

MN Lake Superior Watershed Stream Science Symposium II

January 6-7, 2016

Presenter Biographies

(In order of presentation)

Day One, January 6, 2016

Tom Landwehr, DNR Commissioner Keynote 9:05 am

Tom Landwehr was appointed DNR Commissioner by Governor Dayton in 2011. Formerly Assistant State Director for The Nature Conservancy, he now oversees a staff of about 2,700 located in St. Paul and around the state, with the mission of working with Minnesota citizens to conserve and manage the state's natural resources, providing outdoor recreation opportunities, and providing for commercial uses of natural resources in a way that creates a sustainable quality of life.

Tom also directed the Ducks Unlimited conservation programs in Minnesota and Iowa. He worked for the DNR from 1982 through 1999, primarily with wetland wildlife conservation programs. He has BS and MS degrees in Wildlife Management and an MBA with a finance concentration, all from the University of Minnesota, where he is currently Adjunct Instructor of a course on wetlands conservation.

Commissioner Landwehr served for seven years on the Shoreview City Council. He formerly taught adult hunter education, and is himself an ardent hunter, camper, angler and outdoor enthusiast.

John Linc Stine, MPCA Commissioner Keynote 9:25 am

John Linc Stine was appointed Commissioner of the Minnesota Pollution Control Agency (MPCA) by Governor Mark Dayton effective May 14, 2012.

John joined the MPCA in March 2011, as Deputy Commissioner. Prior to joining the MPCA, John served as Assistant Commissioner at the Minnesota Department of Health where he was responsible for overseeing the department's public health emergency preparedness, environmental health, infectious disease prevention/control and the public health laboratory functions.

John also worked for 25 years with the Minnesota Department of Natural Resources as a hydrologist and administrator specializing in shoreland, flood plain, and wild and scenic river programs, water resource management and regulation. John also served as Assistant Director of the Trails and Waterways Division.

John received a Bachelor of Science degree in Soil and Water Resource Management from the University of Minnesota. He is married with two sons.

John Jaschke, BWSR Executive Director Keynote 9:45 am

John Jaschke is the Executive Director of the Minnesota Board of Water and Soil Resources (BWSR) (see <http://www.bwsr.state.mn.us>). He was formerly the Dakota County Water Resources Manager and the Administrator of the Vermillion River Watershed Organization. His prior positions were as Land and Water Section Administrator and Wetlands Program Manager at the Minnesota Board of Water and Soil Resources (BWSR), and Area Hydrologist with the Minnesota Department of Natural Resources (DNR) in Duluth and New Ulm. He has B.S. degrees in Geology and Geophysics from the University of Minnesota and a M.A. in Public Administration from Minnesota State University – Mankato. He grew up on a dairy farm in central Minnesota (Morrison County) with 10 younger siblings.

Dr. Brian Shipley, Canadian Consulate Keynote 10:05 am

Dr. Brian Shipley is a Canadian Foreign Service Officer. Since 2012, he has held the position of Consul in the Consulate General of Canada in Minneapolis, as head of the section responsible for political and public affairs. This work focuses on the many dimensions of Canada's relationship with the Upper Midwest region, including transboundary waters such as Lake Superior and its watershed.

Prior to coming to Minnesota, Brian served in the political section at the Embassy of Canada in Seoul, Korea, working on regional and global issues.

Brian earned a Ph.D. in History (2007) from Dalhousie University in Halifax, Nova Scotia. He also holds an M.A. from the University of Toronto and a Bachelor's degree from McMaster University in Hamilton, Ontario.

Dr. John Pastor, Professor, Department of Biology, UMD Introductory 10:50 am

John Pastor received his Ph.D. in Forestry and Soil Science in 1980 from the University of Wisconsin-Madison and did post-doctoral research in the Environmental Sciences Division at Oak Ridge National Laboratory. He is a Professor of Biology at the University of Minnesota Duluth and the current Co-Chair of the Natural History Section of the Ecological Society of America. His research interests include the structure and function of northern ecosystems, response of forests to climate change, forest-wildlife interactions, applications of mathematics to ecological problems, and scientific illustration. He teaches Mathematical Ecology, Ecosystems Ecology, Animal Behavior, and Biological Illustration, among other courses.

PRESENTATION TITLE, The Forests of the Lake Superior Watershed and Climate Change: In Transition to What and When?

Dr. William Herb, Research Associate, St. Anthony Falls Laboratory University of Minnesota

Dr. Lucinda Johnson, Associate Director, Center for Water and the Environment, NRRI, Introductory 11:35 am

Dr. William Herb is a Research Associate at the University of Minnesota St. Anthony Falls Lab (SAFL) in Minneapolis. He holds a Ph.D. degree in Mechanical Engineering and an M.S. in Water Resources Science from the University of Minnesota. His research interests center on computer modeling of hydrology and lake and stream water quality, including prediction of urbanization impacts on stream hydrology and temperature, and projection of climate and land use change impacts on fish habitat.

Dr. Lucinda Johnson is an Associate Director at the University of Minnesota's Natural Resources Research Institute at the University of Minnesota Duluth. Johnson holds a B.A. in Botany from Duke University, an M.S. in Entomology from State University of New York, College of Environmental Science and Forestry, and a Ph.D. in Zoology from Michigan State University.

Dr. Johnson is an aquatic and landscape ecologist whose research focuses on the effects of multiple stressors on aquatic ecosystems with emphasis on human activities (e.g., land use) and climate change. Much of her work has involved quantifying interactions between terrestrial and aquatic ecosystems, with particular emphasis on effects on biotic communities and habitats. Dr. Johnson's current research activities involve: validating indicators of condition for Great Lakes coastal ecosystems; predicting climate change impacts on cold water fish communities in northern lakes and streams; assessing the influence of wetland connectivity on population persistence under changing climate and land use.

PRESENTATION TITLE, Managing climate change in the Superior North Shore Tributaries: Can we maintain the flow?

Dr. Kristen Blann, The Nature Conservancy, Primary 1:15 pm

Kristen Blann is a Freshwater Ecologist with The Nature Conservancy. She holds M.S. and Ph.D degrees in Conservation Biology from the University of Minnesota, Department of Fisheries, Wildlife, and Conservation Biology. For the past 10 years, she has provided technical leadership for freshwater and watershed conservation planning with The Nature Conservancy. This has included development of conservation action plans for priority lakes, river basins, and watersheds in the Upper Mississippi River Basin; development of lake classification and conservation portfolios for The Nature Conservancy in Minnesota, North Dakota, and South Dakota as well as Wisconsin; and development of ecological flow and water level criteria to support sustainable water management in Minnesota. For the past few years, she has been working to develop tools for prioritizing freshwater protection in the Mississippi River headwaters and for the Conservancy's recently launched Minnesota Headwaters Fund. She also leads the Conservancy's role to understand protect ecological flows in North Shore streams for the Great Lakes Restoration

Initiative project “Criteria for land and water management to sustain healthy aquatic ecosystems in a changing climate”.

PRESENTATION TITLE, Sustaining Healthy Aquatic Ecosystems in a Changing Climate: Understanding ecological relationships with flow

Dr. Karen B. Gran, Department of Earth & Environmental Sciences, University of Minnesota Duluth, Primary 1:35 pm

Dr. Karen Gran is an Associate Professor in the Department of Earth & Environmental Sciences at the University of Minnesota Duluth, where she has been for the past 8 years. Her research focuses on fluvial geomorphology, including how channels evolve under changing conditions, from volcanic eruptions to land use changes. She has worked extensively on sediment source allocation and landscape evolution in Minnesota rivers, with a particular focus in the Minnesota River basin. Dr. Gran received her Ph.D. from the University of Washington, M.S. from the University of Minnesota, and B.A. from Carleton College.

PRESENTATION TITLE, Stream resiliency in a changing climate.

Dr. Valerie Brady, Natural Resources Research Institute, University of Minnesota Duluth, Primary 1:55 pm

Valerie Brady received her PhD in aquatic ecology from Michigan State University in 1996. She then did a post-doc at the US EPA lab in Duluth working on low-level impacts of human development on small stream ecosystems. She has been a research associate at UMD’s Natural Resources Research Institute since 2002 and the research coordinator for Minnesota Sea Grant since 2006. In her research, she works to improve the condition of streams, wetlands, and Great Lakes coastal areas by developing indicators of biotic condition based on macroinvertebrates, and by investigating stormwater runoff and land use issues.

PRESENTATION TITLE, How much sediment is too much, according to stream macroinvertebrates?

Dr. Lucinda Johnson, Associate Director, Center for Water and the Environment, NRRI, Primary 2:15 pm

Dr. Lucinda Johnson is an Associate Director at the University of Minnesota’s Natural Resources Research Institute at the University of Minnesota Duluth. Johnson holds a B.A in Botany from Duke University, an M.S. in Entomology from State University of New York, College of Environmental Science and Forestry, and a Ph.D. in Zoology from Michigan State University.

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ecosystems; predicting climate change impacts on cold water fish communities in northern lakes and streams; assessing the influence of wetland connectivity on population persistence under changing climate and land use.

PRESENTATION TITLE, How cold is cold enough? Stream temperatures of Minnesota's North Shore streams today and in the future.

Dr. Theodore Angradi, US EPA, Mid-Continent Ecology Division Lab, Duluth, MN, Primary 3:00 pm

Ted has degrees from Virginia Tech (BS), Penn State (MS), and Idaho State University (PhD). He worked for the US Forest Service for the Northern Research Station, at the Timber and Watershed Laboratory in West Virginia for 7 years. Ted has worked for the EPA since 1999, primarily on aquatic ecosystem monitoring and assessment and ecosystem services research.

PRESENTATION TITLE, A perspective on forest stream ecosystem services.

Tom Hollenhorst, US EPA, Mid-Continent Ecology Division Lab, Duluth, MN, Primary 3:20 pm

Tom works as a landscape ecologist for the E.P.A in the Office of Research and Development, National Health and Environmental Effects Research Laboratory, Mid Continent Ecology Division here in Duluth, MN. He has a MS in Wildlife Management from West Virginia University. Tom applies GIS and remote sensing technology towards improved management and understanding of our natural resources. In particular he is interested mapping and understanding various properties and processes associated with watersheds and near shore habitats around the Great Lakes.

PRESENTATION TITLE, New Methods for Modeling Stream Temperature Using High Resolution LiDAR, Solar Radiation Analysis and Flow Accumulated Values

Dr. Kathryn Schreiner, Asst. Professor, Large Lakes Observatory, Primary 3:40

Dr. Schreiner is an organic geochemist, currently appointed as an Assistant Professor at the University of Minnesota Duluth, with a joint appointment between the Department of Chemistry and Biochemistry and the Large Lakes Observatory. Dr. Schreiner's research focuses on carbon cycling through rivers and watersheds and organic carbon delivery and storage in marine and aquatic systems, and human impacts on these cycles. She has studied organic carbon cycling in river systems all over the world, including Arctic Alaska, Chesapeake Bay, the Mississippi River delta, and here in Lake Superior.

PRESENTATION TITLE, Carbon Storage and Cycling in Riparian Environments: Considerations for Lake Superior's Watershed

Day Two, January 7, 2016

Dr. Mark Seeley, Extension Climatologist and Professor in the Department of Soil, Water, and Climate at the University of Minnesota, Keynote 9:00 am

In his role as Extension Climatologist and Meteorologist Dr. Seeley manages the Weather and Climate Education Program, as well as doing research and teaching. He has served as a weekly commentator on Minnesota Public Radio's "Morning Edition" news program and written the weekly newsletter (blog) "Minnesota WeatherTalk" since 1992. Dr. Seeley has helped Twin Cities Public Television (TPT) produce documentaries on Minnesota's most memorable historical weather events, and on how climate change is affecting the state's infrastructure and natural resources. He is author of Minnesota Weather Almanac (1st edition published by the Minnesota Historical Society Press in 2006 and second edition published in 2015), and co-author (with Don Breneman) of Voyageur Skies: Weather and the Wilderness in Minnesota's National Park (Afton Press, 2011), an award-winning book about the state's only national park. He has also edited two series of children's science books about weather.

Dr. Seeley has been honored with a variety of awards, some of which include:
The Siehl Prize in Agriculture for lifetime contributions to knowledge, May 2013
The University President's Award for Outstanding Community Service, May, 2012
The Scientific Communication and Education Award from Sigma Xi (2001 and 2008)
University of Minnesota Extension Dean and Director's Award, 2006
Mn/DOT Research Center Partnership Award (for design and use of snow fences), 2003

PRESENTATION TITLE, "Signals of Climate Change in Our Own Measurements"

Dr. Chris Ellison, Hydrologist/Sediment Specialist, US Geological Survey, Primary 10:00 am

Chris Ellison is Hydrologist with the Minnesota U.S. Geological Survey (USGS) Water Science Center. He has a Ph. D. in Rangeland Ecology and Watershed Management from the University of Wyoming. He serves as project chief related to hydrological, geomorphology, and fluvial sediment studies. In this capacity, he provides project oversight, technical assistance, and data analysis and reporting in support of studies for the MPCA, DNR, Corps of Engineers, and local watershed and conservation districts. He also is responsible for research and implementation of new technologies to improve understanding of sediment sources, fate, and transport mechanisms.

PRESENTATION TITLE, Geomorphic Characteristics, Processes, and Responses of Duluth-Area Streams to the June 2012 Flood, Minnesota

**Brad Hansen, Department of Bioproducts and Biosystems Engineering
University of Minnesota, Primary 10:20 am**

Brad Hansen is a senior scientist at the University of Minnesota. He has 35 years of experience conducting research projects evaluating the impacts of agriculture and land use change on the environment. Over the past 10 years Brad has been active in research focused on TMDLs, fish passage design, construction site runoff, two-stage ditch monitoring and storm water runoff. His work on the Northshore has focused on identifying sediment sources on the Knife, Sucker, Beaver, Cross and Poplar Rivers.

PRESENTATION TITLE, Sediment Investigation of Lake Superior Watersheds

**Dr. Danial Isaak, U.S. Forest Service, Rocky Mountain Research Station, Primary
11:00**

Dan Isaak is a Fisheries Research Scientist with the U.S. Forest Service, Rocky Mountain Research Station in Boise, Idaho. He grew up in eastern South Dakota mucking around the Vermillion River before attending SDSU where he was pleasantly surprised to learn he could earn a degree to have a career mucking around in rivers. After obtaining a BS in Wildlife and Fisheries Management, he headed west to the University of Idaho for his MS and then the University of Wyoming for a Ph.D. Since 2001, he's been with Forest Service research where he develops scientific information to assist with the conservation and management of aquatic resources across the western U.S. His research interests include understanding the effects of climate change on streams and fish communities, development and application of a branch of statistics that is specific to data measured on stream networks, stream temperature and species distribution modeling, and use of digital and social media to connect people, information, and landscapes. He still can't believe his good fortune to be able to muck around in rivers for a living.

PRESENTATION TITLE, Cutting Climate Change Down to Size Through Crowd sourcing, Collaborations, and Better Monitoring and Models

**Dr. Jessica Kozarek, St. Anthony Falls Laboratory, University of Minnesota,
Primary 11:20 am**

Jess Kozarek is a Research Associate and Manager of the Outdoor StreamLab at St. Anthony Falls Laboratory at the University of Minnesota. She received her BS degree in Chemical Engineering from Penn State before pursuing graduate work with a focus on land and water resource engineering in Biological Systems Engineering at Virginia Tech. Research interests include fish passage, stream restoration, and stream and floodplain nutrient dynamics and habitat.

PRESENTATION TITLE, Removing Roadblocks: Experiments on Culvert Design for Fish Passage

Carl Haensel, Minnesota Trout Unlimited, Primary 11:40 am

Carl Haensel is an educator, biologist, photographer, writer, fishing guide and owner of Namebini, a Duluth, Minnesota based business. Previously, he has served as a regional manager for the Commonwealth of Pennsylvania's Fish and Boat Commission. He has guided and taught flyfishing since 1996. He is also an educational consultant and enjoys post-secondary teaching. He serves as the Northern Minnesota Vice Chair for Trout Unlimited and Chair of the Lake Superior Coldwater Coalition, focusing on habitat issues involving streams in the Lake Superior basin.

PRESENTATION TITLE, Trout Unlimited's Conservation Success Index, Land Management and Climate Impacts

Cory Goldsworthy, Lake Superior Area Supervisor, Minnesota DNR Section of Fisheries, Primary 12:00 am

Cory has a B.S. in Fish and Wildlife Management from Northland College in Ashland, Wisconsin and an M.S. in Biology from Tennessee Technological University in Cookeville, Tennessee. He has worked with the Minnesota Department of Natural Resources for ten years and is currently the supervisor at the Lake Superior Area Fisheries Office in Duluth.

PRESENTATION TITLE, The Science(s) Behind Managing Stream Fishery Resources

John Sandberg, MN Pollution Control Agency, Primary 1:20 pm

John works as a Research Scientist with MPCA's Environmental Analysis and Outcomes division. His work involves biomonitoring and assessment of rivers and streams in Minnesota, particularly those in the Lake Superior, Rainy, Upper Mississippi, and Red River Basins. He holds a master's degree in Environmental Biology from UMD, and works out of MPCA's Brainerd office.

PRESENTATION TITLE, Monitoring and Assessing Water Quality in Lake Superior Basin Streams

Dr. R. William Bouchard Jr., Research Scientist, MN Pollution Control Agency, Primary 1:40 pm

Will Bouchard received his M.A. (2002) in Entomology from the University of Kansas and his Ph.D. (2007) in Entomology from the University of Minnesota. He was an adjunct professor at Hamline University and a post-doctoral researcher at the Academy of Natural Sciences of Drexel University before becoming a research scientist at the Minnesota Pollution Control Agency (MPCA) in 2008. His work at the MPCA includes coordinating the implementation of the tiered aquatic life uses (TALU) framework and the development of water quality standards to protect aquatic biota.

PRESENTATION TITLE, Implementation of a Tiered Aquatic Life Uses Framework for Lake Superior Basin Streams

Jenny Jasperson, MN Pollution Control Agency, Primary 2:00 pm

Jenny Jasperson is a water science professional at the Minnesota Pollution Control Agency and has been in the Duluth office since 2007. She is currently pursuing a Water Resource Science degree with the University of Minnesota and will be defending her Thesis in January 2016. Jenny has a B.S in Applied Math and Physics from the University of Wisconsin – Milwaukee and a minor in Soil Science from the University of Wisconsin – Stevens Point.

PRESENTATION TITLE, The Surface Water – Groundwater Connection: Amity Creek Watershed, Duluth, MN

Dr. Elizabeth Minor, Professor, Large Lakes Observatory, Primary 2:20 pm

Liz Minor is a professor in the Department of Chemistry and Biochemistry (where she is also Department Head) and at the Large Lakes Observatory at the University of Minnesota Duluth. She received her B.S. in Chemistry from The College of William and Mary in Virginia and her Ph.D. in Marine Chemistry and Geochemistry from the MIT/WHOI Joint Program in Oceanography and Ocean Engineering. Her research focuses upon carbon cycling in lake, river, and ocean water columns across seasonal to decadal scales. She is the author/co-author of 44 papers on this topic (focused mainly on organic matter cycling).

PRESENTATION TITLE, Interplays of nutrients and light: effects of river & stream inputs in Western Lake Superior during the 2012 flood

Dr. Michael J. Sadowsky, Department of Soil, Water and Climate and BioTechnology Institute, University of Minnesota, Primary 2:40 pm

Michael Sadowsky is Distinguished McKnight University Professor, Department of Soil, Water and Climate; and Director BioTechnology Institute, University of Minnesota, St. Paul, MN. He studied at the Department of Bacteriology at the University of Wisconsin-Madison, and received his Ph.D. in Microbiology from the University of Hawaii in 1983. Between 1983 and 1985, Dr. Sadowsky did postdoctoral research at the McGill University in the plant-microbe interactions group of the Plant Molecular Biology laboratory. He worked for the USDA in Beltsville Maryland for several years and joined the faculty at the University of Minnesota in 1989, where he is currently a member of 7 graduate faculties. Dr. Sadowsky is Director of Graduate Studies for the Microbial Ecology Program and is currently Editor-in-Chief of Microbiology Spectrum. He also is an editorial board member of the journals Symbiosis and Microbe and Environments. Dr. Sadowsky has authored or coauthored more than 227 articles in scientific journals and books, was elected fellow of the American Academy of Microbiology in 1999 and fellow of the American Association for the Advancement of Science in 2008. Dr. Sadowsky's research efforts are directed towards developing molecular tools to determine

sources of fecal bacteria in the environment and is active in several metagenome studies involving humans, animals and the environment.

PRESENTATION TITLE, Use and evaluation of new genome techniques to understand microbes in waterways

Dr. Kristofer Rolfhus, Professor Department of Chemistry and Biochemistry University of WI-La Crosse, Primary 3:20 pm

Kris Rolfhus is a professor in the Department of Chemistry and Biochemistry at the University of Wisconsin-La Crosse. He has been involved in a number of studies on mercury cycling in marine, freshwater, and terrestrial ecosystems, focusing on processes in the lower food web including trophic transfer, redox, and methylation. He received a B.S. in Biology and Chemistry from UW-La Crosse, and a Ph.D. in Environmental Chemistry/Oceanography from the University of Connecticut.

PRESENTATION TITLE, Mercury in Aquatic Food Webs of Six National Parks in the Western Great Lakes Region

Anna Varian, Minnesota DNR Section of Fisheries, Primary 3:40 pm

Anna has been working as the assistant area supervisor for the Duluth area DNR fisheries office for about two years. Prior to her position with the DNR she worked on tributaries across the Lake Superior basin for the USFWS in Ashland, WI.

PRESENTATION TITLE, MN DNR Fisheries Easements