

Lake Champlain: Our Future is Now

Lake Champlain Research Conference

January 8th-9th, 2018

Davis Center, University of Vermont

Burlington, VT

**AGENDA**



**Day 1: January 8th, 2018**

8:30-5 PM: Registration

*UVM Davis Center, 4th Floor*

8:30-9:30 AM: Coffee, breakfast, and networking

*Silver Maple Room*

9:30 AM: Welcome

*Silver Maple Room*

* Julie Moore, Secretary, Vermont Agency of Natural Resources
* William B. Bowden, Director, Lake Champlain Sea Grant Program
* Timothy Mihuc, Co-Director, Lake Champlain Research Consortium
* Eric Howe, Director, Lake Champlain Basin Program

10:30 AM – 12 PM: Concurrent sessions

10:30 AM – 12 PM: Concurrent Session A: Fish, Wildlife, and Habitat

*Sugar Maple Room*

Moderator: J. Ellen Marsden

* 10:30-10:45 AM: Vermont Dam Screening Tool

*Shayne Jaquith, The Nature Conservancy*

* 10:45-11:00 AM: Role of drainage and barriers in the genetic structuring of a tessellated darter metapopulation

*Peter Euclide, University of Vermont*

* 11:00-11:15 AM: Water quality blueprint – nature-based solutions for clean water in Lake Champlain

*Dan Farrell, The Nature Conservancy*

* 11:15-11:30 AM: Diet analysis of wild and stocked juvenile lake trout in Lake Champlain: Looking for clues that explain recruitment

*J. Ellen Marsden and Madeline Schumacher, University of Vermont*

* 11:30 AM-11:45 AM: Does elevated water temperature in causeway openings differentially affect movement of coldwater and coolwater fish in Lake Champlain?

*Jessica Griffin and J. Ellen Marsden, University of Vermont*

* 11:45 AM-12:00 PM: Extended Discussion

10:30 AM – 12 PM: Concurrent Session B: Preventing algal blooms in the Missisquoi Bay of Lake Champlain: Interdisciplinary approach to identifying opportunities for improving agro-ecological programming

*Williams Family Room*

Moderator: Jean-François Bissonnette, Université du Québec en Outaouais

* 10:30-10:45 AM: Evaluating the state of knowledge diffusion in agrienvironment in the context of intensive agriculture in Southern Quebec

*Jean-François Bissonnette and Jérôme Dupras, Université du Québec en Outaouais*

* 10:45-11:00 AM: The effect of cyanobacteria on water quality and recreation: A study of willingness to pay in southern Quebec

*Chloé L’Écuyer-Sauvegeau, Université du Québec en Outaouais*

* 11:00-11:15 AM: The economic characteristics of watershed goods and services: a novel institutional approach

*Vijay Kolinjivadi, Université du Québec en Outaouais*

* 11:15-11:30 AM: Institutional analysis of the regulatory and voluntary agri-environmental measures in Quebec and their implications for the design of Payments for Ecosystem Services (PES)

*Alejandra Zaga Mendez, Université du Québec en Outaouais*

* 11:30-11:45 AM: Developing agro-environmental scenarios for multiple ecosystem services – a co-benefits approach

*Sylvia Wood and Caroline Simard, Université du Québec en Outaouais*

* 11:45 AM-12:00 PM: Do windbreaks and managed riparian habitat maintain robust wildlife communities in fragmented ecosystems?

*Matthieu Beaumont and Jérôme Dupras Université du Québec en Outaouais*

10:30 AM – 12 PM Concurrent Session C: Informing and building resilience to extreme events using an integrated modeling approach in the Lake Champlain Basin

*Jost Foundation Room*

Moderator: Elizabeth Doran, University of Vermont

* 10:30-10:45 AM: Exploring and defining resilience in Vermont: Town and regional disaster preparedness and planning

*Clare Ginger, University of Vermont, and Richard Kujawa, Saint Michael’s College*

* 10:45-11:00 AM: The drones are coming

*Jarlath O’Neil-Dunne, University of Vermont*

* 11:00-11:15 AM: Modeling the impact of extreme events on the water quality in Lake Champlain

*Bill Gibson, University of Vermont*

* 11:15-11:30 AM: Modeling water quality governance networks on the Missisquoi River Watershed

*Patrick Bitterman, University of Vermont*

* 11:30-11:45 AM: Digging into adaptive capacity: On farm monitoring of indicators of soil health

*Sarah Coleman, University of Vermont*

* 11:45 AM-12:00 PM: Unpacking intention: Using agent based models to predict adoption of best management practices in the Missisquoi River Watershed

*Elizabeth M.B. Doran, University of Vermont*

10:30 AM – 12 PM Concurrent Session D: Tile Drains and Nutrients

*Chittenden Bank Room*

Moderator: Marli Rupe, Vermont Department of Environmental Conservation

* 10:30-10:45 AM: Edge-of-field nitrogen and phosphorus export in tile-drained field managed as corn for silage

*Eric Young, Stephen Kramer, and Laura Klaiber, Miner Institute*

* 10:45-11:00 AM: Four-component hydrograph separation model to predict phosphorus and tracers export from a Pike River subwatershed

*Aubert Michaud, R&D Institute for the Agri-Environment, Joann Whalen, McGill University, and Simon-Claude Poirier*

* 11:00-11:15 AM: Evaluating the impacts of agricultural tile drain systems to water quality in St. Albans Bay, Vermont, and the performance of a reactive media filter

*Dave Braun, Stone Environmental, Inc.*

* 11:15-11:30 AM: Impact of a winter rye cover crop on edge-of-field nutrient losses in corn silage production

*Keegan Griffith and Eric Young, Miner Institute*

* 11:30-11:45 AM: End of pipe filter prototypes for agricultural tile drains

*Tara Kulkarni, Norwich University*

* 11:45 AM-12:00 PM: Phosphorus flows and legacy accumulation in Vermont from 1925-2012: Implications for nutrient management policy

*Michael Wironen and Jon Erickson, University of Vermont*

12 PM-1 PM Lunch

*Silver Maple Ballroom*

1-2:30 PM Concurrent sessions

1-2:30 PM: Concurrent Session E: Nutrient and algal dynamics in the Lake’s shallow eutrophic embayments: drivers of inter- and intra-annual variability

*Jost Foundation Room*

Moderator: Andrew Schroth and Wilton G. Burns, University of Vermont

* 1:00-1:15 PM: A comparison of FlowCam and microscopy methods for phytoplankton community assessment in Lake Champlain

*Allison Hrycik, University of Vermont; Angela Shambaugh, Vermont Department of Environmental Conservation; and Jason Stockwell, University of Vermont*

* 1:15-1:30 PM: Changes in the cyanobacteria community of Lake Champlain as revealed by the Cyanobacteria Monitoring Program

*Angela Shambaugh, Vermont Department of Environmental Conservation*

* 1:30-1:45 PM: The eutrophication of St. Albans Bay, VT: A paleolimnological assessment

*Andrea Lini, Matthew Kraft, and Suzanne Levine, University of Vermont*

* 1:45-2:00 PM: Bloom or no bloom: the dynamics of toxic cyanobacterial communities in Missisquoi Bay, Quebec

*Nathalie Fortin, Natural Research Council Canada*

* 2:00-2:15 PM: The potential contribution of streambanks to phosphorus loads in the Lake Champlain Basin, with a focus on the Missisquoi River

*Don Ross, Vanesa Perillo, and Beverley Wemple, University of Vermont*

* 2:15-2:30 PM: Similar and contrasting drivers of nutrient and cyanobacteria dynamics in two adjacent shallow, eutrophic bays in Lake Champlain

*Wilton G. Burns, Jason Stockwell, Toby Smith, Bridger Banco, and Andrew Schroth, University of Vermont*

1:00-2:15 PM: Concurrent Session F: Stormwater treatment technologies – balancing volume and phosphorus reduction  
 *Williams Family Room*

Moderator: Becky Tharp, Watershed Consulting Associates

* 1:00-1:15 PM: Lessons from 5+ years of stormwater bioretention research in Vermont

*Stephanie Hurley, University of Vermont*

* 1:15-1:30 PM: Case Study: Bioretention installation at Giorgetti Arena, Rutland, and Harwood High School, Duxbury – design considerations, public partnership, aesthetic improvement and educational outreach in the name of improving water quality

*Andres Torizzo, Watershed Consulting Associates, LLC*

* 1:30-1:45 PM: Visualizing Green Stormwater Infrastructure (GSI) to understand maintenance capacities of Vermont towns and aesthetic preferences of Vermont municipal officials

*Holly Greenleaf, University of Vermont*

* 1:45-2:00 PM: Floating treatment wetlands for stormwater pond performance enhancement – implications for application in northern climates

*Becky Tharp, Watershed Consulting Associates*

* 2:00-2:15 PM: Applying Bayesian Belief Network to understand public perception of green stormwater infrastructures in Vermont

*Qing Ren, University of Vermont*

* 2:15-2:30 PM: Extended Discussion

1:00-2:30 PM: Concurrent Session G: Floodplain Connectivity and Geomorphic Significance

*Sugar Maple Room*

Moderator: Mike Kline, Vermont Department of Environmental Conservation

* 1:00-1:15 PM: Natural functioning floodplains in Vermont: Assessing their loss, value, and restoration

*Mike Kline, Vermont Agency of Natural Resources*

* 1:15-1:30 PM: Restoring floodplains in Vermont

*Roy Schiff, Milone & MacBroom*

* 1:30-1:45 PM: Geomorphic and hydrologic controls of Japanese knotweed, an invasive exotic plant species: Lessons learned from the Western U.S.

*Rebecca Diehl, University of Montana*

* 1:45-2:00 PM: Restoring river-floodplain connectivity and floodplain vegetative communities for flood risk and water pollution management

*Shayne Jaquith, The Nature Conservancy*

* 2:00-2:15 PM: Using unmanned aircraft system (UAS) to monitor bank erosion along river corridors

*Scott Hamshaw, University of Vermont*

* 2:15-2:30 PM: Extended discussion

2:30-2:45 PM Coffee Break

2:45-4:15 PM Concurrent Sessions

2:45-4:15 PM: Concurrent Session H: Nutrient loading in the Lake Champlain Basin across time and space: insights from long term monitoring and targeted short-term studies on the impacts of climate and land use change

*Sugar Maple Room*

Moderator: Andrew Schroth and Erin Seybold, University of Vermont

* 2:45-3:00 PM: Emerging *in-situ* sensor technologies provide insight into the ecological function of three Vermont streams

*William Bowden, Ryan Sleeper, Andrew Schroth, and Matthew C.H. Vaughan, University of Vermont*

* 3:00-3:15 PM: Yields and trends in flux of total suspended solids, phosphorus, and nitrogen from tributaries to Lake Champlain, 1991 through 2014

*Laura Medalie, United States Geological Survey*

* 3:15-3:30 PM: Identification of patterns in hysteresis in suspended sediment-discharge relationships to infer watershed sediment dynamics

*Scott Hamshaw, University of Vermont*

* 3:30-3:45 PM: Effects of land use on the timing and magnitude of carbon and nitrogen fluxes: an analysis of high-frequency sensor measurements from forested, agricultural, and urban watersheds in the Lake Champlain Basin

*Erin Seybold & Andrew Schroth, University of Vermont*

* 3:45-4:00 PM: Use of Bayesian regression models to discern spatial patterns in sediment and nutrient export to Lake Champlain

*Kristen Underwood, University of Vermont*

* 4:00-4:15 PM: Using *in situ* UV-visible spectrophotometer sensors to predict phosphorus species concentrations in Lake Champlain tributaries

*Matthew C.H. Vaughan, William Bowden, Andrew Vermilyea, Jamie Shanley, Beverley Wemple, and Andrew Schroth, University of Vermont*

2:45-4:15 PM: Concurrent Session I: International Joint Commission’s Flood Study

*Jost Foundation Room*

Moderators: Robert Flynn and Keith Robinson, United States Geological Survey

* 2:45-3:00 PM: IJC Lake Champlain-Richelieu River Study Session Introduction

*Keith Robinson, United States Geological Survey and Jean-Fran*ç*ois Cantin, Environment and Climate Change Canada*

* 3:00-3:15 PM: Do we have the science to reduce the severity of impacts due to flooding on the Lake Champlain-Richelieu River Basin? The International Joint Commission Mandate

*Michael Laitta and Pierre-Yves Caux, International Joint Commission*

* 3:15-3:30 PM: LCRR Social, Political and Economic Advisory Group

*Curt Gervich, SUNY Plattsburgh*

* 3:30-3:45 PM: LCRR Flood Management and Mitigation Measures Technical Working Group

*Bill Werick*

* 3:45-4:00 PM: LCRR Hydrology, Hydraulics and Mapping Technical Working Group

*Jesse Feyen, National Oceanic and Atmospheric Administration*

* 4:00-4:15 PM: LCRR Resource Response Technical Working Group

*Perry Thomas, Vermont Agency of Natural Resources, and Glenn Benoy, International Joint Commission*

2:45-4:15 PM: Concurrent Session J: Cultural Heritage

*Chittenden Bank Room*

Moderators: Jim Brangan, *Lake Champlain Basin Program*

* 2:45-3:00 PM: A synthetic overview of paleobotanical and paleofaunal remains from the Champlain Basin Native American archeological sites

*Jess Robinson, State of Vermont Division of Historic Preservation*

* 3:00-3:15 PM: The shipwrecks of Lake Champlain Underwater Historic Preserve

*Jenny Craig, Lake Champlain Maritime Museum*

* 3:15-3:30 PM: In Champlain’s wake: the small boat traditions of Lake Champlain

*Douglas Brooks, Henry Sheldon Museum of Vermont History*

* 3:30-3:45 PM: The Gleaner of St. Albans: Canals, commerce, and connections on 19th Century Lake Champlain

*Alex Lehning, Saint Albans Museum*

* 3:45-4:00 PM: Boats, travel, and trains: the Kent-Delord House and Lake Champlain teens telling history

*Don Wickman, Kent-Delord House Museum*

* 4:00-4:15 PM: Preserving *Spitfire*: A legacy of 1776

*Art Cohn, Lake Champlain Maritime Museum*

4:15-4:30 PM Coffee Break

4:30-5:30 PM Panel Discussion: Congressional Delegation Staffers

*Sugar Maple Room*

Moderator: Eric Howe, Lake Champlain Basin Program

* Tom Berry, Field Representative for U.S. Senator Patrick Leahy
* Haley Pero, Outreach Staff, U.S. Senator Bernie Sanders
* George Twigg, State Director, U.S. Congressman Peter Welch

5:30-7:00 PM: Poster session (see p. 11 for full list of posters), dinner, and social, sponsored by   
the Lake Champlain Research Consortium

*Livak Fireplace Lounge*

*Note*: Poster session will run from 5:30-6:30, and dinner and drinks will be served from 5:30-7:00PM.

7:00-8:30 PM Keynote address by Dan Egan, author of *The Death and Life of the Great Lakes*

For more information on Dan Egan and his work, visit his book page: <http://books.wwnorton.com/books/The-Death-and-Life-of-the-Great-Lakes/>

*Grand Maple Ballroom*

**Day 2: Tuesday, January 9th, 2018**

8:30 AM-12:00 PM: Registration

*UVM Davis Center, 4th Floor*

8:30-9:30 AM: Coffee, breakfast, and networking

*Silver Maple Ballroom*

9:30-10:30 AM: Keynote address by Larry Greenberg, Karlstad University

“Conservation of landlocked Atlantic salmon in a regulated river: Taking a holistic approach”

*Silver Maple Ballroom*

10:30-11:00 AM: Coffee break

11:00 AM-12:15 PM: Concurrent Sessions

11:00-12:15 PM: Concurrent Session K: Salmon Restoration, Part I

*Silver Maple Ballroom*

Moderator: William Ardren

* 11:00-11:15 AM: Evaluating performance of landlocked Atlantic salmon stocked in Lake Champlain from feral and domestic brood sources

*Brian Chipman, Vermont Fish and Wildlife Department*

* 11:15-11:30 AM: Atlantic salmon restoration in Lake Ontario – what have we learned so far?

*Margaret Murphy, Integrated Aquatic Sciences, LLC*

* 11:30-11:45 AM: Minor shifts towards more natural conditions in captivity improve long-term survival and reduce dispersal in reintroduced salmon populations

*William Ardren, U.S. Fish and Wildlife Service, Andrew Harbicht and Dylan Fraser, Concordia University*

* 11:45 AM-12:00 PM: The evolutionary consequences of staying in freshwater: Seawater performance, physiology and endocrinology of landlocked and anadromous salmon

*Stephen McCormick, United States Geologic Survey*

* 12:00-12:15 PM: Dispersal, habitat use and density-dependent growth of Atlantic salmon (*Salmo salar)* juveniles: insights from stocking fry in the Boquet River, New York

*James Grant, Eric Brunsdon, and Dylan Fraser, Concordia University*

11:00-12:15 PM: Concurrent Session L: Cyanobacteria

*Williams Family Room*

Moderator: Angela Shambaugh, Vermont Department of Environmental Conservation

* 11:00-11:15 AM: Seasonal drivers of phosphorus partitioning at the sediment-water interface of two shallow eutrophic Vermont lakes

*Lauren Prinzing, University of Vermont*

* 11:15-11:30 AM: Developing a long-term indicator of cyanobacteria bloom frequency for Lake Champlain

*Bridget O’Brien, Vermont Department of Health*

* 11:30-11:45 AM: Cyanotoxins and public health

*Sarah Vose, Vermont Department of Health*

* 11:45 AM-12:00 PM: Barriers to change: factors influencing a community’s response to harmful algal blooms

*Diana Hackenburg, University of Vermont*

* 12:00-12:15 PM: Extended Discussion

11:00-12:15 PM: Concurrent Session M: Toxins and Contaminants in the Lake Champlain Ecosystem

*Chittenden Bank Room*

Moderator: James Pagano, SUNY Oswego

* 11:00-11:15 AM: Toxins in the waters of the Lake Champlain Basin, a preliminary assessment of the risks to aquatic biota from organic compounds in our rivers and lakes

*Nat Shambaugh*

* 11:15-11:30 AM: Pharmaceutical contaminants in the Lake Champlain Basin

*Christine Vatovec, University of Vermont*

* 11:30-11:45 AM: Lake George, New York: Two recent case studies of inefficient community wastewater treatment technology and the consequences to ground water contamination with plant nutrients and other contaminants

*Jim Sutherland*

* 11:45 AM-12:00 PM: Heavy metal contaminants of soil and water associated with illegal garbage burn piles, West Haven, Vermont

*Helen Mango, Castleton University*

* 12:00-12:15 PM: Microplastic pollution and biomagnification in Lake Champlain

*Danielle Garneau, SUNY Plattsburgh*

11:00-12:15 PM: Concurrent Session N: Geology, Land Use, and Land Cover

*Jost Foundation Room*

Moderator: Kris Stepenuck, Lake Champlain Sea Grant Program

* 11:00-11:15 AM: Transport dynamics of Missisquoi Bay, Lake Champlain, Vermont

*Patricia Manley and Thomas Manley, Middlebury College; Jean-Phillippe Juteau, Maritime Way Scientific Ltd.*

* 11:15-11:30 AM: Climate change and intraseasonal variability in Lake Champlain: application of the SUNY Plattsburgh data buoy and long-term monitoring data

*Eric Leibensperger and Mark Malchoff, SUNY Plattsburgh*

* 11:30-11:45 AM: High-resolution land cover for the Lake Champlain Basin

*Jarlath O’Neil-Dunne, University of Vermont*

* 11:45 AM-12:00 PM: Exploring lawn care practices of homeowners across the Lake Champlain Basin to promote behavior changes, and ultimately reduce stormwater runoff

*Kris Stepenuck, University of Vermont, UVM Extension, and Lake Champlain Sea Grant Program*

* 12:00-12:15 PM: Lake George Septic Initiative Program

*Chris Navitsky, The FUND for Lake George*

12:15-1:15 PM: Lunch

*Silver Maple Ballroom*

1:15-2:30 PM Concurrent Session O: Salmon Restoration, Part II

*Silver Maple Ballroom*  
Moderator: William Ardren

* 1:15-1:30 PM: Homing and imprinting cues for landlocked Atlantic salmon (*Salmo salar*)

*David Minkoff, Boston University*

* 1:30-1:45 PM: Dam removal on the Boquet river and its effect on Atlantic salmon (*Salmo salar*)

*Jessamine Trueman, Concordia University*

* 1:45-2:00 PM: Understanding effect: consequences of delayed movement for both upstream and downstream passage of Atlantic salmon at barriers

*Theodore Castro-Santos, United States Geological Survey*

* 2:00-2:15 PM: The influence of thiamine deficiency on the behavior of larval landlocked Atlantic salmon

*Nicole Hill, Ashlee Prevost, Dylan John Fraser, Concordia University; William Ardren, U.S. Fish and Wildlife Service; James W.A. Grant, Concordia University*

* 2:15-2:30 PM: Extended discussion

1:15-2:30 PM Concurrent Session P: Invasive Species

*Jost Foundation Room*

Moderator: Timothy Mihuc

* 1:15-1:30 PM: Long-term zooplankton community patterns in Lake Champlain, USA: The role of invasive species in restructuring lake food webs

*Timothy Mihuc, SUNY Plattsburgh*

* 1:30-1:45 PM: A comparison of zooplankton diel vertical migration in Lake Champlain before and after the invasion of *Bythotrephes*

*Mark LaMay, Lake Champlain Research Institute*

* 1:45-2:00 PM: Adirondack Lake Mapping Project: Using sonar to collect data on Lake characteristics

*Erin Vennie-Volrath, The Nature Conservancy*

* 2:00-2:15 PM: Leveraging partnerships to advance the Adirondack Aquatic Invasive Species (AIS) Prevention Program: a voluntary boat inspection and decontamination program in the Northeast

*Eric Holmlund, Paul Smith’s College Adirondack Watershed Institute, and Meg Modley, Lake Champlain Basin Program*

* 2:15-2:30 PM Extended Discussion

1:15-2:30 PM Concurrent Session Q: Road Salt

*Williams Family Room*

Moderator: Daniel Kelting, Paul Smith’s College

* 1:15-1:30 PM: Base cation loss from road salting with implications for acid deposition recovery

*Daniel Kelting and Corey Laxson,* Paul Smith's College

* 1:30-1:45 PM: Road salt induced meromixis of Mirror Lake (Lake Placid, NY)

*Brendan Wiltse, Ausable River Association; Corey Laxson, Paul Smith's College; Elizabeth Yerger*

* 1:45-2:00 PM: Monitoring for chloride concentration using automated equipment

*Dana Allen, Watershed Consulting Associates, LLC*

* 2:00-2:15 PM: 2:00-2:15 PM: Salt export to the Ausable River from the Village of Lake Placid

*Corey Laxson, Elizabeth Yerger, and Dan Kelting, Paul Smith’s College*

* 2:15-2:30 PM Winter Maintenance Best Practices: Identifying and Lowering Private Contractors' Barriers to Adoption

*Holden Sparacino, University of Vermont*

1:15-2:30 PM Concurrent Session R: Lake Champlain Unfiltered

*Chittenden Bank Room*

Moderator: Ellen Kujawa, Lake Champlain Basin Program

Late career and newly retired environmental professionals share their experiences and guidance with students and early career professionals. Featuring a fantastic panel of experts:

* William Howland, *Lake Champlain Basin Program (retired)*
* Martin Mimeault, *Ministère du Développement durable, de l'Environnement et de la Lutte contre les changements climatiques*
* Kip Potter, *Natural Resources Conservation Service (retired)*
* Eric Smeltzer, *Vermont Agency of Natural Resources (retired)*
* Jane Smith, *Adirondack Lakes Alliance*
* Jim Sutherland, *New York Department of Environmental Conservation (retired)*

Poster Session: January 8th, 5:30-6:30 PM

Monitoring for Chloride Using Automated Equipment & Estimating Watershed Scale Source-Specific Chloride Application Reductions

*Dana Allen, Watershed Consulting Associates*

Characterization of Microplastic Polymers Biomagnifying up the Lake Champlain Food Web

*Erin Ashline and Danielle Garneau, SUNY Plattsburgh*

The Role of Overwintering Zooplankton on Winter Freshwater Food Webs

*Ben Block, University of Vermont*

Exploring Aerosolized Cyanobacteria as a Potential Environmental Risk Factor for Amyotrophic Lateral Sclerosis (ALS)

*Tanya Butt and Dominic Facciponte, Dartmouth-Hitchcock Medical Center*

The Transport of Fecal Coliform and *E. coli* bacteria via surface and subsurface runoff from artificially drained fields in the Champlain Basin

*Casey Corrigan, Laura Klaiber, and Steve Kramer, Miner Institute*

Shipwreck Tugboat US Lavallee

*Jenny Craig, Lake Champlain Maritime Museum*

Using the ERA5 Reanalysis Dataset to Identify Extreme Flooding Events in the Northeastern United States

*Caitlin Crossett, Arne Bomblies, Lesley-Ann Dupigny-Giroux, and Alan Betts, Vermont EPSCoR*

Analysis of Large Precipitation Events for Burlington, VT from 1900 to 2016

*Harris Eidelman, Vermont EPSCoR*

Water Quality Blueprint - Nature-Based Solutions for Clean Water in Lake Champlain

*Dan Farrell, The Nature Conservancy*

Cyanobacteria Monitoring in Lake Champlain

*Lori Fisher, Lake Champlain Committee*

Visual display of complex, multidimensional spatial data from acoustic telemetry

*Jessica Griffin and J. Ellen Marsden, University of Vermont*

Spatial and Temporal Distribution and Abundance Microplastics in Lake Champlain Long-Term Monitoring Samples  
*Susan-Marie Nadeau Hagar, Lindsey E. Austin, and Danielle Garneau, SUNY Plattsburgh*

Estimating Abundance of Spawning Lake Sturgeon in the Winooski River, VT Using Dual-Frequency Identification Sonar (DIDSON)

*Lisa Izzo, Vermont Cooperative Fish and Wildlife Research Unit, Donna Parrish, University of Vermont, Gayle Zydlewski, University of Maine, and Chet Mackenzie, Vermont Fish and Wildlife Department*

Vermont Dam Screening Tool

*Shayne Jaquith, The Nature Conservancy*

Development of a Lake Champlain Anglers' Temperature Database

*Joseph Judge, SUNY Plattsburgh Research Foundation*

Water Quality Impacts of a Wood Chip Bioreactor Treatment System Receiving Silage Bunker Runoff in the Lake Champlain Watershed

*Deborah Kraft, University of Vermont*

Quantifying Phosphorus Content in Riparian Buffers of Different Land Use

*Brittany Lancellotti, University of Vermont*

Observed and projected temperature change in Lake Champlain

*Eric Leibensperger and Vasu Govani, SUNY Plattsburgh*

Sedimentary Pockmarks in Missisquoi Bay

*Patricia Manley, Thomas Manley, and Eli Orland, Middlebury College*

Missisquoi Bay circulation dynamics and 3D hydrodynamic modeling of the restricted arm of Lake Champlain; a question of water quality and causeways

*Tom Manley, Middlebury College; Zachery Perzan, Stanford University; Liv Herdman and Tina Chen, Middlebury College*

Global analysis of rotifer guild ratio in relation to Daphnia abundance across 51 lakes

*Kevin Melman, University of Vermont*

A Survey of Microplastics in Wastewater Treatment Plant Effluent in the Lake Champlain Basin

*Melissa Moriarty and Danielle Garneau, SUNY Plattsburgh*

Examining the PO4 gradient at the sediment water interface of Vermont stormwater ponds

*Harrison Myers, University of Vermont; Rebecca Tharp, Watershed Consulting Associates; and Eric Roy, University of Vermont*

Protecting Water Quality Through Low Impact Development Certification

*Chris Navitsky, The FUND for Lake George*

Resource use, behavior, and ecology of Mysis in Lake Champlain

*Brian O’Malley and Jason Stockwell, University of Vermont*

Understanding the biogeochemical role of soil microbial communities in Northern VT agricultural riparian zones connected to Lake Champlain waterways

*Kunal Palawat and Colleen Yancey, University of Vermont*

Algal biomonitoring within littoral zone of lakes as part of water quality monitoring efforts

*Corrina Parnapy, Winooski Natural Resources Conservation District*

EPSCoR soil monitoring network as classroom: preliminary data on the biogeochemistry of soils and streams

*Julia Perdrial, Erin Seybold, Brittany Lancellotti, B. Anderson, C. Beisel, A. Collings, A. Couderc, A. Liebenson, N. May, T. Quesnell, M. Reilly, and S. Ryan, University of Vermont*

Aesthetics, Environment and Economics: Permitting Parameters and Development Response in the Visual Environment of Lake Champlain Shorelands

*David Raphael, University of Vermont*

Observations and recommendations from implementing large-scale boat inspection and decontamination across the Adirondacks

*Jeffrey Sann, Adirondack Watershed Institute*

Microplastic Biomagnification in Invertebrates, Fish, and Cormorants in Lake Champlain

*James Stewart, Joshua Walrath, and Danielle Garneau, SUNY Plattsburgh*

Effect of photochemical transformation on dissolved organic carbon concentration and bioavailability from various land use/cover in the Lake Champlain Basin

*Andrew Vermilyea, Ashley Sanders, and Ernesto Vazquez, Castleton University*

Mapping Brook Trout occupancy using environmental-DNA

*Brendan Wiltse and Carrianne Pershyn, Ausable River Association; Lee Ann Sporn, Paul Smith’s College*