

MRRIC Independent Science Advisory Panel (ISAP) Member Bios

Sturgeon Biology / Ecology

Christopher S. Guy, Ph.D.

Assistant Unit Leader

Affiliate Associate Professor

U.S. Geological Survey – Biological Resources Division

Montana Cooperative Fishery Research Unit

Montana State University

Dr. Guy designs and conducts research funded by Federal, State, and private contracts and directs the research of graduate students and other personnel. He also leads research teams and serves as a bridge among resource managers and other researchers assuring appropriateness of research questions and hypotheses. The overall mission of the MTCFRU encompasses fish ecology, physiology, population dynamics, limnology, hydrology, wildlife, endangered species, habitat and landscape ecology, and environmental contaminants. Dr. Guy's research contributes to understanding ecosystem-level issues that are scientifically challenging because of scale, complexity, and spatial and temporal dynamism. Most of his research falls within the broad mission of ecology of fishery and aquatic resources. A major, consistent research theme has been on native fish assemblage restoration, a prominent ecological and societal issue in Rocky Mountain and Great Plains ecosystems. Habitat degradation, introduction of non-native species, and overexploitation have caused widespread decreases in ranges and abundances of native fish species at the same time that anglers and agency administrators are becoming aware of ecological concepts, biodiversity issues, and the importance of maintaining naturally structured and functioning ecosystems. He has a comprehensive native species research program involving life history, movements, habitat use, population ecology and dynamics, exploitation, hybridization, non-native eradication, and disease components. His research includes evaluation of post-stocking dispersal of hatchery-reared pallid sturgeon; movements, diet, and habitat use of pallid sturgeon and shovelnose sturgeon; spawning locations and early life history of shovelnose sturgeon; effects of spawning location on survival of pallid sturgeon and shovelnose sturgeon; impacts of flow modifications on distribution and spawning by pallid sturgeon and shovelnose sturgeon; interactions between sauger and sympatric non-native walleye; distribution and population characteristics of non-native lake trout in Lake McDonald, Glacier National Park, with implications for suppression; landscape factors affecting the distribution and genetic diversity of bull trout and sympatric non-native lake trout in Glacier National Park; movement of resident and non-resident anglers and implications for transferring aquatic nuisance species; effects of angling on salmonids during high water temperatures; biogeographical and human influences on fish assemblages in prairie streams; and spatiotemporal dynamics of fishes in prairie streams.

Large River Hydrology / Geomorphology

Melinda Daniels, Ph.D.

Associate Research Scientist
Director of Fluvial Geomorphology
Stroud Water Research Center

Dr. Melinda Daniels is an Associate Research Scientist and Director of Fluvial Geomorphology at the Stroud Water Research Center in Avondale, PA. Previously, Dr. Daniels was a tenured Associate Professor and Director of the Graduate Program in Geography at Kansas State University. She now teaches at the University of Pennsylvania. Her specializations include Fluvial Geomorphology, Hydrology, River and Watershed Restoration Science and Policy, Stream Ecosystem Ecology, and Natural Resource Management.

Dr. Daniels' research program focuses on modern and legacy human influences on river and watershed dynamics and the complex interactions between hydrology, geomorphology and ecology that govern stream ecosystem dynamics. Her work has been funded by federal, state, local, and non-governmental organizations including The National Science Foundation, the U.S. Environmental Protection Agency, the U.S. Geological Survey, the U.S. Department of Agriculture, The Nature Conservancy, the National Fish and Wildlife Foundation, and the William Penn Foundation. Her current projects focus on innovative science-based whole-watershed restoration strategies for ecological resiliency and flood control, the impacts of climate change on coupled human-watershed systems in the Central Great Plains, the effects of riparian reforestation on sediment and nutrient pollution reduction, the impacts of organic and conservation farming practices on surface water quality, and the role of biological ecosystem engineers in regulating stream sediment transport processes. She is the author of over 50 peer-reviewed publications and more than 200 conference papers. Dr. Daniels served on the USCAE Environmental Advisory Board, serves as a frequent panelist for several programs at the National Science Foundation, and is a member of the Army Science Board.

Indigenous Cultural and Natural Resources Management

John William Norder, Ph.D.

Associate Professor of Anthropology
Michigan State University
Enrolled Member, Spirit Lake Tribe of North Dakota

Dr. Norder is an enrolled member of the Spirit Lake Dakota Tribe and descendant of the Turtle Mountain Band of Chippewa Indians. He received his B.S. in Anthropology from the University of Wisconsin and his Ph.D. in Anthropology from the University of Michigan with an emphasis on North American Indigenous history and cultural and natural resource management. In

addition to his faculty appointment in the Michigan State University Department of Anthropology, Dr. Norder served from 2015 to 2018 as the Director of the Native American Institute in the College of Agriculture and Natural Resources of Michigan State University. Most recently, he served as an advisor to the Provost's Office of Michigan State University on federal compliance under the Native American Graves and Repatriation Act (NAGPRA). In his professional service for the past 25 years he has served in a variety of capacities as an advisor and reviewer on issues related to NAGPRA, the National Historic Preservation Act (NHPA), the National Environmental Protection Act (NEPA), and the Ontario Heritage Act.

Dr. Norder has extensive experience working on collaborative community-based research, assessments, and partnerships with a number of U.S. Tribes, Canadian First Nations, Indigenous organizations, and international scholarly working groups. Topics have ranged from historical Indigenous landscape use to the intersection of Indigenous Knowledge in environmental resource management and economic development projects. His most recent work has focused on the construction, valuation, and use of Indigenous knowledge as part of community and land-based education initiatives among tribes in the Great Lakes region. Specific topical examples include: assessment of the prevalence and use of Indigenous Knowledge in forest ecosystem management, the development of Indigenous methodologies for the reintroduction and management of wild rice (*Zizania aquatica and palustris*), consultation on the development of University/Tribal programs on the study and management of selected wildlife populations, and the development of an organic agribusiness model that aligns with Tribal values and beliefs.

Large River Ecology / Conservation Biology

Dennis D. Murphy, Ph.D.

Adjunct Research Professor
University of Nevada, Reno

Dr. Murphy has worked on conflict resolution in land-use planning on private property since the first federal Habitat Conservation Plan on San Bruno Mountain. He won industry's oldest and most respected prize in conservation, the Chevron Conservation Award, has been named a Pew Scholar in Conservation and the Environment, and received the California Governor's Leadership Award in Economics and the Environment. He has authored or co-authored more than 200 scientific journal articles and book chapters in ecology, conservation biology, and applied sciences.

Dr. Murphy has served a number of scientific societies and environmental organizations, and is Past President of the Society for Conservation Biology. He has served on the Water Science and Technology Board and Board on Environmental Studies and Toxicology at the National Research

Council (of the National Academy of Sciences). His professional activities outside of academia include service on the Interagency Spotted Owl Scientific Advisory Committee, enjoined by Congress to develop a solution to that planning crisis in the Pacific Northwest, as chair of the National Park Service's Scientific Advisory Committee on Bighorn Sheep, as co-chair of the State Department's American-Russian Young Investigators Program in Biodiversity and Ecology, as co-director of the statewide Nevada Biodiversity Initiative based at the University of Nevada at Reno, and as chair of the Scientific Review Panel to California's first Natural Community Conservation Planning Program in southern California's coastal sage scrub ecosystem. He served the National Academy of Sciences on its Committee on Scientific Issues in the Endangered Species Act, on the Committee on Threatened and Endangered Species on the Platte River, and on the Committee on Hydrology, Ecology, and the Fishes of the Klamath River Basin.

Dr. Murphy's activities in the area of conservation planning and adaptive management include service on the Science Board to the CalFed Ecosystem Restoration Planning Program for the Sacramento and San Joaquin river systems, development of a conservation strategy for the imperiled Tahoe yellow cress for the U.S. Fish and Wildlife Service, development of a watershed-based ecosystem management framework for the Truckee, Carson, and Walker hydrological units in the Humboldt-Toiyabe National Forest, and in science design for the nation's largest Habitat Conservation Plan under the Endangered Species Act, in Clark County, Nevada, and several other major HCP efforts in southern California and southern Nevada. Dr. Murphy served as team leader for the committee of scientists carrying out the Lake Tahoe Watershed Assessment, a Presidential deliverable to the Tahoe Federal Interagency Partnership via the U.S. Forest Service, and subsequently sat with the science committee of the Tahoe Science Consortium. He also has chaired a number of commissions and committees for NGOs, recently including the Commission on Performance Measures for State Wildlife Conservation Strategies at the Heinz Center in Washington, D.C. Dr. Murphy has testified more than a dozen times before Senate and House committees and subcommittees on issues mostly pertaining to implementation of the federal Endangered Species Act.

Least Tern / Piping Plover Specialist

Steve Dinsmore, Ph.D.

Professor

Interim Department Chair

Departments of Natural Resource Ecology and Management and Entomology

Iowa State University

Dr. Dinsmore is a Professor of wildlife ecology and Interim Department Chair in the Departments of Natural Resource Ecology and Management and Entomology at Iowa State University. His teaching responsibilities include undergraduate courses in Ornithology,

Ecological Methods, Vertebrate Biology, undergraduate seminars on several topics, and numerous Study Abroad travel course offerings. He also teaches a graduate level Avian Ecology course. His administrative experience includes 6 years as an Associate Department Chair before becoming Interim Chair in 2019. He has served professional organizations such as the American Ornithological Society, of which he is a Fellow, the Biometrics Working Group of The Wildlife Society, and others. He has also served on several panels reviewing wildlife issues on the Upper Mississippi and Missouri River systems. He gives seminars and scientific presentations nationwide and enjoys teaching workshops on the use of Program MARK and the analysis of wildlife demographic data.

Dr. Dinsmore's research program lies at the intersection of avian ecology and population biology. His primary interests are avian ecology, population biology, capture-recapture analysis, and monitoring animal populations. His research program at Iowa State University emphasizes studies of avian population biology although his work encompasses other taxa too. He has a special interest in shorebirds, as evidenced by his long-term work with the Mountain Plover. His past research has included work with the Piping Plover and Least Tern in Iowa, as well as work with the Least Tern in coastal Mississippi. Much of his work involves demographic studies of wildlife (estimating population size, survival and movement rates, etc.) and strives to provide practical solutions to wildlife management needs. Increasingly this is linked to the management of forests and grasslands to benefit diverse wildlife taxa.

Quantitative Ecology / Statistical Methods

Steven M. Bartell, Ph.D.

Principal Scientist

E2 Consulting Engineers, Inc.

Formerly a research scientist in the Environmental Sciences Division at the Oak Ridge National Laboratory, Dr. Steven M. Bartell is currently a Senior Principal and Practice Group Manager for Ecological Modeling with Cardno, Inc. He is also an adjunct faculty member in the Department of Ecology and Evolutionary Biology at the University of Tennessee, Knoxville.

Dr. Bartell's areas of expertise include systems ecology, ecological modeling, ecological risk analysis, risk-based decision analysis, vulnerability analysis, numerical sensitivity and uncertainty analysis, environmental chemistry, and environmental toxicology. He works with public and private clients in ecological risk assessment, environmental analysis, ecological planning, and ecosystem restoration. Dr. Bartell has conducted ecological risk assessments for a diverse set of environmental stressors: ecological disturbances from oil spills in the Gulf of Mexico (BP), commercial navigation on the Upper Mississippi and Illinois Rivers (USACE); risk of invasive species establishment (USDA); habitat alteration and degradation (USDOE, USACE); multiple chemical stressors in the Patuxent River and estuary (NOAA, USEPA); radionuclides and

toxic metals (several Canadian mining companies); and herbicides and pesticides (Syngenta). Bartell has also managed and technically contributed to large-scale projects in adaptive management and restoration for the Florida Everglades (USDOJ), the Lower Columbia River (USACE), and the Upper Mississippi River (USACE).

Resource Economy / Sociology

John Loomis, Ph.D.

Professor

Department of Agricultural and Resource Economics

Colorado State University

Dr. Loomis' expertise is in environmental and natural resource economics. He has over fifteen years of experience with stakeholder driven scientific review panels including adaptive management in large watersheds such as the Grand Canyon Monitoring and Research effort. He has brought his expertise to USACE independent external review (IEPR) processes in New Orleans and in the Cache-La Poudre River in Colorado. Dr. Loomis has authored over 250 scientific publications (e.g., Water Resources Research, Journal of Environmental Economics and Management) and four books covering economic valuation of water, ecosystem services, aspects of hydropower, recreation and wildlife issues in watersheds.