

The logo for the Salt Symposium 2022 is a circular emblem divided into four quadrants of different colors: purple (top-left), blue (top-right), green (bottom-right), and yellow (bottom-left). The text "Salt Symposium 2022" is centered over the circle in a white, sans-serif font. The background of the top half of the page is a photograph of a cloudy sky, and the bottom half is a solid green bar with a thin yellow stripe at the very bottom.

Salt Symposium 2022



CONNIE FORTIN

 Bolton & Menk, Inc., *Senior Project Manager*
 connie.fortin@bolton-menk.com

Connie is recognized as a national expert on salt reduction strategies. With 40 years' of experience, she began her career in the software design industry before leaving to put her energy into protecting the environment and our waters. In 1996, she founded Fortin Consulting with the goal to unite citizens, environmental organization, and industry leaders in protecting freshwater resources. In the beginning of 2022, Fortin Consulting was acquired by Bolton & Menk, Inc. where Connie has been working on integrating her extensive knowledge on chloride and its impacts into the Bolton & Menk's repertoire. She enjoys finding ways to facilitate change that is both practical and progressive.

TUESDAY
AUGUST
2

KEYNOTE SPEAKERS MORNING SESSION



SUJAY KAUSHAL, PH.D.

 University of Maryland, *Professor*
 skaushal@umd.edu

Sujay is a professor in the Department of Geology and Earth System Science Interdisciplinary Center at the University of Maryland, College Park. His areas of expertise are biogeochemistry and hydrology. He completed a Bachelor of Arts in Biology (concentration in ecology and systematics) at Cornell University, and he completed his PhD in Biology (concentration in biogeochemistry) at the University of Colorado, Boulder. He completed his postdoctoral research at the Cary Institute of Ecosystem Studies (2003-2005). Before he joined University of Maryland, College Park, he was an assistant professor at the University of Maryland Center for Environmental Science from 2005-2010. His research focuses on freshwater salinization syndrome, long-term chemistry of fresh waters, effects of land use and climate change on water quality, and managing and restoring freshwater ecosystems.



KATRINA KESSLER, P.E.

 Minnesota Pollution Control, *Agency Commissioner*
 katrina.kessler@state.mn.us

Katrina Kessler was appointed commissioner of the Minnesota Pollution Control Agency Commissioner on November 2021. As commissioner, Katrina is dedicated to collaborative and pragmatic problem solving to address Minnesota's most complicated environmental and climate challenges. Before being appointed commissioner, Katrina held the role of assistant commissioner of water policy and agriculture since April 2019. Her full career at the MPCA extends more than 15 years as a permit engineer and in various managerial roles. Prior to her appointment to assistant commissioner, Katrina was the director of the surface water and sewers division at the City of Minneapolis for more than three years. In that role, Katrina was responsible for providing strategic direction for the management of the city's 150-year-old sewer infrastructure along with work to meet climate and water quality goals. Katrina has a Bachelor of Arts in Environmental Science from American University and a Master of Science in Environmental Engineering from the University of Minnesota. Katrina is an avid outdoor enthusiast who enjoys swimming, biking, running, and downhill and cross-country skiing. She also enjoys traveling to mountains and beaches with her husband and their two sons.



TUESDAY
AUGUST
2

NEW DIRECTIONS IN CHLORIDE MORNING SESSION



PETER CARTWRIGHT, P.E.



Cartwright Consulting Co.



peterscartwright@gmail.com

Peter Cartwright entered the water purification and wastewater treatment industry in 1974 and has had his own consulting engineering firm since 1980. He has a Bachelor in Chemical Engineering from the University of Minnesota and is a registered Professional Engineer in Minnesota.

Peter has provided consulting services to more than 250 clients globally. He has authored over 300 articles and book chapters, presented more than 300 lectures in conferences around the world, and is the recipient of several patents. He also has extensive experience in expert witness testimony and technology training education.

Peter is a recipient of the Award of Merit, Lifetime Member Award and Hall of Fame Award from the Water Quality Association and was the Technical Consultant for the Canadian Water Quality Association from 2007 until 2018.



MARGARET LUMLEY, PH.D.



ChloBis Water, *Chief Executive Officer*



malumley@chlobis.com

Margaret was born and raised in California and received her Bachelor of Science in Chemistry from the University of California, Santa Barbara in 2015 where she worked on the development of new materials for lithium-ion batteries. In the summer of 2014, she did a research internship at Trinity College in Dublin, Ireland where she worked on new membranes for water desalination. She then came to UW-Madison for her PhD. in Chemistry where she combined her two research passions: electrochemistry and water treatment. During that time, Margaret developed a new energy-efficient water desalination technology called a desalination battery. It is selective for the removal and recovery of chloride from water. After demonstrating successful proof-of-concept studies and realizing the promise of this technology, Margaret decided to start ChloBis Water with her two co-founders in 2021. Margaret currently serves as the CEO of ChloBis Water and envisions using this technology as a sustainable approach to address pressing water quality concerns. ChloBis Water is currently supported by an NSF Small Business Research grant and Margaret is a 2022 Activate fellow.



BROOKE ASLESON



Minnesota Pollution Control Agency
Chloride Program Administrator



brooke.asleson@state.mn.us

Brooke Asleson has worked at the Minnesota Pollution Control Agency since 2007 where she collaborates with federal, state, local partners, and research institutions to protect Minnesota's water resources. Since 2008, Brooke has been working on chloride and water quality issues at the MPCA. The core of that work has been developing partnerships with a wide variety of professionals to develop strategies that reduce chloride while supporting public needs.

Brooke coordinates the MPCA's Chloride Reduction Program that includes the highly successful Smart Salting training program as well as the new Chloride Reduction Grant program and many other resources and tools to help communities reduce salt use.

Brooke earned her Master of Science in Water Resources Science from the University of Minnesota. Prior to attending graduate school, she worked in the lab at the Metropolitan Council's Metro Water Treatment Plant. In her free time, Brooke enjoys spending time with her family at the lake, paddle boarding, kayaking, or just floating around!





STEVEN GOLDSMITH, PH.D.



Villanova University, *Associate Professor*



steven.goldsmith@villanova.edu

Dr. Steven Goldsmith is a watershed biogeochemist at Villanova University with over 20 years' experience evaluating how anthropogenic practices impact streamwater quality. He has researched a wide array of streams from the tropics to Antarctica and is currently focused on the impacts of road salt on suburban and urban watersheds. His research examines how land use change in the greater Philadelphia metropolitan area is driving changes in stream water chemistry and the associated impacts to our drinking water supply.

TUESDAY
AUGUST
2

NEW DIRECTIONS IN CHLORIDE
AFTERNOON SESSION



EMILIE SNELL-ROOD



University of Minnesota, *Associate Professor*



emilies@umn.edu

Emilie Snell-Rood is an associate professor in Ecology, Evolution, and Behavior at the University of Minnesota. Emilie grew up near Charlottesville, Virginia attending the College of William and Mary as an undergraduate and University of Arizona as a graduate student. She has been interested in road salt and its effects on animal behavior and development since moving to Minnesota in the winter of 2011 and being surprised by sidewalk salt crunching underfoot. Over the last six years, her lab has tackled a variety of questions on roadside habitat for pollinators, including salt and heavy metal runoff, plant establishment in roadsides, and monarch and bumblebee use of these areas. Emilie teaches a course in animal behavior, where several student projects have also considered the role of salt in animal behavior and development.



DWAYNE STENLUND



Minnesota Department of Transportation
Erosion Control Specialist



dwayne.stenlund@state.mn.us

Dwayne is a certified professional in erosion and sediment control and holds an adjunct teaching position at the University of Minnesota in the Department of Bioproducts and Biosystems Engineering. He has more than 25 years of experience in the practice of erosion prevention and storm water management for the Minnesota Department of Transportation, and provides technical support for storm water quality design, specification for construction activities, BMP guidance documents, and environmental commitment implementation. He has presented extensively across the United States on storm water management techniques and yearly at the International Erosion Control Association Conference. He has a graduate degree from the University of Minnesota in Plant Biology and extensive work in preventing erosion, managing turbidity, controlling fugitive dusts, bioremediation of poor soils, and establishing diverse plant community systems.



AICAM LAACOURI



Minnesota Department of Agriculture
Pesticide & Fertilizer Management



aicam.laacouri@state.mn.us

Aicam Laacouri is a research scientist with the Minnesota Department of Agriculture and attended graduate school at the University of Minnesota. At the MDA, he works on different topics related crop nutrient management, precision agriculture and soil health.





MAGGIE REITER

📍 Sunday, *Senior Scientist*
 ✉️ maggie@getsunday.com

Maggie Reiter is a senior scientist at Sunday, a Boulder-based startup that’s reinventing the lawn and garden space through a lens of e-commerce and technology. Maggie brings science expertise to company objectives, which encompasses everything from physical products to software services. Maggie has previously led turfgrass programs at the University of Minnesota and the University of California.



BILL HINTZ, PH.D.

📍 University of Toledo, *Assistant Professor*
 ✉️ william.hintz@utoledo.edu

Bill Hintz is an assistant professor at The University of Toledo. His research focuses on the ecological impacts of road salt pollution in freshwater ecosystems and the implications for ecosystem services.

WEDNESDAY
 AUGUST
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KEYNOTE SPEAKERS
 MORNING SESSION



SUJAY KAUSHAL, PH.D.

📍 University of Maryland, *Professor*
 ✉️ skaushal@umd.edu

Sujay is a professor in the Department of Geology and Earth System Science Interdisciplinary Center at the University of Maryland, College Park. His areas of expertise are biogeochemistry and hydrology. He completed a Bachelor of Arts in Biology (concentration in ecology and systematics) at Cornell University, and he completed his PhD in Biology (concentration in biogeochemistry) at the University of Colorado, Boulder. He completed his postdoctoral research at the Cary Institute of Ecosystem Studies (2003-2005). Before he joined University of Maryland, College Park, he was an assistant professor at the University of Maryland Center for Environmental Science from 2005-2010. His research focuses on freshwater salinization syndrome, long-term chemistry of fresh waters, effects of land use and climate change on water quality, and managing and restoring freshwater ecosystems.



JED FALGREN, P.E.

📍 Minnesota Department of Transportation
State Maintenance Engineer
 ✉️ jed.falgren@state.mn.us

Jed started at MnDOT in 1989 and worked primarily as a Project Engineer until he left for the private manufacturing sector in 1995. In 2012, Jed returned to MnDOT and has been serving as the Maintenance Engineer in District 7 since then. During this time, the District 7 Maintenance team has trialed and implemented many new practices, equipment and materials to improve Snow and Ice operations – frequently looking at the work being done at other agencies for inspiration and guidance. Jed also chaired MnDOT’s Maintenance Business Management Team and has been active on MnDOT’s Asset Management and TSMO Leadership Teams.

Jed is a graduate of North Dakota State University. He and his wife Michelle have 6 children and reside in Mankato.



WEDNESDAY
AUGUST
3

SNOW AND ICE MANAGEMENT

MORNING SESSION



BILL THOMPSON



Lake Simcoe Region Conservation Authority
Manager of Watershed Plans and Strategies



b.thompson@lsrca.on.ca

Bill Thompson has a Bachelor in Environmental Science from Trent University, and a Master of Science in Botany from the University of Manitoba. He is the manager of Watershed Plans and Strategies at Lake Simcoe Region Conservation Authority in central Ontario, where his role is to coordinate and support the work of colleagues and external partners in developing and implementing plans to protect and restore the health of Lake Simcoe's tributaries and aquifers.

For the past five years, part of his job has been to lead LSRCA's 'Salt Reduction Strategy,' which aims to slow the increase of chloride in Lake Simcoe. Bill works with municipal roads managers, and private parking lot owners and contractors, to understand their operational realities, and barriers limited the uptake of better winter maintenance practices.



TODD HUBMER, P.E.



Bolton & Menk, Inc.
Principal Water Resource Project Manager



todd.hubmer@bolton-menk.com

Todd Hubmer is a principal water resource engineer who began his engineering career in 1992. Todd skillfully collaborates with clients to develop a vision for project outcomes. He leads public processes to build community and regulatory support and trust, and throughout his career he has developed strategic partners to assist in securing the necessary funding to bring any project, both small and large, from vision to reality. He has experience serving as consultant city engineer, watershed engineer, and lead water resource project manager for some of the largest public projects in Minnesota. His experience includes municipal processes, public policy development, grant writing, public process and strategy, lake and stream restorations, pollutant trading negotiations, water resource planning, and water treatment systems.



LAURA FAY



Western Transportation Institute at Montana State
Research Scientist and Program Manager



laura.fay1@montana.edu

Laura Fay is a research scientist and program manager for Cold Climates Operations & Systems research group at the Western Transportation Institute at Montana State University. She has conducted and led research in the fields of winter maintenance operations and low volume roads since 2006. Laura has dedicated her career to supporting state, federal, and local transportation agencies in the identification and implementation of best practices through applied research. This has been demonstrated in her publication record, and volunteer efforts serving on the Transportation Research Board (TRB) Winter Maintenance Committee and currently serves as committee chair for the TRB Low Volume Roads Committee. Laura's technical background was developed from gaining an a Master of Science in Environmental Health from the University of Nevada, Reno, and a Bachelor of Science in Earth Sciences from the University of California, Santa Cruz.





JAMES MARTIN

 Virginia Department of Transportation
Facility Environmental Compliance Manager
 jamest.martin@vdot.virginia.gov

James is with the Virginia Department of Transportation's Environmental Division. He has geology degrees from Virginia Tech and Wright State University. He's worked for VDOT for over 27 years either directly or as a consultant. His current position focuses on environmental compliance at VDOT's maintenance facilities by developing guidance and implementing a multimedia assessment program.

WEDNESDAY
AUGUST
3

SNOW AND ICE MANAGEMENT
AFTERNOON SESSION



RICK NELSON, P.E.

 American Association of State Highway Officials
SICOP Coordinator
 rnelson@aaashto.org

Rick Nelson retired from the Nevada Department of Transportation after a career spanning 31 years. During that time, he served 13 years as district engineer and 11 years as the assistant director of operations. He has extensive experience in highway operations including the delivery of routine maintenance, winter service strategies, materials, equipment, traffic engineering, and ITS road weather information systems (RWIS). He currently provides coordination services for AASHTO's Winter Maintenance Technical Service Program - SICOP and hosts the podcast "SICOP Talks Winter Ops."

He has been part of several winter service research projects to develop RWIS technology and anti-icing strategies as well as serving on many National Cooperative Highway Research Program project panels guiding research into winter maintenance issues. From 2000-2008 Rick coordinated with the Federal Highway Administration Office of International Programs to provide assistance to the National Argentine Highway Authority to develop their winter operations program to provide greater mobility during winter, which included training, operational recommendations, and advise on implementation.

Rick served on the World Road Association Winter Service Technical Committee from 2008-2015 as was the English Speaking Secretary from 2012-2015. In 2002, he co-chaired the Advance Technologies and Winter Operations Management International Scan to Japan, and authored several articles on winter service.



PATTI CASWELL

 Oregon Department of Transportation
Environmental Program Manager
 patti.caswell@odot.oregon.gov

Patti Caswell is the manager of the environmental program for the Maintenance and Operations Branch at Oregon Department of Transportation. She's been in her current position for more than 10 years. Patti has over 30 years of environmental experience including working for the U.S. Forest Service, teaching at Humboldt State University, environmental consulting, and regulatory work for the Oregon Department of State Lands.

In her role for the Maintenance and Operations Branch, Patti developed best management practices for the use and storage of road salt when the agency decided to add the solid material to the winter maintenance toolbox. Patti is an outspoken leader who believes work can be fun. In her current position, Patti represents ODOT on the Clear Roads Technical Advisory Committee and is the current program chair.





SARAH SIVERS

 Virginia Department of Environmental Quality,
Water Permit, Planning, and Monitoring Manager
 sarah.sivers@deq.virginia.gov

Sarah Sivers is the water permit, planning, and monitoring manager for the Virginia Department of Environmental Quality (DEQ), Northern Regional Office. During her 18 years with DEQ, she has worked in the Virginia Water Protection Permit Program as a permit writer, in the Office of Water Supply working on surface water withdrawal projects, and in the Water Quality Planning Program as a team lead overseeing the regional development and implementation of total maximum daily loads (TMDLs) and assessment of the region's water quality data. Currently, Sarah manages the regional Water Permit, Planning, and Monitoring Department, which is responsible for the following programs: Wastewater Permits, Pretreatment, Toxics Management, Water Quality Assessments, TMDLs, and Ambient Monitoring. Sarah has a Bachelor of Science in Biology from the College of William and Mary and a Master of Natural Resources from Virginia Tech.



DANIELLE SCHUMERTH

 City of Minneapolis, Public Works,
Environmental Inspector
 danielle.schumerth@minneapolismn.gov

Danielle Schumert graduated from the University of Wisconsin-Madison with a Bachelor of Science in International Agriculture & Natural Resources (a fancy term for Forestry). She has spent her professional career working with incentive programs, both at the Maryland DNR Forest Service and with the City of Minneapolis. She currently manages the Stormwater Utility Credits Program and Vegetation Management Program for the City of Minneapolis. She is a member of the International Erosion Control Association and serves on the Outreach & Networking Committee for the Minnesota Shade Tree Advisory Committee.

Having lived in both northeastern Wisconsin and northern Sweden, she loves nature and winter, and first became interested in chloride reduction while living in northern Sweden and experiencing a salt-free, snow-filled winter there for the first time. Danielle also loves languages and speaks Swedish, French, and is currently learning Italian for an upcoming trip to Italy! Any and all recommendations on visiting Italy are welcome!



SUE NISSEN

 Stop Over Salting
 n.sue4408@gmail.com

Sue Nissen is a Minnesota water steward and member of the citizen group StopOverSalting (SOS). Sue has a passion for reducing the amount of chloride entering Minnesota's waters. She is actively engaged in her community and state, raising awareness of the consequences of chlorides and the opportunities to reduce. With the member of SOS, Sue has advocated for Minnesota legislation that would provide training and limited liability protection for commercial applicators. Sue is a retired marketer and Minnesota teacher.

