Chapman Conference on Winter Limnology in a Changing World

Conveners

Stephanie Hampton  
Washington State University

Berry Lyons  
The Ohio State University

Steve Powers  
Washington State University

Shawn Devlin  
University of Montana

Program Committee

Diane McKnight  
University of Colorado – Boulder

Anson Mackay  
University College London

Milla Rautio  
Université du Québec à Chicoutimi

Rita Adrian  
Leibniz Institute of Freshwater Ecology and Inland Fisheries

Steve Sadro  
University of California Davis

Mike McKay  
Bowling Green State University

Jasmine Saros  
University of Maine
Hilary Dugan  
University of Wisconsin Madison

Jan Karlsson  
Umea University

Kalevi Salonen  
University of Helsinki
Scientific Program

MONDAY, 14 OCTOBER

5:00 p.m.– 6:30 p.m.  Welcome Dinner and Mixer

TUESDAY, 15 OCTOBER

8:00 a.m.– 9:30 a.m.  Breakfast
9:30 a.m.– 9:50 a.m.  Welcome Remarks
9:50 a.m.– 10:30 a.m.  Keynote Talk - Sapna Sharma
10:30 a.m.– 11:30 a.m.  Poster Session I: Climate and Ice Dynamics

Conveners: Stephanie Hampton, Shawn Devlin, Diane McKnight, Stephen Powers

Josh Culpepper | Land to lake: connections between winter snowpack, ice out date and spring turnover

Steven Fradkin | Ice Cover Duration of Mountain Lakes in the Pacific Northwest

Scott N Higgins | The role of lake size and climate in regulating ice phenology at regional scales

Noah Lottig | Summer Thermal Stratification Under Ice

Amir Sadeghian | Year-round Modeling of Inorganic Solutes and Oxygen in a Drinking Water Reservoir

Jasmine E Saros | Later ice-off on Arctic lakes in Greenland despite rapid warming of summers: consequences of increased winter variability

Sapna Sharma | Consequential Impacts of Climate Change on Lake Ice Loss and Human Mortality
Adrianne Smits | Sensitivity of Mountain Lake Thermal Regimes to Changing Snow-packs Mediated by Lake and Catchment features

Gesa A. Weyhenmeyer | Accelerating rates in the loss of lake ice but with distinct geographical differences

Xiao Yang | Contemporary lake ice condition—its global distribution, climatology, and historical trend

Shuai Zhang | Remote sensing of ice phenology for small lakes in Maine, US

11:30 a.m.– 1:00 p.m. | Lunch

1:00 p.m.– 1:30 p.m. | Lightning Talks I: Climate and Ice Dynamics
Conveners: Stephanie Hampton, Shawn Devlin, Diane McKnight, Stephen Powers

Josh Culpepper | Land to lake: connections between winter snowpack, ice out date and spring turnover *(Invited)*

Scott N Higgins | The role of lake size and climate in regulating ice phenology at regional scales *(Invited)*

Adrianne Smits | Sensitivity of Mountain Lake Thermal Regimes to Changing Snow-packs Mediated by Lake and Catchment features *(Invited)*

Jasmine E Saros | Later ice-off on Arctic lakes in Greenland despite rapid warming of summers: consequences of increased winter variability *(Invited)*

Q&A

1:30 p.m.– 3:30 p.m. | Breakout Groups

4:00 p.m.– 4:30 p.m. | Report-Outs

4:30 p.m.– 5:30 p.m. | Continued Discussion

5:30 p.m.– 7:00 p.m. | Dinner
WEDNESDAY, 16 OCTOBER

8:00 a.m.– 9:30 a.m.  Breakfast

9:30 a.m.– 10:30 a.m.  Keynote Talk - Diane McKnight

10:30 a.m.– 11:30 a.m.  Poster Session II: Biogeochemistry

Conveners: Stephen Powers, Shawn Devlin, Stephanie Hampton, Diane McKnight

Nora J Casson | Impacts of winter weather whiplash events on streamflow and water quality

Emily Cavaliere | Nitrogen changes under ice-cover: critical changes prior to ice out

Kaelin Cawley | Preliminary Linkages between Thick Winter Ice Cover Conditions and Trophic Structure Changes in Small North Dakota Prairie Lakes

Yu-Ping (Yo) Chin | Benthic Redox Processes Under the Ice: Voltammetric Analysis of Porewater Redox Species in the Prairie Potholes and Arctic Lakes

James B Cotner | Oxygen Dynamics in Shallow Lakes

Hilary A Dugan | Ice and Light: A tale of two winters on Lake Mendota

Vaclava Hazukova | Cross-seasonal comparison of physical and ecological conditions following winter seasons with different climate patterns in lakes of West Greenland

KathiJo Jankowski | Wintertime on a Big River: Spatial and Temporal patterns in Winter Biogeochemistry along Lentic-Lotic and Longitudinal Gradients of the Upper Mississippi River

Joachim Jansen | Drivers of spring emissions of CH₄ and CO₂ from seasonally ice-covered lakes

Diane M McKnight | Biogeochemical Complexity of Dissolved Organic Matter in Lake Fryxell, a Permanently Ice-covered Lake in the McMurdo Dry Valleys, Antarctica
Stephen M Powers | Summer structure linked to interannual variability of snow and ice in remote mountain lakes of the Pacific Northwest USA

Audrey N Thellman | All in the Timing: Variable Snowpacks and Canopy Closure Alter the Window of Metabolic Opportunity in Streams

Bernard Yang | Springtime Water Column Concentrations of Dissolved Oxygen in a Deep Lake are Higher Following Longer Winters: A Comparison of Results from Three Winters

11:30 a.m.– 1:00 p.m. | Lunch

1:00 p.m.– 1:30 p.m. | Lightning Talks II: Biogeochemistry

Conveners: Stephen Powers, Shawn Devlin, Stephanie Hampton, Diane McKnight

Yu-Ping (Yo) Chin | Benthic Redox Processes Under the Ice: Voltammetric Analysis of Porewater Redox Species in the Prairie Potholes and Arctic Lakes (Invited)

Hilary A Dugan | Ice and Light: A tale of two winters on Lake Mendota (Invited)

KathiJo Jankowski | Wintertime on a Big River: Spatial and Temporal patterns in Winter Biogeochemistry along Lentic-Lotic and Longitudinal Gradients of the Upper Mississippi River (Invited)

Q&A

1:30 p.m.– 3:30 p.m. | Breakout Groups

4:00 p.m.– 4:30 p.m. | Report-Outs

4:30 p.m.– 5:30 p.m. | Continued Discussion

5:30 p.m.– 7:00 p.m. | Dinner
**THURSDAY, 17 OCTOBER**

8:00 a.m.– 9:30 a.m. **Breakfast**

9:30 a.m.– 10:30 a.m. **Lightning Talks III: Biology**
Conveners: Diane McKnight, Shawn Devlin, Stephanie Hampton, Stephen Powers

**David C Barrett** | Winter surface cover conditions in small, shallow, lake systems are a key driver of under-ice productivity due to light limitation *(Invited)*

**Brian Hayden** | Life in the northern winter: food web structure and trophic dynamics of subarctic lake communities under ice *(Invited)*

**Bailey C. McMeans** | Winter in Water: Differential Responses and the Maintenance of Biodiversity *(Invited)*

Q&A

10:30 a.m.– 11:30 a.m. **Poster Session III: Biology**
Conveners: Diane McKnight, Shawn Devlin, Stephanie Hampton, Stephen Powers

**David C Barrett** | Winter surface cover conditions in small, shallow, lake systems are a key driver of under-ice productivity due to light limitation

**Stella Angela Berger** | EXPERIMENTAL WINTER LIMNOLOGY IN LARGE-SCALE ENCLOSURES – LAKE ECOSYSTEM RESPONSES TO CONTROLLED ICE COVER DURATION

**Sudeep Chandra** | The Influence of Climate and Winter Dynamics on Lake Ecological Structure, from Species Feeding Behavior to Ecosystem Dynamics: Insights from Castle Lake and Small Mountain Ecosystems

**Joshua Darling** | *Mesodinium rubrum*: a distinctive mixotrophic phytoplankter in Lake Fryxell, a perennially ice-covered lake in the McMurdo Dry Valleys, Antarctica
Stephanie Dykema | Linking ice-out and phenology to zooplankton communities in remote Maine lakes

Isabelle B Fournier | Seasonally distinct below-ice microbial communities in four boreal lakes: Implications of climate warming

Brian Hayden | Life in the northern winter: food web structure and trophic dynamics of subarctic lake communities under ice

Allison R. Hrycik | Under-ice mesocosms to test interactions of light limitation and zooplankton grazing on phytoplankton communities

Sally MacIntyre | Hydrodynamics Under the Ice in Arctic Lakes: Implications for Biological Processes Under the Ice and After Ice-Off

Bailey C. McMeans | Winter in Water: Differential Responses and the Maintenance of Biodiversity

Ferdous Nawar | The relationship between ice-cover physical/optical properties and changes in DOC on under-ice autotrophic production and community composition

Milla Rautio | Succession of Zooplankton Metabolism Under Lake Ice from October to June, Indicated by Lipid And Stable Isotope Analyses

Garrett Rue | Functional and Structural Ecosystem Dynamics of a Mountain Lake Under Ice Cover: Changes in DOM Composition, Biogeochemical Cycling, and Understanding Phytoplankton Community Response.

Robert Schwefel | What controls winter temperatures in arctic lakes?

Robert A Sohn | The Yellowstone Lake Cabled Observatory Concept

Emily C Whitaker | Phytoplankton Dynamics and Primary Production Under Lake Ice

11:30 a.m.– 1:00 p.m. Lunch
1:30 p.m.– 3:30 p.m.  Breakout Groups
4:00 p.m.– 4:30 p.m.  Report-Outs and Synthesis from Organizers
4:30 p.m.– 5:30 p.m.  Continued Discussion
5:30 p.m.– 7:00 p.m.  Dinner

FRIDAY, 18 OCTOBER

8:00 a.m.– 9:00 a.m.  Breakfast
9:00 a.m.– 6:00 p.m.  Field Trip
6:00 p.m.– 7:00 p.m.  Dinner