social sciences, the natural sciences and engineering. She has published on the environmental impacts of agricultural land use change in the Corn Belt, particularly water quality and carbon, and the interplay between agricultural, conservation and energy policies in the region. She has also co-authored articles on farmers' attitudes towards conservation, multifunctional floodplain management and targeted reconnection, invasive species management, and mitigation and adaptation to climate change in the agricultural sector.

Dr. Secchi is also interested in the methodology, pedagogy and epistemology of interdisciplinary inquiry. In particular, she is interested in the mentoring and training of graduate students, fostering the creation of new knowledge in interdisciplinary teams, and promoting effective science and policy communication, both internally within teams, and externally when engaging with stakeholders, funders, and society at large.

Dr. Secchi has been Principal Investigator or co-Principal Investigator on over 20 competitive research grants, largely funded by Federal and State agencies (e.g. NSF, USDA, Iowa Department of Natural Resources), and stakeholder organizations such as The Nature Conservancy, for over \$7 million.



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Carol L. Silva earned her Ph.D. in political science and public policy from the University of Rochester (1998). She was previously employed by the University of New Mexico's Institute for Public Policy, the Department of Political Science, and the George Bush School of Government and Public Service at Texas A&M University. She is currently a member of the faculty in the Department of Political Science at the University of Oklahoma, she also serves as the Director of the Center for Risk and Crisis Management and the Co-Director of the National Institute for Risk and Resilience.

Dr. Silva's current research encompasses the intersection of a set of theoretical and methodological social science issues. She studies social valuation generally, and more specifically the translation of values into public choice. The empirical underpinnings of the social valuation and risk perception research are grounded in applied survey research methodologies and public policy analysis. The specific topics of research interest include: risk perception, environmental politics and policy; science and technology policy; climate, weather and social science, contingent valuation methodology; policy analysis; cost benefit analysis; risk analysis and assessment.



**DR. XIANGMING XIAO**  
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Xiangming Xiao is a Professor of Ecology and Remote Sensing in the University of Oklahoma Department of Microbiology and Plant Biology (<http://mpbio.ou.edu>). He earned a B.Sc. in biology from Xiamen University, Xiamen, China (1982); M.Sc. in ecology from the Graduate College, the University of Science and Technology, Beijing, China (1987); and the Ph.D. in ecosystem science from Colorado State University, Fort Collins, Colorado, USA (1994). Prior to his position at OU, he worked at the Marine Biology Laboratory at Woods Hole, Massachusetts; the Joint Program on the Science and Policy of Global Change, MIT; and the University of New Hampshire. He currently serves as a Subject-Matter Editor of Ecological Applications journal, and a Review Editor of EcoHealth journal. He has authored or co-authored 200 peer-reviewed journal papers and book chapters (Google Citations 9579, h-index = 55, i10-index = 119). He teaches Environmental Remote Sensing, Computational Remote Sensing, and Field Methods in Geospatial Technologies courses at OU. Dr. Xiao has been involved in diverse research areas of geospatial technologies, land cover and land use changes, terrestrial carbon cycle, wild bird ecology, water quality, hydrology, and climate as well as ecology and epidemiology of infectious diseases (e.g., highly pathogenic avian influenza). For example, his work monitors croplands, grasslands, forests, plantations, water, and urban in the world. He developed the satellite-based Vegetation Photosynthesis Model (VPM) that estimates gross primary production of vegetation across the world. He has collaborated with many researchers from USA and more than 20 other countries. Dr. Xiao leads an effort in crowdsourcing and citizen science, and manages a data portal (<http://www.eomf.ou.edu>) with 1+ petabyte online data storage, including the Global Geo-Referenced Field Photo Library, where people share, visualize and archive geo-referenced photos from the fields. As PI or Co-I, Dr. Xiao has been involved in 61 projects receiving a total of ~\$248 million from federal agencies (e.g., NIH, NSF, NASA, USDA, USGS, and NOAA) since 1994; many of them are multi-institution and interdisciplinary projects, including the NIH-funded avian influenza projects (2007-2012, 2013-2017, \$5 million), the DOI-funded South-Central Climate Science Center (~\$4 million, 2011-2016), the NSF-funded CyberCommons for Ecological Forecasting (~\$6 million, 2009-2013), the NSF-funded adapting socio-ecological systems to increased climate variability project (~\$20 million, 2013-2018), the USDA-funded beef cattle production and climate change project (~\$10 million, 2013-2018) and the microbe-climate interactions in croplands and grasslands project (\$3 million, 2016-2020), and the NASA Geostationary Carbon Cycle Observatory (GeoCarb) project (\$166 million, 2017-2022). Dr. Xiao currently directs the EOMF, which has 15 to 20 research scientists, post-doctoral associates, graduate students, and visiting scholars, and is comprised of spatial ecology and epidemiology laboratory, remote sensing laboratory, and computing and visualization laboratory. It operates at annual expenditure of ~\$1.2 to \$1.5 million federal grants.



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Jadwiga R. Ziolkowska is an Assistant Professor and Environmental Economist in the Department of Geography and Environmental Sustainability at University of Oklahoma, and Manager of the Water-Energy-Food Institute (WEFI). Before joining OU, Jad was a post-doctoral scholar at University of California at Berkeley; an EU Marie Curie Fellow in the 7th Framework Program; and a researcher at University of Texas at Austin. She received her Ph.D. and habilitation, both in agricultural economics, from Humboldt University of Berlin. She published three books and authored more than 40 peer-reviewed journal publications and book chapters. Jad is specialized in policy evaluation and decision-making support in the field of natural resource, environmental, bioenergy, agricultural economics, and sustainable resource management. Her current research focus is on optimizing water management systems, desalination, biofuels, and socio-economic implications of drought.