Lake Champlain: Our Future is Now
Lake Champlain Research Conference
January 8th-9th, 2018
Davis Center, University of Vermont
Burlington, VT

Preliminary Agenda
Updated December 20, 2017

Day 1: January 8th, 2018

8:30-4:30 PM: Registration

8:00-10 AM: Coffee, Breakfast, and Networking

9:30 AM: Welcome
Silver Maple Room

10:30 AM – 12 PM: Concurrent sessions

10:30 AM – 12 PM: Concurrent Session A: Fish, Wildlife, and Habitat
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
Moderator: Jean-Francois 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-Francois Bissonnette and Jerome 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
  Chloe L'Ecuyer-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 PM: Do windbreaks and managed riparian habitat maintain robust wildlife communities in fragmented ecosystems?
  Matthieu Beaumont and Jérome 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

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 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

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 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

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

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 and Nicholas Tromas, 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

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

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

2:15-2:45 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

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

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
- 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, 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

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

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

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*

Day 2: Tuesday, January 9th, 2018

8:30 AM-12:00 PM: Registration

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

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

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

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: Ardren: 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

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
  Meagan Leduc, 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

Moderator: James Pagano

- 11:00-11:15 AM: Toxic 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

Moderator: Kris Stepenuck

- 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

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

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: Reproductive success of landlocked Atlantic salmon in two Lake Champlain tributaries
  Ashlee Prevost, Nicole Hill, Dylan John Fraser, Concordia University; William Ardren, U.S. Fish and Wildlife Service; James W.A. Grant, Concordia University

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

Moderator: Timothy Mihuc

- 1:15-1:30 PM: A comparison of zooplankton diel vertical migration in Lake Champlain before and after the invasion of *Bythotrephes*
  Mark LaMay, Lake Champlain Research Institute

- 1:30-1:45 PM: Long-term zooplankton community patterns in Lake Champlain, USA: The role of invasive species in restructuring lake food webs
  Timothy Mihuc, SUNY Plattsburgh
- 1:45-2:00 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

- 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: 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 Extended Discussion

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

2:30-3:30 PM: Optional networking and ad hoc meeting time

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

LCRR Hydrology, Hydraulics and Mapping Technical Work Group
Jesse Feyen, National Oceanic and Atmospheric Administration

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

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

Winter Maintenance Best Practices: Identifying and Lowering Private Contractors' Barriers to Adoption
Holden Sparacino, University of Vermont

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