



sfs2015

OUR FRESHWATER FUTURES

MILWAUKEE, WISCONSIN, USA



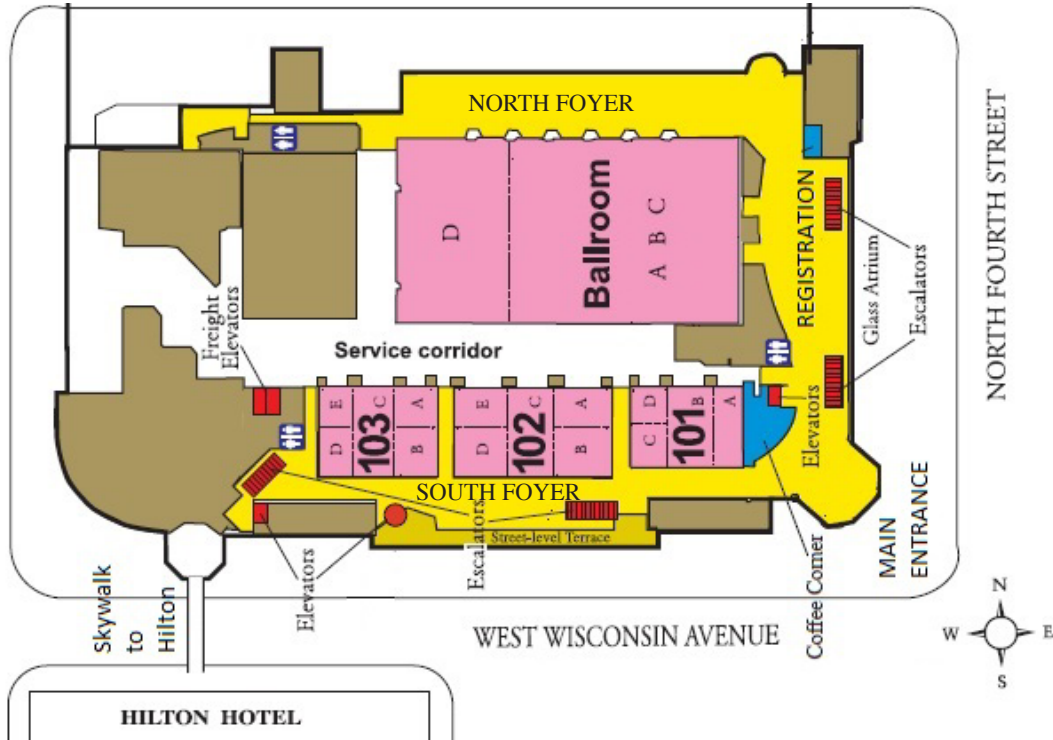
SOCIETY FOR FRESHWATER SCIENCE

Annual Meeting

MAY 17-21 2015

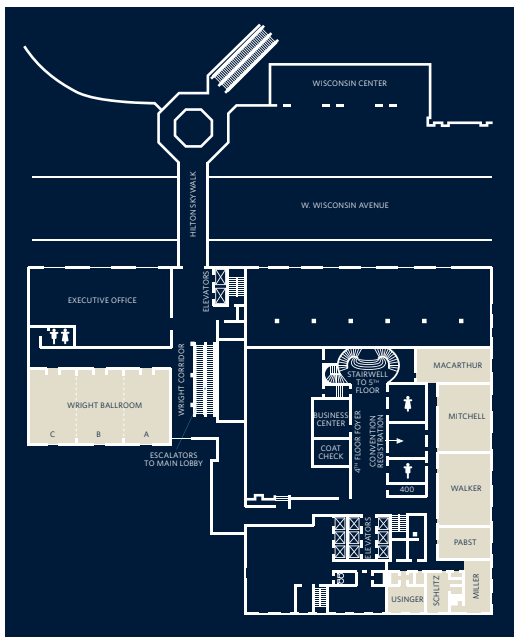
WISCONSIN CENTER MEETING ROOMS

Street Level



HILTON HOTEL MEETING ROOMS

4th Floor



5th Floor



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sfs2015

OUR FRESHWATER FUTURES

MILWAUKEE, WISCONSIN, USA

The 21st century will be a time of choices for the world’s freshwater ecosystems. Human population and economic growth is on a path to greatly increase demands on freshwater resources, which are already unsustainably high in many parts of the world. Will we make good choices that satisfy human needs while sustaining high levels of biodiversity and ecosystem function? Or will we continue to degrade freshwater ecosystems while failing to provide adequate water to the world’s poor? How will freshwater science contribute to the search for good solutions and their implementation?

As one of the world’s leading groups of freshwater scientists, the Society for Freshwater Science has chosen “Our Freshwater Futures” as the theme for its 2015 annual meeting in Milwaukee. Plenary sessions will feature leading freshwater scientists giving their insights into the problems that freshwater ecosystems and human societies are facing, and every special session will include a talk that envisions future directions for the field covered by the special session. We invite you to join us on the shores of Lake Michigan as SFS considers the future of the world’s fresh waters.



ABOUT THE 2015 MEETING LOGO

The 2015 SFS meeting logo features a Hine’s Emerald dragonfly (*Somatochlora hineana*), a federally-endangered species whose largest breeding population is in Door County, Wisconsin. The “venation” patterns on three of the dragonfly’s wings represent the three major freshwater habitats: riverine (a stream network), lacustrine (a bathymetric map), and palustrine (the USGS map symbol for wetlands). The final dragonfly wing contains the Milwaukee skyline, portraying both the location of the 2015 meeting and the potential future of increasing urbanized influences on freshwater systems. The meeting logo was designed by SFS member and Wisconsin resident Gina Laliberti.

MEETING ORGANIZERS

2015 Meeting Co-Chairs

Steve Francoeur
Eastern Michigan University

Emily Stanley
University of Wisconsin Madison

Bob Stelzer
University of Wisconsin Oshkosh

Additional Members

Dave Feldman
Montana Department of Environmental Quality

Roger Haro
University of Wisconsin La Crosse

Jerry Kaster
University of Wisconsin Milwaukee

Peter Levi
University of Wisconsin Madison

Eugènia Martí
Universitat de Barcelona

Ashley Moerke
Lake Superior State University

AJ Reisinger
University of Notre Dame

Todd Royer
Indiana University

Andrew Rypel
Wisconsin Department of Natural Resources

Sean Sullivan
Rhithron Associates, Inc.

President

Dave Strayer
Cary Institute of Ecosystem Studies

Student Resource Committee (SRC) Officers

Chair
Petra Kranzfelder

Board of Directors Representative
Dustin Kincaid

Treasurer
Sarah Whorley

Silent Book Auction
Hilary Madinger (chair), Andrea Fitzgibbon, Anna Boegehold, Katherine Bailey

SRC Workshop
Cameron Turner (chair), Halvor Halvorson, Ariel Shogren

Student-Mentor Mixer
Molly Welsh (chair), Matthew Cashman, Kaleb Heinrich

Merchandise
Sarah Whorley (chair), Sarah (Winnie) Winikoff, Martha Dee, Cecilia Storly

Live Auction
Joanna Blaszcak, Jim Junker, Erin Looper

Undergraduate Travel Awards
Kaitlin Farrell (chair), Jane Mazack, Brittany Hanrahan

Public Information & Policy Representatives/Social Media Managers
Alex Yeung (chair), Jenny Paul

Local Arrangements
Keith Krukowski

SRC Advisor
Dr. Jennifer Tank

Website and Social Media

We encourage you to use the meeting website and the detailed online schedule for all current information and to navigate the meeting.

Meeting Website
sfsannualmeeting.org

Society Website
freshwater-science.org

Facebook
www.facebook.com/FreshwaterScience

Twitter
<https://twitter.com/benthosnews>

Conference Planner/Meeting Management

USU Conference Services
Joy Brisighella, CMP
435-797-9270
Joy.brisighella@usu.edu

Recording Policy

Please! No recording of individual talks or sessions (oral or poster). Audio taping, videotaping, or photographing of presentations is not allowed at the meeting.

Thank you for your cooperation.

MEETING SCHEDULE

All events are at the Wisconsin Center unless otherwise indicated.

*Asterisk designates events at the Hilton. The Hilton is the headquarters for Students/SRC Meetings and Events.

SATURDAY MAY 16		
3:00 PM - 6:00 PM	SRC Finance Committee Meeting*	Hilton: Miller Room
SUNDAY MAY 17		
PRE-MEETING WORKSHOPS AND COMMITTEE MEETINGS:		
9:00 AM - 3:00 PM	SRC (Student Resources Committee) Workshop/Excursion	offsite
7:00 AM - 9:00 AM	FWS Editorial Board Committee*	Hilton: McArthur Room
9:00 AM - 5:00 PM	SFS Board of Directors Meeting	103DE
9:00 AM - 5:00 PM	Pre-Meeting Workshops	(see detailed agenda)
1:00 PM - 4:00 PM	INSTARS Orientation	103C
11:00 AM - 6:00 PM	Stream Resiliency RCN Food Web Modeling Working Group	102C
ANNUAL MEETING OPENING:		
4:00 PM - 10:00 PM	REGISTRATION OPEN	
6:00 PM - 10:00 PM	Exhibits open	
7:00 PM - 9:00 PM	SFS Meeting Opening-Awards	Ballroom ABC
9:00 PM - 10:00 PM	Welcome Mixer/Reception	Lobby AB/Exhibit Area
10:00 PM - 11:59 PM	Jam Session at the Hilton*	Monarch Lounge
MONDAY MAY 18		
8:00 AM - 10:00 PM	REGISTRATION OPEN	
8:00 AM - 9:00 AM	Endowment Committee*	Hilton: Founders Room
8:30 AM - 10:00 PM	Exhibits, Silent Auction, SRC merchandise open	Lobby AB/Exhibit Area
8:30 AM - 4:00 PM	SFS Taxonomic Certification Program-Testing	102A
8:45 AM - 9:15 AM	Welcome/Announcements	Ballroom ABC
9:15 AM - 10:00 AM	Plenary Session 1	Ballroom ABC
10:30 AM - 12:00 PM	Concurrent Sessions 1	(see detailed agenda)
12:00 PM-1:30 PM	Lunch on your own	
12:00 PM-1:30 PM	SFS Committees - Lunch Meeting*	Hilton: Wright Ballroom ABC
12:00 PM-1:30 PM	SRC (Student Resources Committee) Lunch Meeting*	Hilton: Crystal Ballroom
1:30 PM-3:00 PM	Concurrent Sessions 2	(see detailed agenda)
3:30 PM-5:00 PM	Concurrent Sessions 3	(see detailed agenda)
4:00 PM-5:00 PM	Taxonomic Certification Committee Meeting	102A
6:30 PM-8:30 PM	SFS-SRC Student/Mentor Mixer*	Hilton: Crystal Ballroom
7:30 PM-10:00 PM	Conference Mixer and SFS-SRC Live Auction (Cashier at Registration Desk)	Ballroom ABC
10:00 PM-11:59 PM	Jam Session at the Hilton*	Monarch Lounge
TUESDAY MAY 19		
8:00 AM-5:00 PM	REGISTRATION OPEN	
7:00 AM-9:00 AM	SFS Publications Committee*	Hilton: Mitchell Room
8:00 AM-5:00 PM	Exhibits, Silent Auction, SRC merchandise open	Lobby AB/Exhibit Area
9:00 AM-9:15 AM	Daily Welcome/Announcements	Ballroom ABC
9:15 AM-10:00 AM	Plenary Session 2	Ballroom ABC

10:30 AM-12:00 PM	Concurrent Sessions 4	<i>(see detailed agenda)</i>
12:00 PM-1:30 PM	Lunch on your own	
12:30 PM-1:30 PM	STREON Workshop*	<i>Hilton: Walker Room</i>
12:30 PM-1:30 PM	2016 Hydrology Workshop Planning Group*	<i>Hilton: Mitchell Room</i>
1:30 PM-3:00 PM	Concurrent Sessions 5	<i>(see detailed agenda)</i>
3:30 PM-5:00 PM	Concurrent Sessions 6	<i>(see detailed agenda)</i>
5:00 PM-7:00 PM	Conference Mixer (honoring SFS retirees)	<i>Ballroom ABC/Exhibits</i>
5:30 PM-7:00 PM	SFS Endowment Reception*	<i>Hilton: Regency Ballroom</i>
7:00 PM-10:00 PM	Open House/Tour at the School of Freshwater Science	<i>Busses depart from the Wisconsin Center at 6:30pm</i>
7:00 PM-10:00 PM	Dinner on your own	
10:00 PM-11:59 PM	Jam Session at the Hilton*	<i>Monarch Lounge</i>
WEDNESDAY MAY 20		
8:00 AM-4:00 PM	REGISTRATION OPEN	
8:00 AM-1:00 PM	Taxonomy Fair Set-Up	<i>South Foyer and 102A</i>
8:00 AM-4:00 PM	Exhibits, Silent Auction, SRC merchandise open	<i>Lobby AB/Exhibit Area</i>
9:00 AM-9:15 AM	Daily Welcome/Announcements	<i>Ballroom ABC</i>
9:15 AM-10:00 AM	Plenary Session 3	<i>Ballroom ABC</i>
10:30 AM-12:00 PM	Concurrent Sessions 7	<i>(see detailed agenda)</i>
12:00 PM-1:30 PM	SFS Membership Lunch & Business Meeting – all welcome!	<i>Ballroom ABC</i>
1:30 PM-4:00 PM	Poster Session	<i>North and South Foyers</i>
1:30 PM-4:00 PM	Taxonomy Fair	<i>South Foyer and 102A</i>
4:00 PM-5:00 PM	Chapter Information Session	<i>101B</i>
4:00 PM-7:00 PM	Activity - Fun Run	<i>Busses depart from Wisconsin Center</i>
7:30 PM-11:00 PM	Offsite Social Event – Discovery World Museum at Pier Wisconsin	<i>Busses depart from Wisconsin Center</i>
THURSDAY MAY 21		
8:00 AM-5:00 PM	REGISTRATION OPEN	
7:30 AM-9:00 AM	New Board of Directors Breakfast*	<i>Hilton: Founders Room</i>
8:00 AM-3:30 PM	Exhibits open	<i>Lobby AB/Exhibit Area</i>
8:00 AM-5:00 PM	Silent Auction pickup (Cashier at Registration Desk)	<i>Lobby AB/Exhibit Area</i>
9:00 AM-9:15 AM	Daily Welcome/Announcements	<i>Ballroom ABC</i>
9:15 AM-10:00 AM	Plenary Session 4	<i>Ballroom ABC</i>
10:30 AM-12:00 PM	Concurrent Sessions 8	<i>(see detailed agenda)</i>
12:00 PM-1:30 PM	Lunch on your own	
1:30 PM-3:00 PM	Concurrent Sessions 9	<i>(see detailed agenda)</i>
3:30 PM-5:00 PM	Concurrent Sessions 10	<i>(see detailed agenda)</i>
3:30 PM-6:00 PM	Exhibit Tear Down, Poster Tear Down	
5:00 PM-7:30 PM	Dinner on your own	
FRIDAY MAY 22		
8:00 AM-7:00 PM	Post Event Field trips*	<i>(depart from the Hilton)</i>
9:00 AM-7:00 PM	Synthesis for SCALER: Scale Consumers and Lotic Ecosystem*	<i>Hilton: Oak Room</i>

ABOUT THE SOCIETY FOR FRESHWATER SCIENCE

SFS is an international scientific organization founded in 1953, whose purpose is to promote further understanding of freshwater ecosystems (rivers, streams, lakes, reservoirs, and estuaries) and ecosystems at the interface between aquatic and terrestrial habitats (wetlands, bogs, fens, riparian forests and grasslands). The society fosters exchange of scientific information among the membership, and with other professional societies, resource managers, policy makers, educators, and the public, sponsoring the journal *Freshwater Science*. Members come from 26 nations worldwide. Society members study the genetics to community structure of freshwater organisms, freshwater ecosystem function, physical processes that affect freshwaters, and linkages between freshwater ecosystems and surrounding landscapes. Applied aspects of their science include habitat and water quality assessment, conservation, fisheries and invasive species management, integrated water resource management, and restoration. Further information can be found at <http://www.freshwater-science.org/>.

SOCIETY OFFICERS AND INFORMATION

Executive Committee

- Dave Strayer** — President
- Michelle Baker** — Assistant to the President
- Randy Fuller** — Past-President
- Matt Whiles** — President-Elect
- Mike Swift** — Treasurer
- Sue Norton** — Secretary

Board of Directors

- Michelle Baker** — Assistant to the President
- David Costello** — Early Career Delegate
- Randy Fuller** — Past President
- Kim Haag** — Finance Committee
- Chuck Hawkins** — Publications Committee
- Dustin Kinkaid** — Student Delegate
- Sue Norton** — Secretary
- Mike Paul** — Non-Academic Delegate
- Chris Robinson** — Non-North American Delegate
- Emma Rosi-Marshall** — Assistant to the President-Elect
- Brian Shelley** — Assistant to the Past-President
- Al Steinman** — Academic Delegate
- Dave Strayer** — President and Chair
- Mike Swift** — Treasurer
- Matt Whiles** — President-Elect

REGISTRATION AND CHECK-IN INFORMATION

Registration and check in for the meeting will be available all week in the Main Lobby AB of the Wisconsin Center. Please check in upon your arrival at the meeting in order to receive your name badge and other important materials and information.

REGISTRATION HOURS

- Sunday, 17 May 2015** – 4:00 to 10:00pm
- Monday 18 May 2015** – 8:00am to 10:00pm
- Tuesday 19 May 2015** – 8:00am to 5:00pm
- Wednesday 20 May 2015** – 8:00am to 4:00pm
- Thursday 21 May 2015** – 8:00am to 5:00pm

MEETING ADDENDUM

Keep up to date with changes by downloading the meeting addendum from the meetings website.

RECEIPTS AND LETTERS OF PARTICIPATION

Your registration confirmation that was emailed to you when you registered for the meeting will serve as your receipt. In keeping with our conservation efforts, we will not provide printed receipts to attendees on site at the meeting. If you have misplaced your original receipt and need another copy emailed to you, visit the Registration Desk for assistance.

MESSAGES

Message boards will be located near registration. Feel free to post messages, CV's, and job opportunities, as well as to check these boards if you are expecting a message during the meeting.

CHILD CARE - MILWAUKEE CHILD CARE OPTIONS

Sittercity www.sittercity.com

To search for a sitter in Milwaukee, enter the zip code 53203

KEYNOTE/PLENARY SESSIONS

Monday 18 May 2015



PETER ANNIN

University of Notre Dame

Water Tension and the Great Lakes Compact

This presentation delves into the long history of political maneuvers and water diversion schemes that have proposed sending Great Lakes water everywhere from Akron to

Arizona. Through the prism of the past, this talk analyzes the future of Great Lakes water diversion management, which is now controlled by the Great Lakes Compact, a legal document released by the Council of Great Lakes Governors in December 2005. The Compact, which prohibits most Great Lakes water diversions, with limited exceptions, was adopted by the eight state legislatures in the Great Lakes region as well as the U.S. Congress before eventually being signed by the president in 2008. A similar agreement relating to Canadian water diversions was adopted by the province of Ontario in 2007 and Quebec in 2009. This presentation analyzes several noteworthy Great Lakes diversions that already exist, and sheds light on potential water diversions of the future, including the water diversion application submitted by Waukesha, Wisconsin in 2010. A decision on the Waukesha water diversion application is expected in late 2015 or early 2016.

A veteran conflict and environmental journalist, Peter Annin spent more than a decade reporting on a wide variety of issues for Newsweek. For many years he specialized in coverage of domestic terrorism and the radical right, including the bombing of the federal building in Oklahoma City and the Branch Davidian standoff outside Waco, Texas. He has spent many years writing about the environment as well, including droughts in the Southwest, hurricanes in the Southeast, wind power on the Great Plains, forest fires in the mountain West, recovery efforts on the Great Lakes, and the causes and consequences of the “dead zone” in the Gulf of Mexico.

In November of 2010, Annin was named managing director of the University of Notre Dame’s Environmental Change Initiative, a key branch of the University’s Strategic Research Investment program that tackles the interrelated problems of invasive species, land use and climate change, focusing on their synergistic impacts on water resources. As managing director of ND-ECI, Annin functions as its chief operating officer and assists Professor David Lodge, ND-ECI’s director, in developing and implementing the Initiative’s intellectual and programmatic vision.

Before joining Notre Dame, Annin worked for a decade as Associate Director of the Institutes for Journalism and Natural Resources, a nonpartisan national nonprofit that organizes educational fellowships for mid-career environmental journalists. In September 2006 he published his first book, *The Great Lakes Water Wars*, which has been called the definitive work on the

Great Lakes water diversion controversy. In 2007 the book received the Great Lakes Book Award for nonfiction. In August, he will become co-director of the Mary Griggs Burke Center for Freshwater Innovation at Northland College in Ashland, WI.

Since 2004 Annin has served as the volunteer executive director of Gull Rock Lightkeepers, a nonprofit dedicated to restoring Gull Rock Lighthouse, a storied Lake Superior light 2.5 miles off Michigan’s Keweenaw Peninsula. He has a bachelor’s degree in journalism from the University of Wisconsin-Madison, and a master’s in international affairs from Columbia University in New York.

The Nature Conservancy’s Great Lakes Project is proud to support the development of science to help conserve the Great Lakes for both people and nature.

Working in all 50 states and more than 30 countries, the mission of The Nature Conservancy is to protect the lands and waters upon which all life depends.

Visit us online at
www.nature.org/greatlakes

The Nature Conservancy
Protecting nature. Preserving life.

Zetterberg Preserve at Point Betsie, Michigan © Jason Whalen

Tuesday 19 May 2015



IRENA F. CREED
Western University

Why Are the Great Lakes Failing to Thrive?

For over a century, governments on both sides of the Canada-U.S. border have employed various policy instruments and management tools to protect the Great Lakes. Yet this critical freshwater resource continues to show signs of impaired ecosystem health. The Great Lakes Futures Project (GLFP) is a grassroots project that engaged over 100 stakeholders from Canada and the U.S. to suggest areas of governance reform to achieve a sustainable basin using future scenario analysis. Participants created stories considering the following questions: What forces are driving changes? What are the key uncertainties associated with these drivers? How could these forces change the future from its current path? And if the future unfolds as described in the scenarios, then what would we do about it? A consensus emerged that a breakdown is occurring in the policy regime governing the Great Lakes basin which is leading us towards an undesirable “out of control” future. Members of the GLFP recognize the need for scientists and managers to work within existing governance structures to improve the effectiveness and efficiency of management measures. They propose adaptation of an International Organization of Standardization (ISO) risk management standard developed by industry to reduce risk of engineering failures to show how governments can reduce the risk of ecosystem failures. Specifically, they propose a “bowtie analysis” of human activities that drive ecosystem pressures-effects-impacts to link causal pathways to both hard controls (structures based on design criteria set by science and engineering) and soft controls (strategies based on enabling, facilitating, and tracking activities). This will allow governments to shed light on why, despite best intentions, management systems are not working, and enable governments to continually improve the management system until the risk of policy failures are reduced to acceptable levels, bringing new hope to the future of the Great Lakes.

Irena Frances Creed is a Professor and Canada Research Chair in Watershed Sciences at Western University in Canada. Her research leadership and activity have improved our understanding of watershed hydrological and biogeochemical functions under present and predicted climate scenarios. By coupling this understanding with innovative techniques in geographic information systems, remote sensing and modeling to characterize these functions, she has enabled governments to develop planning and regulatory tools in support of innovative policies designed to ensure the sustainability of watershed systems.

Creed is an interdisciplinary scientist, with an appointment in Biology and cross-appointments in Geography and Earth Sciences at Western. On campus, she has leadership roles as former Acting Director of Centre for Environment & Sustainability, member of

the Sustainability & Environment Theme Executive for Faculty of Science, Director of the Africa Institute, and member of the President’s Advisory Committee on Sustainability. Nationally and internationally, she was Research Area Leader (Water and Wetlands) for the Scientific Management Team of the Network of Centres of Excellence for Sustainable Forest Management (SFMN), which led to her participation on a US National Academies Scientific Panel Member on Hydrologic Impact of Forest Management. She is a theme leader (Health Forests, Healthy Waters) of the NSERC Canadian Strategic Network on Aquatic Ecosystem Services. She is also the principal investigator on the international NSERC Collaborative Research and Training Program Algal Bloom Assessment Through Science, Technology and Education (ABATE) Project. She was the Vice-Chair (2009) and Chair (2011) of the prestigious Gordon Research Conference on Catchment Sciences, establishing the theme of Catchments as Sentinels of Global Change and selecting an exceptional program led by world leaders in watershed research.

Creed has published over 100 scientific papers, books, monographs, and technical reports. She has provided over 200 presentations to scientific meetings, stakeholder groups and as a participant in “think tank” international workshops intended to define research needs and agendas. She was selected as the 2013 Distinguished Research Professor in the Faculty of Science at Western University, which allowed her to implement collaborative grants, pursue high-risk research, lead unique, time sensitive research avenues with strong potential for significant breakthroughs, and capitalize on new and significant national and international partnerships with academics, government and industry.

Creed is strongly committed to “scientific tithing” and spends a significant amount of her time in service to communities-at-risk in both developed and developing countries. She was a research leader to the Lake Naivasha Sustainability Project (Kenya) and was a recipient of Western’s inaugural Humanitarian Award for her work. Her broad knowledge base allows her to bridge her science with social science, engineering, law, and medicine to develop strategies to ensure sustainability of socio-ecological systems. Creed also leads a major project on the sustainability of the Laurentian Great Lakes and has transformed this work through the Transborder Research University Network (TRUN) on Water Stewardship - a project that received Western University’s Green Award in 2013 for work combining future scenario analysis with risk management analysis to identify scientific and policy gaps and mechanisms to bridge science to policy. You can learn more about her projects, activities, and publications at <http://www.uwo.ca/biology/faculty/creed/>.

Wednesday 20 May 2015



JANE HUGHES
Griffith University

Conservation of Aquatic Biodiversity in a World with Less Water: A Molecular Ecologist's Perspective

As the world's population continues to grow, human water needs are growing accordingly, thus reducing the water

available for sustaining our freshwater biodiversity. This is likely to be further exacerbated in areas where rainfall will decrease as a result of global climate change. Molecular ecologists have contributed substantially in recent years to our understanding of first, the levels and patterns of current biodiversity and second to understanding patterns of connectivity among populations of aquatic species and their significance for their conservation and management. Both are critical for prioritization of areas for protection and for designing rehabilitation programs. In this talk, I will attempt to synthesize our understandings to date. I will argue that a multi-disciplinary approach that incorporates new

technological approaches in acquisition of molecular data is the best way forward for our aquatic biodiversity. Molecular ecologists can contribute by collaborating with other ecologists, especially in the fields of species distribution modeling and conservation planning. This approach will help to prioritize conservation actions for the best possible outcomes.

Jane Hughes is a Professor in the Griffith School of Environment at Griffith University in Brisbane Australia. She is also a Senior Fellow in the Australian Rivers Institute. Jane's undergraduate and Honours degrees are from the University of Western Australia and her PhD is from La Trobe University in Melbourne. She has been at Griffith University as an academic since 1978, when she began as a Junior Teaching Fellow. Her research is mainly focused on the use of molecular techniques to address questions in ecology and evolution and recently, much of her work has focused on connectivity among populations of aquatic animals in rivers and streams. She and her students have also published a lot of papers on the processes maintaining and producing biodiversity. When not working on freshwater fish and invertebrates, Jane works on the evolution of diversity in Australian birds. Jane is an editor for *Freshwater Science*, *Marine and Freshwater Research*, *PeerJ* and *Heredity*.

Thursday 21 May 2015



STEVE CARPENTER
University of Wisconsin

Envisioning Freshwater Futures

Freshwaters have never been more important to human well-being. Global policy analyses center on the energy-food-water nexus as the key to sustainability. Yet climate change, hydrologic flow modification, land-use change, chemical inputs, invasive

species and harvest are causing massive transformations of freshwater ecosystems and losses of the benefits that they could provide to society. Underlying causes are complex. There is great uncertainty about the efficacy of policies and interventions to protect or restore freshwater ecosystems. Scenarios that employ stories, art and models are one way to assess uncertainty and evaluate options for management of complex systems. The talk will sketch an overview of scenario processes for freshwater ecosystems and present an example from a Wisconsin watershed.

Stephen Russell (Steve) Carpenter is a leader of whole-ecosystem experiments and adaptive ecosystem management focused on freshwaters. Topics include trophic cascades and their effects on production and nutrient cycling, contaminant cycles, freshwater fisheries, eutrophication, nonpoint pollution, ecological economics of freshwater, and resilience of ecosystems and social-ecological systems.

Carpenter serves as the Director of the Center for Limnology at the University of Wisconsin-Madison, where he is the Stephen

Alfred Forbes Professor of Zoology. He is a member of the U.S. National Academy of Sciences, a Fellow of the American Academy of Arts and Sciences, and a foreign member of the Royal Swedish Academy of Sciences. Carpenter is the 2011 laureate of the Stockholm Water Prize. Other notable awards include a Pew Fellowship in Conservation and Environment, the G. Evelyn Hutchinson Medal of the American Society of Limnology and Oceanography, the Robert H. MacArthur Award from the Ecological Society of America, the Excellence in Ecology Prize from the Ecology Institute, and the Naumann-Thienemann medal of the International Society for Limnology.

Carpenter is Chair of the Science Committee for the Program on Ecosystem Change and Society of the International Council of Science. He is co-Editor in Chief of *Ecosystems*, and a member of governing boards for the Beijer Institute of Ecological Economics and the South American Institute for Resilience and Sustainability Studies. Carpenter is a fellow of the Ecological Society of America, and founding member and Fellow of the Resilience Alliance. From 2000-2005 he served as co-chair of the Scenarios Working Group of the Millennium Ecosystem Assessment. He led the North Temperate Lakes Long-Term Ecological Research program at U.W.-Madison from 1999-2009. He is a former President of the Ecological Society of America. Carpenter has published 5 books and more than 300 scientific papers, book chapters, reviewed reports and commentaries. He received a B.A. from Amherst College (1974), M.S. from University of Wisconsin-Madison (1976), and Ph.D. from U.W. Madison (1979). From 1979-1989 he served as Assistant and then Associate Professor at the University of Notre Dame. He joined the U.W.-Madison faculty in 1989. A full biographical sketch, publication list and contact information are posted on <http://limnology.wisc.edu/personnel/carpenter/>.

2015 AWARD RECIPIENTS

SFS 2015 Award of Excellence



PROFESSOR MARGARET A. PALMER

Professor Margaret Palmer, of the University of Maryland, College Park, has been chosen to receive the Award of Excellence from the Society for Freshwater Science for 2015. Margaret has a distinguished record of research and a remarkable range of achievements in translating science into the public domain. The

progression of Margaret's career from her early, seminal work on habitat heterogeneity at fine scales to her current work on the consequences of global climate change for freshwaters represents an extraordinary journey of excellence as a scientist. She began her career as a marine biologist, earning a Ph.D. in coastal oceanography from the University of South Carolina where she studied benthic invertebrates in estuaries. Transplanted to the Midwest in her first faculty position at Wabash College, Palmer shifted her focus to the stream benthos, pursuing questions about the roles of disturbance and organism transport in determining the composition of freshwater communities. As her career progressed, she continued to ask questions about aquatic community structure but with an increasing focus on the drivers and consequences of environmental heterogeneity at ever larger scales. Margaret continues to direct an active research program gathering field data on stream ecosystem processes, but as her career has matured, much of her work – with astonishing productivity and impact – has focused on synthesis science intended to have direct application to safeguarding and restoring the health of stream ecosystems.

Recognizing that environmental science cannot catalyze change in a vacuum Margaret has helped conceive and design new ways of merging social and environmental sciences in a common quest for an improved environment. Her long-term efforts in this regard, first conceived as a Leopold Leadership Fellow and honed while drafting a joint action plan for the Ecological Society of America, have now culminated in the NSF-funded Socio-Environmental Synthesis Center which Margaret directs. Along the way she has engaged even more actively as an advocate for environmental science, most notably in her role as an expert on the environmental impacts of mountaintop removal coal mining in federal district court trials and in congressional testimony. Margaret's combination of scientific expertise and her unflappable quick wit have made her an effective spokesperson at the science-policy interface. Although Margaret increasingly finds herself in the public eye, she has no interest in self-promotion; Margaret simply wants to push the most capable people into situations where their skills make a difference in protecting, managing or repairing ecosystems. Margaret has a great talent for identifying and promoting the skills of everyone she works with. She not only shares, but also pushes her protégés into the limelight whenever possible.

In recognition of Margaret's contributions to our scientific understanding of how rivers work and her tireless devotion to translating the knowledge of our field to the public in every conceivable way we are pleased to announce Margaret A. Palmer as the recipient of the 2015 Award of Excellence from the Society for Freshwater Science.

SFS 2015 Environmental Stewardship Award



STEPHEN K. HAMILTON

The SFS Award Committee is pleased to award the 2015 Environmental Stewardship Award to Dr. Stephen K. Hamilton of Michigan State University's Kellogg Biological Station. Steve's accomplishments as an academic researcher and environmental steward of local (e.g., Kalamazoo River), regional (e.g., Great Lakes), and global (e.g., tropical rivers and wetlands

in South America and Australia) watersheds make Steve deserving of this recognition. The Awards committee grants this award to Steve, to not only honor his accomplishments, but to highlight an outstanding scientist and steward of freshwater resources. His work inspires both young and accomplished researchers in the field of environmental remediation to embrace and integrate environmental stewardship in their careers.

SFS 2015 Distinguished Service Award



DR. JOHN C. MORSE

An active member of SFS since the early 1970s (first as MBS, then NABS), John Morse has contributed to the mission and scope of the Society in countless ways throughout his professional career. John's research interests focus on the systematics and biogeography of the Trichoptera of the world, the biology and ecology

of all aquatic arthropods, species diversity, endangered species, and water quality monitoring. Although John retired in 2008, he remains involved in an active research program, serving as Professor Emeritus of Entomology at Clemson University, as Director Emeritus of the Clemson University Arthropod Collection, and teaching short courses in taxonomy and systematics. Recently, John and his wife Suzanne established The John C. & Suzanne E. Morse Endowed Chair in Arthropod Biodiversity at Clemson.

John has been an active participant in nearly every annual society meeting since graduate school, regularly presenting research findings, organizing special sessions including the annual taxonomy fairs, serving as judge for student presentations, assisting society officers, and participating in executive committee sessions. In addition to service on several standing and ad-hoc committees, John was a founding member of the SFS Taxonomic Certification Program (2003); his guidance and direction of this new program resulted in the initial offering of certification tests at the society's annual meeting in Anchorage, AK (2006). He currently serves (with Bern Sweeney) as co-chair of the SFS Taxonomic Certification Committee. Recently, John led the

TCC in restructuring the testing procedures and protocols, and creating a written petition option for those recertifying after their initial 5-year certification. In 2014, John and his imaging team at Clemson developed the genus-level TCP certification test for EPT taxa based on high quality digital images rather than actual specimens. Soon, his imaging team will initiate compilation of digital images for the freshwater mollusk test. As one nominator for this award stated (supported in comments from all who wrote letters of nomination): "...John is the ultimate team player with it comes to SFS business."

John has long served the global scientific communities, teaching students and working closely with colleagues in Mongolia, People's Republic of China, Thailand, Taiwan, South Korea, Far East Russia, Indonesia, India, Singapore, Iraq, Poland, and other countries to increase the taxonomic skills of biologists and assist scientists in the development of water quality assessment protocols for streams and rivers.

The SFS DSA is awarded to a Society member who has made a genuine and lasting contribution to the betterment of the Society. Those of us who have been fortunate to have learned from and collaborated with John – under the umbrella of Society business and also during a variety of collaborations in all things aquatic biology – can certainly agree that John communicates his expertise and love for science very effectively while remaining humble and always respectful of others. His true legacy – beyond his past and present dedication to SFS and to arthropod taxonomy and the study of aquatic biology – is emulated by and will continue to grow through the young scientists he has mentored, and with the support of their programs that have expanded and improved because of his unselfish gifts through education, kindness, and understanding.

SFS 2015 Hynes Award



DR. CARLA L. ATKINSON

Dr. Carla Atkinson is a community and ecosystem ecologist who is interested in how species traits maintain essential ecosystem functions and how land use and climate change may interact to impact a species' role and its survival within the ecosystem. Her research has focused on the importance of species traits on ecosystem processes,

effects of species loss on ecosystem function (i.e. nutrient cycling and storage), and the consequences of land use change on aquatic ecosystems. Dr. Atkinson worked with Dr. Alan Covich at

the University of Georgia for her masters studying trophic niche overlap of native and invasive bivalves. In 2013 she obtained her PhD from the University of Oklahoma under the advisement of Dr. Caryn Vaughn where her dissertation research focused on the impact of freshwater mussels, one of the world's most imperiled faunal groups, on nutrient cycling in streams. As a postdoc under Dr. Alexander Flecker at Cornell University from 2013-2014, she examined the functional traits of tropical and temperate stream insects including body stoichiometry, trophic ecology, and excretion rates under physiological stress due to simulated climate change. She is now an Assistant Professor in the Department of Biological Sciences at the University of Alabama.

FUTURE MEETINGS

The 2016 Society for Freshwater Science meeting will be held May 21-26 at the Sacramento Convention Center in Sacramento, California. Please visit the SFS booth for further details concerning the meeting or visit the SFS website.



SFS2016

**Society for Freshwater Science Annual Meeting
Sacramento, California**

Running on Empty: increasing Demands on Freshwater Resources in the Face of a Changing Climate

In many regions of the developed and developing world, large human populations live in arid environments that out of necessity depend on scarce or imported water. This is certainly true in California and the Western US where a complex infrastructure of dams, canals, and groundwater extraction provide freshwater for some of the world's most productive farms and some of the world's most opulent living conditions. Compounding this insatiable demand for freshwater is the effects that variable environmental conditions of a warming climate, changing precipitation, and increasing frequency and severity of droughts have on over-taxed water supplies.

While water resource managers contemplate these issues, the farms and cities keep consuming, despite dwindling supplies. The 2016 meeting of the Society for Freshwater Science will be held in Sacramento California at a time when the State is experiencing the worst drought in its modern history. Although droughts are not uncommon in the Western US and other semi-arid regions of the world, expanding human populations have accelerated the loss of freshwater resources and the impacts to aquatic organisms. The theme of the 2016 meeting of the Society for Freshwater Science will focus on declining freshwater availability and explore issues of freshwater depletion, the consequences for freshwater ecosystems, and potential solutions.

MEETING SITE INFORMATION

The Wisconsin Center

Welcome to the Wisconsin Center, one of the world's most architecturally exhilarating and technologically robust convention facilities, located in the heart of downtown Milwaukee, Wisconsin. Opened in 1998 and completed by the end of 1999, the Wisconsin Center has 188,695 square feet of contiguous, state-of-the-art exhibit space and a 37,506 square-foot ballroom with capacity for 3,150 diners and ample utilities for corporate theater. An additional 39,364 square feet of meeting space can be partitioned into as many as 28 meeting and breakout rooms equipped for satellite links, video teleconferencing, data transmission and other telecommunications and audio-visual technology.

Other innovations and tried-and-true technologies have been applied to heating, ventilation, air conditioning, lighting, security and electronic signage systems. Our goal has been to create a flexible environment that anticipates the technical expectations of 21st century customers, controls costs, and facilitates hassle-free move-in, show operation and move-out.

Extensive use of glass provides elegant pre-function and reception spaces and makes the building feel friendly and accessible, while actual access to event areas can be well controlled. Attractive and durable finishes, fixtures and amenities are used throughout, and the Wisconsin Center District invested over \$1 million in integrated and commissioned artworks for the building. It is home to the \$1.2 million Burke Family Collection of commissioned and integrated art, and some of the most advanced and IT infrastructure anywhere.

Concessions

Various food items can be found in the Coffee Corner located by the main entrance.

Breaks and Refreshments

Breaks with coffee service will be available Monday through Thursday mornings from 10:00-10:30 am and afternoons from 3:00 – 3:30 pm in Lobby areas.

Internet Service

Complimentary High Speed Wireless service will be available from May 17th Sunday, until the conclusion of the meetings on May 21st Thursday. This High Speed WIFI will be available throughout the entire first floor of the Wisconsin Center.

To access the internet from your device simply select SSID "SFS2015" from the list of available Wi-Fi networks on your laptop, phone, or tablet. No password will be required.

ATM Machines and Visitor Information at Wisconsin Center

An automated teller machine and visitor information is located by the Main Entrance to the Wisconsin Center.

PARKING

The Wisconsin Center parking lot is located at 500 W. Wells Street, Milwaukee, WI – Parking is \$15/day. No overnight parking.

There are abundant sources of available parking downtown which can be found at: www.parkmilwaukee.com

Special SFS Rate of \$6 at impark 615 N. Plankton.

- 1) Do NOT push the button for a ticket.
- 2) At the entrance, hold the QR code by the red scanner towards the bottom of the machine.
- 3) A ticket will automatically print and should read:
“Welcome: SFS 2015”.



TRANSPORTATION

Milwaukee offers a wide variety of convenient transportation options that make it easy to get from A to Z and all points in between. When it comes to getting around, there's no comparison between Milwaukee and its larger metropolitan counterparts. Whether you're looking to travel into or out of the city, or just around downtown, Milwaukee offers a multitude of choices that make transportation hassle free.

GENERAL MITCHELL INTERNATIONAL AIRPORT

- Just eight miles from downtown
- Ranked among the top fastest growing airports in the world
- U.S. Department of Transportation data ranks Mitchell's average fare significantly less than the nation's average.
- Ranked by Conde Nast as one of the top five business airports three years in a row
- Eight on-premise auto rental agencies
- Taxi fare from airport to downtown hotels is approximately \$21 each way
- Convenient, low-cost airport shuttle services are available 24 hours through Go Riteway Transportation, see www.goriteway.com

MILWAUKEE INTERMODAL STATION (AMTRAK, GREYHOUND, WISCONSIN COACH LINES TO O'HARE)

- Amtrak – Just 90 Minutes from Chicago, see <http://www.amtrak.com>
- Only five blocks from the Frontier Airlines Center. Recent \$17 million renovation featuring a glass-enclosed Galleria
- Convenient, multiple round trips daily between Milwaukee and Chicago's Union Station.

CONNECTIONS CAN BE MADE AT CHICAGO TO MORE THAN 500 CITIES NATIONWIDE.

- General Mitchell International is one of the few U. S. airports to include an Amtrak station. A free shuttle bus connects rail passengers to the airport.
- Greyhound hub, see <http://www.greyhound.com>
- Bus service to Chicago airports: Wisconsin Coachlines provides a relaxing and stress-free ride to Midway or O'Hare Airports. <http://www.coachusa.com/wisconsincoach/>

Getting Around Town – Easy and Convenient

With city streets laid out in a grid pattern, finding your way between convention center, hotels and downtown attractions is hassle free for even the first-time visitor. Downtown Milwaukee offers affordable and convenient parking in and around the Frontier Airlines Center for day meeting attendees.

- The City of Milwaukee ranks among the nation's most walkable cities, according to www.walkscore.com, earning Milwaukee's city center the designation of “Walker's Paradise”.
- Public Bus Transportation: Milwaukee County Transit, www.ridemcts.com.

FERRY

The Lake Express Ferry is a state-of-the-art vessel linking Milwaukee with Muskegon, Michigan. The two-hour trip offers passengers a faster and more direct route than driving south around Lake Michigan through the Chicago area. <http://www.lake-express.com>

CAR

Milwaukee is conveniently located 100 miles north of Chicago at the intersection of I-94 and I-43. The award-winning \$810 million Marquette Interchange completed in 2008 assures optimal downtown highway traffic flow.

Emergencies/First Aid

The registration team at Conference Registration will have detailed information on how to handle various emergencies and first aid. For life threatening emergencies: Call WCD Public Safety at Extension 6165 and report the locations and symptoms of the victim.

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**U.S. GEOLOGICAL SURVEY***United State Department of the Interior*

Reston, VA 20192

usgs.gov/ecosystems/fisheries**Ecosystem Science for Now and the Future: Fisheries**

Healthy watersheds and thriving fish populations are vital to the wellbeing of American society, providing clean water, food, and recreation-- yet almost 40 percent of the Nation's freshwater fish species are considered at risk or vulnerable to extinction.



United States Geological Survey's Fisheries Program conducts cutting-edge research to protect, restore, and enhance our Nation's fisheries and their habitats. Our world-class scientists provide expertise and science to address local, regional, and national questions on aquatic species, communities, and habitats which supports Department of Interior bureaus, state and federal partners, non-governmental organizations, and native tribes in their decision-making.

U.S. Department of the Interior
U.S. Geological Survey

**[http://www.usgs.gov/
ecosystems/fisheries](http://www.usgs.gov/ecosystems/fisheries)**

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247 W. Freshwater Way
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Contact: Ashley Janke
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Great Lakes Regional Office

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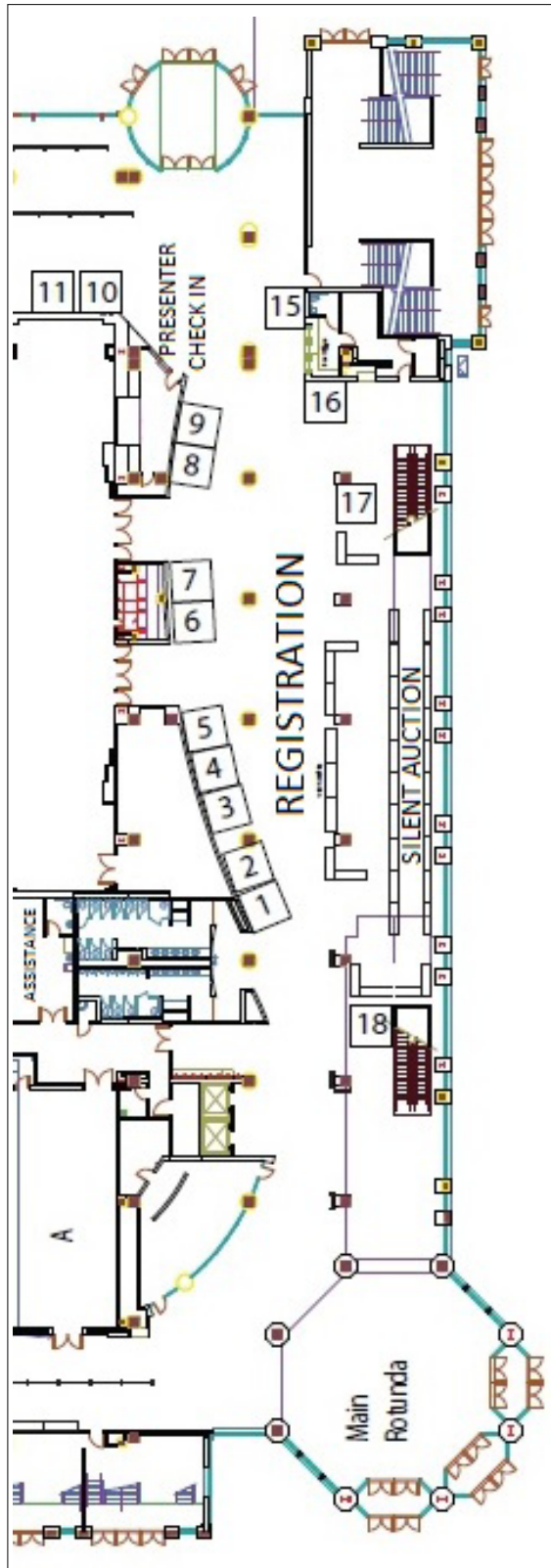
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2015 SFS EXHIBITORS



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Colin Kirk

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 ckirk@waterprobes.com

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WORKSHOPS

The Leaf Pack Experiment Training Workshop For Teachers

Saturday, May 16, 9 am-4 pm

UW-MILWAUKEE SCHOOL OF FRESHWATER SCIENCES

Stroud Water Research Center and the SFS Education and Diversity Committee are excited to provide the third consecutive Leaf Pack workshop for teachers and environmental educators at the SFS annual meeting. The Leaf Pack Experiment is a fun, hands-on research and outreach tool for non-scientists which demonstrates how our actions on land impact life and water quality in streams. Leaf Pack promotes inquiry-based interdisciplinary watershed education and engages diverse audiences in conducting their own experiments, gathering relevant ecological data, exploring food webs, learning classification skills, using technology to share data, comparing data with those of other communities and applying that information to protect local watersheds. During this workshop participants will receive an overview of stream ecology and watershed concepts based on research done at the Stroud Water Research Center. Taking our boots to the stream, we'll then experience hands-on examination of leaf packs with live aquatic macroinvertebrates, including their identification and a look at the Leaf Pack Network® web-site and database. Contact Tara Muenz (tmuenz@stroudcenter.org, 610.268.2153 ext. 301).

Introduction To R

Sunday, May 17, 9:00 am-5:00 pm

WISCONSIN CENTER – ROOM 102AB

The R computing environment has become a leading computational freeware for data analysis and display. This workshop is intended to introduce participants to the "R" computing environment. Participants will learn to import, export and transform data to run statistical tests and data summaries. Instructors will demonstrate several functions of R and associated packages increasing the understanding and use of the R environment. Students will be expected to bring their own computer, and will be provided with many additional resources for exploring and learning in the R environment. A basic understanding of statistics and statistical tests is required.

Identification Of Odonata Nymphs

Sunday, May 17, 9:00 am-5:00 pm

WISCONSIN CENTER – ROOM 102DE

The workshop will focus on identification of nymphs of Odonata of the Upper Midwest. Most attention will be given to our six families of Anisoptera but we will broad-brush our three families of Zygoptera as well. Each student will examine nymphs or exuviae of all nine families under magnification. The instructor, Bob DuBois, has authored over 3 dozen articles relating to the conservation management, ecology and taxonomy of Odonata. He currently curates the Wisconsin Department of Natural Resources' Odonata collection and oversees the monitoring efforts of the Wisconsin Odonata Survey.

SRC (Student Resources Committee) Workshop/Excursion

Sunday, May 17, 9:00am-3:00pm

We're partnering with Milwaukee Riverkeeper, Milwaukee Kayak Company, and the Urban Ecology Center to provide a kayak paddling tour of the Milwaukee River and a workshop on human/environment interfaces explored from scientific and societal perspectives. Local experts will guide us through the river's unique combination of built and unbuilt environments, highlighting current issues such as fish passage, dam removal, and water quality. We'll put in just below the Estabrook Dam and paddle downstream to Riverside Park for a workshop and panel discussion at the Urban Ecology Center - a 20,000-sq.-ft. green building and community-based nature center. Here we'll eat lunch while we learn about successes, challenges, and opportunities for aquatic scientists working to make discoveries and find solutions where humans interact with the freshwater environment. After the workshop we'll get back on the water and continue down to finish at the Rock Bottom Brewery pier, just 3 blocks away from the conference venue. The event will last approximately 6 hrs (1 hr transport to the start, 2-3 hrs paddling, 2 hrs lunch/workshop). Kayaks, safety equipment, and safety training will be provided. Depending on seasonal water levels the location of this event may change.

Meeting time and place: 9:00 AM at the Wisconsin Center (conference venue) to take public transit with the group, or 10:00 AM at Estabrook Dam in Estabrook Park. GPS coordinates of the dam: 43°06'06.3000", -087°54'43.4844"

Ending time and place: 3:00 PM at Rock Bottom Brewery pier; GPS coordinates: 43°02'23.3088", -087°54'40.3956"

SFS Taxonomic Certification Program

Specimen Testing

Specimen Tests -Monday, May 18, 8:30 am-4:00 pm

WISCONSIN CENTER, ROOM 102A

Online Image Testing

Computer Image Tests (Eastern and Western EPT) – Monday, May 18, 12:30 pm-4:00 pm

BRYANT & STRATTON COLLEGE, W. WISCONSIN AVE. CAMPUS COMPUTER LAB

Taxonomic Certification Committee Meeting

The TCC will meet in Room 102A , May 18, 4pm – 5pm.

Taxonomy Fair

Wednesday, May 20, 1:30-4:00 pm

Wisconsin Center, South Foyer and Room 102A

The Taxonomy Fair at the Annual Society for Freshwater Sciences meeting is an opportunity for students and professionals alike to interact with leading experts in the fields of invertebrate and algal taxonomy. The Technical Issues Committee has gathered over 10 experts in taxonomy and systematics to assist participants in difficult and unique taxa. Taxonomic experts will gather at the Taxonomy Fair during the Wednesday evening poster session. Please bring your difficult, unknown or interesting specimens to the taxonomy fair and have them verified by experts in the field. This is an opportunity to discuss your findings with other taxonomists, collaborate on new research and learn about new advances in systematics. The Taxonomy Fair is an open session allowing for intimate one on one interaction with taxonomic experts.

Please bring any specimens you wish to discuss, and remember to abide by any restrictive guidelines for traveling with specimens and EtOH.

Technical Issues Committee

Participating Taxonomic Experts:

Participant	Taxonomic Group	Affiliation
Sylvia Lee	Diatoms	Cary Institute of Ecosystem Studies
Rob Dillon	Gastropods	College of Charleston
Luke Jacobus	Mayflies	IUPUC
Robert Dubois	Odonata	Wisconsin DNRC
Mark Wetzel	Oligochaeta	Illinois Natural History Survey
Ed DeWalt	Plecoptera	Illinois Natural History Survey
Julie Heinlein	Soft Algae	Michigan State University
Jason Robinson	Trichoptera	Illinois Natural History Survey
Rebecca Winterringer	Mollusks	URS corporation
D. Christopher Rogers	Crustacea	Kansas Biological Survey
Bohdan Bilyj	Chironomidae	BioTax Consultants
Fredric Govedich	Hirudinea	Southern Utah University

SFS 2015 FIELD TRIPS

FRIDAY, MAY 22

Lake Michigan Research Cruise

The Lake Michigan field trip will be aboard the R/V Neeskay. The 21.6 m Neeskay is the School of Freshwater Sciences' primary research vessel. "Neeskay" is derived from the language of the Ho-Chunk, a Wisconsin Native American tribe, and translates as "pure, clean water." It provides year-round access to the Great Lakes and has a fully functional research platform and floating laboratory. This exploration will cruise to Lake Michigan's Green Can reef where oceanographic scale sampling will be undertaken including ROV deployment followed by bottom samples collected with the box corer, benthos corer, and PONAR grabs. Since no "weather day" can be scheduled we will plan to sample within the harbor if really big winds & waves are present. One group will be accommodated on half-day trip: a Morning Cruise from 8:00 am-12:00 pm. The bus departs the Hilton Milwaukee Downtown at 7:30 am. On-board meals will be provided. Contact: Jerry Kaster, University of Wisconsin Milwaukee School of Freshwater Sciences; jlk@uwm.edu or 262-949-0842. Bus departs from the Hilton.

Aldo Leopold Legacy Center, Shack And Farm

The Aldo Leopold Foundation, executor of Aldo Leopold's historic property and literary legacy, is headquartered at the Aldo Leopold Legacy Center, Baraboo, WI and 1 mile from the famous Leopold Shack. This full-day tour weaves together Aldo Leopold's personal history, his famous Shack, the landscape of A Sand County Almanac, and the foundation's local, regional and international work advancing Leopold's land ethic. The Aldo Leopold National Historic Landmark (Leopold's Shack) annually attracts thousands from around the world. Admirers want to see and understand the land Leopold and his family restored to health as they aspired to a land ethic. Their history and experiences come alive with historic photos, family stories and landscape history. The Aldo Leopold Foundation, started in 1982 by the five children of Aldo and Estella Leopold, fosters the land ethic through the legacy of Aldo Leopold. The foundation's work tangibly connects to the Leopold tradition of seeking deeper understanding and taking action. The Leopold-Pine Island Important Bird Area, 12,000 acres surrounding Leopold's Shack, is a model for collaborative conservation. This collaborative involves federal, state, non-profit and private lands using at-risk birds as indicators of progress toward planned ecosystem conditions. Birds as indicators, conservation planning, adaptive management, restoration, invasive species control, prescribed burning, and much more help this landscape tangibly serve regional and national conservation plans. The bus departs from the Hilton Milwaukee Downtown at 7:30 am and will return by 5 pm. Box lunches will be provided. Contact and Group Leader: Bob Stelzer, University of Wisconsin Oshkosh; Phone 920-424-0845, email: stelzer@uwosh.edu). Bus departs from the Hilton.

The Preserves of Mukwonago River Watershed and Historic Lapham Peak

The Mukwonago River is one of the healthiest in southeastern Wisconsin. The watershed is located approximately 40 miles southwest of downtown Milwaukee in the southeast glacial plains of Wisconsin. A sizable portion of the watershed is managed as a preserve by the Wisconsin Department of Natural Resources and The Nature Conservancy (TNC). Surrounded by ground-moraines and outwash gravel terraces, the watershed includes important habitat for rare fish and mussels; the Mukwonago River is believed to harbor the largest assemblage of native mollusk species in Wisconsin. Natural areas in the watershed include the Lulu Lake Preserve (203 ha), the Crooked Creek Preserve (112 ha), Pickerel Lake Fen (54 ha), and the Newell and Ann Meyer Nature Preserve (264 ha). We will explore the preserves by foot and canoe.

The field trip will provide an opportunity to learn how the TNC manages the preserves to maintain rare natural communities and how the organization works with individuals and organizations to promote long-term conservation within the watershed. We will have lunch at a local eatery in the town of Mukwonago. On the way back to Milwaukee we will stop at historic Lapham Peak, one of the first National Weather Service signal stations. There we will climb a 45-foot observation tower to atop the highest point in Waukesha County to view the topography of this post-glacial landscape. If time permits we will stop for a cold beverage at the Water Street Brewery in nearby Delafield. Please wear walking shoes and dress for the weather. Participants should also bring a bottle of water to drink while canoeing. Food and beverage costs are not included in the fee. Bus departs the Hilton Milwaukee Downtown at 8:30 am and returns at 4:30 pm. Contact and Group Leader: Roger Haro, University of Wisconsin La Crosse (email: rharo@uwlax.edu). Bus departs from the Hilton.

Stream Restoration for Aquatic Connectivity in the Milwaukee River and Lake Michigan Watersheds

This field trip will focus on stream restoration to improve aquatic connectivity in the Milwaukee River and Lake Michigan Watersheds. The trip will highlight the successful efforts of the Ozaukee County Planning and Parks Department's Fish Passage Program. Since 2006, the Program has identified and remediated over 230 impediments to fish passage. This work have reconnected over 100 stream miles and thousands of acres of high-quality habitat which has supported long-term efforts to re-establish self-sustaining native populations of threatened and special-concern fish. Target species include lake sturgeon (a species of special concern in Wisconsin), walleye and northern pike. Program activities have received national awards and recognition and are supported by a variety of federal, state, and local grants including funding from the NOAA/ARRA, USEPA/GLRI, and the USFWS. Field trip sites will include a natural fishway allowing aquatic species passage past the Mequon Thiensville Dam; the Lime Kiln Dam and Newburg Dam removal and restoration sites; a large scale habitat enhancement project on Ulao Creek; and a road/stream crossing replacement in Ehlers Park. Participants will have lunch at the Water Street Brewery. The bus departs from the Hilton Milwaukee Downtown at 8 am and will return at 4 pm. Contact and Group Leader: Andrew T. Struck, Director of Ozaukee County Planning and Parks Department. (Phone 262-238-8275, email: astruck@co.ozaukee.wi.us). Bus departs from the Hilton.



MEETINGS

Saturday

SFS FINANCE COMMITTEE

Saturday, May 16, 3:00 pm-6:00 pm
Hilton Hotel, Miller Room, 4th Floor

Sunday

FWS EDITORIAL BOARD COMMITTEE

Sunday, May 17, 7:00 am-9:00 am
Hilton Hotel, McArthur Room, 4th Floor

SFS BOARD OF DIRECTORS MEETING

Sunday, May 17, 9:00 am-5:00 pm
Wisconsin Center, Room 103DE

INSTARS ORIENTATION

Sunday, May 17, 1:00-4:00 pm
Wisconsin Center, Room 103C

STREAM RESILIENCY RCN FOOD WEB MODELING WORKING GROUP

Sunday, May 17, 11:00 am-6:00 pm
Wisconsin Center, Room 102C

This meeting is intended to provide instruction and training in the utility, structure, development, and application of empirical and theoretical models to stream food webs.

Monday

SFS ENDOWMENT COMMITTEE

Monday, May 18, 8:00 am-9:00 am
Hilton Hotel, Founders Room, 5th Floor

SFS COMMITTEES – LUNCH MEETINGS

Monday, May 18, 12:00 pm-1:30 pm
Hilton Hotel, Wright Ballroom, 4th Floor
ALL COMMITTEES not otherwise listed.

SFS SRC LUNCH MEETING

Monday, May 18, 12:00 pm-1:30 pm
Hilton Hotel, Crystal Ballroom, 5th Floor

TAXONOMIC CERTIFICATION COMMITTEE MEETING

Monday, May 18, 4:00 pm-5:00 pm
Wisconsin Center, Room 102A

Tuesday

SFS PUBLICATIONS COMMITTEE

Tuesday, May 19, 7:00 am-9:00 am
Hilton Hotel, Mitchell Room, 4th Floor

2016 HYDROLOGY WORKSHOP PLANNING GROUP

Tuesday, May 19, 12:00 pm-1:30 pm
Hilton Hotel, Mitchell Room, 4th Floor

THE STREON EXPERIMENTAL PROGRAM: STATUS, UPDATES, AND GROUP DISCUSSION

Tuesday, May 19, 12:30 pm-1:30 pm
Hilton Hotel, Walker Room, 4th Floor

The STREON Experimental Observatory Network (STREON) is an experimental initiative that is part of the aquatic program at the National Ecological Observatory Network (NEON). This open-access experiment spans sites across North America, and is designed to manipulate stream nutrient concentrations and the presence/absence of large-bodied consumers at 10 NEON aquatic sites, from Puerto Rico to Arctic Alaska. This session is designed to provide an update on the status of STREON and provide a forum for STREON working group discussions. Open to all attendees, lunch is not provided.

Contact: Stephanie M. Parker, Ph.D., Aquatic Ecologist, National Ecological Observatory Network, sparker@neoninc.org

Wednesday

SFS MEMBERSHIP LUNCH

Wednesday, May 20, 12:00 pm-1:30 pm
Wisconsin Center, Ballroom ABC

CHAPTER INFORMATION SESSION

Wednesday, May 20, 4:00 pm-5:00 pm
Wisconsin Center, Room 101B

Thursday

NEW BOARD OF DIRECTORS BREAKFAST

Thursday, May 21, 7:30 am-9:00 am
Hilton Hotel, Regency Ballroom, 5th Floor

Friday

SYNTHESIS FOR SCALER:

SCALE CONSUMERS AND LOTIC ECOSYSTEM RATES

Friday, May 22, 9:00 am-5:00 pm
Hilton Hotel, Oak Room, 5th Floor

Contact: Walter Dodds.

We will explore methods for scaling measurements of ecosystem metabolism and nitrogen uptake from patches, to reaches and whole watersheds. The influence of consumers on those rates and how they scale will be assessed, and a framework for comparisons of scaling across biomes will be developed. We will use data from recently completed experiments to initiate these efforts. Approaches taken will include whole-watershed modeling compared to synoptic sampling and statistical approaches such as structural equations modeling compared across scales.

EVENTS AND ACTIVITIES

Opening Reception

Sunday, May 17, 8:00-10:00 pm

Wisconsin Center Lobby ABC

A welcome reception to the 2015 SFS Annual Meeting will be held on Sunday, 17 May 2015 in the Wisconsin Center Lobby ABC immediately following the SFS Meeting Opening-Awards. Conference registration will be open prior to the reception to allow you to pick up your conference materials. Light hors d'oeuvres and a cash bar will be available.

Jam Sessions

Sunday - Tuesday, May 17-19, 9:00-11:59 pm

Monarch Lounge at the Hilton

Come join fellow attendees turned musicians for a fun and lively evening. No need to sign up. Watch for more details to be released at the meeting.

SFS Student-Mentor Mixer

Monday, May 18, 6:30-8:30 pm

Hilton Hotel, Crystal Ballroom

SFS Mixer And Live Auction

Monday, May 18, 7:30-10:00 pm

Wisconsin Center Ballroom ABC

SFS Mixer Honoring Retirees

Tuesday, May 19, 5:00-7:00 pm

Wisconsin Center Lobby ABC

Come to the Tuesday Mixer and self-identify as a new or existing SFS retiree and get your EMERITUS ribbon and a drink ticket.

SFS Endowment Reception

Tuesday, May 19, 5:30 pm-7:00 pm

Hilton Hotel, Regency Ballroom

Social Event And Tour At UWM School Of Freshwater Science

Tuesday, May 19, 7:00 pm-10:00 pm

(Busses depart the Wisconsin Center at 6:30 p.m.)

Join the School of Freshwater Sciences (the "other" SFS) for an evening of social exchange, freshwater interactive displays, research ship tours, and visit research laboratories, and dedicated labs such as the freshwater robotics laboratory (remotely operated vehicles!). The School of Freshwater Sciences is located at the edge of the largest freshwater system on the Earth's surface--the Great Lakes. Re-dedicated in 2009 as the SFS,

the school expands a tradition of freshwater studies at UWM that began in 1966 with the Center for Great Lakes Studies and continued as the Great Lakes WATER Institute in 1998. As the only graduate school in the U.S. dedicated to the study of freshwater, its research and education programs are integrated across four major areas: freshwater ecosystem dynamics; human and ecosystem health; freshwater technology; and freshwater economics, policy, and management. No charge for tour and transportation. Cash bar. Busses depart from the Wisconsin Center beginning at 6:30 pm.

SFS Membership Lunch

Wednesday, May 20, 12:00 pm-1:30 pm

Wisconsin Center, Ballroom ABC

Poster Session

Wednesday, May 20, 1:30-4:00 pm

Wisconsin Center, North and South Foyers

Chapter Information Session

Wednesday, May 20, 4:00 pm-5:00 pm

Wisconsin Center, Room 101B

Fun Run

Wednesday, May 20, 4:00 pm-6:00 pm

The SFS Annual 5k Run will be along the beautiful shore of Lake Michigan, starting near Discovery World and looping south through Lake Shore State Park. The start/finish area is located exactly 1 mile due east of the convention center and the course has very little change in elevation. Flat and fast! A shuttle will depart from the Wisconsin Center to transport runners to the park from 3:45-4:30 pm and the race will start around 5-5:15 pm. There will be refreshments at the finish and the run will be chip timed with results posted online afterward. Runners will also receive a Fun Run t-shirt.

DISCOVERY WORLD – Offsite Social Event

Wednesday, May 20, 7:30 pm-11:00 pm

Busses depart from the Wisconsin Center

Join us for a reception-style evening event at the Discovery World Science and Technology Center for the SFS evening social event. Take a journey from the Great Lakes to the Caribbean when you step into the Reiman Aquarium. You'll have an opportunity to experience the hydrologic cycle via an interactive cloud, view submerged habitats, and manage the flow of water at the Great Lakes Future exhibit.

SPECIAL OPPORTUNITIES AND INFORMATION FOR STUDENTS AND POST-DOCS

Outstanding Student Presentation Awards

SFS will provide recognition and awards for the 2015 outstanding student presentations at the 2016 SFS Annual Meeting. All eligible presentations will be evaluated in consideration of awards' criteria.

2014 Award Winners

JOANNA BLASZCZAK

Duke University

Best Oral Presentation in Applied Research for her talk

"Is all impervious surface created equal? A study of variation in stream chemistry across 10% impervious surface watersheds"

JESSICA CORMAN

Arizona State University

Best Oral Presentation in Basic Research for her talk

"A shading experiment to study how calcium carbonate deposition influences nutrient limitation"

CHRISTOPHER DALTON

Cornell University

Runner-up for Best Oral Presentation in Basic Research for his talk

"Predators alter nutrient recycling of prey by reducing feeding rates and metabolism"

EMILY DAVIS

University of Washington

Runner-up for Best Oral Presentation in Applied Research for her talk

"Wildfire effects on stream metabolism across gradients of time and fire severity in an Idaho wilderness watershed"

KEELEY MACNEILL

Cornell University

Best Poster Presentation in Basic Research for her poster

"Assessing nutrient uptake along an elevation gradient in Ecuador using multiple techniques"

CAMERON TURNER

University of Notre Dame

Best Presentation Emphasizing Methodology for his presentation

"Concentrations of aqueous and sedimentary environmental DNA (eDNA) reflect fish abundance"

MISHA WARBANSKI

University of Victoria

Best Presentation by an Undergraduate Student

for her presentation

"A multi-elemental analysis of freshwater and marine three-spined stickleback (*Gasterosteus aculeatus*) from coastal British Columbia"

STACEY WENSINK

Oakland University

Best Poster Presentation in Applied Research for her poster

"Riprap alters the structure and function of Lake St. Clair shorelines"

SRC Student-Mentor Mixer

Monday, May 18, 2015, 6:30-8:30 pm

Hilton Hotel - Crystal Ballroom

The SFS Student-Mentor Mixer, conducted during the annual conference, is designed to facilitate interactions between students and experienced professionals in the field of freshwater science. Mentors may include professors, research associates, post-doctoral researchers, government employees, and private consultants. The SFS Annual Student-Mentor Mixer is open to all undergraduate students, graduate students, and post docs, however, registration is required. The Student-Mentor mixer provides students with the opportunity to make connections with professionals who share similar interests, gain insight into future career opportunities, and receive valuable advice on navigating through the scientific research process. Mixers provide students a great opportunity to network and engage in lively conversation with mentors and peers in a relaxed environment. Those pre-registered will receive a group assignment and complimentary drink ticket with your conference registration materials.



Student Volunteer Training

Sunday 17 May 2015, 9:00 am – 5:00 pm

Wisconsin Center Main Lobby AB

Check in at the registration desk for instructions and details for the sessions and tasks for which you've volunteered.

SFS Student Resource Committee Lunch

Meeting

Monday, 18 May 2015, 12:00 – 1:30 pm

Hilton Crystal Ballroom

If you are an undergraduate or graduate student in SFS, please join the Student Resource Committee (SRC) for our annual luncheon meeting. Learn about the SRC's activities and how you can become more involved in the society. We will also be electing leadership positions for the coming year.

5TH ANNUAL INSTARS PROGRAM



Instars is a program sponsored by the Society for Freshwater Science for undergraduates from under-represented groups interested in the study of freshwater. This program teaches undergraduate students about the many disciplines of freshwater science through interactions with other undergraduates, graduate student mentors, and professional SFS members. The core of the program is attending the 2015 SFS Annual Meeting. Instars activities include:

- A half-day, pre-meeting Instar orientation workshop open only to SFS Instar Fellows.
- A special Instars session open to all attendees on Monday, May 18 from 10:30 am – 12:00 p.m. in room 101A, featuring some of the leading professionals on the study of freshwater ecosystems.
- Networking activities with peers and mentors during the meeting.
- Attending plenary sessions and a wide choice of special, contributed, and poster sessions.
- Opportunities to present undergraduate research in general sessions with friendly review from professional aquatic ecologists.
- Post-meeting networking and linking to research and educational opportunities in aquatic science.

SFS sponsors a number of Instars Fellows by providing meeting registration fees, travel, and lodging for the pre-meeting activities and the annual meeting.

This is the fifth Instar class! Several previous Fellows are presently in graduate school and will participate as mentors. Photos of previous classes, details of Instars activities, application materials and additional web communications are posted regularly on the SFS website.

Instar workshops, with the exception of the orientation workshop on Sunday, are open to all students or mentors attending the meeting; however, pre-registration is encouraged for planning purposes.

MORE INFO

- <https://www.freshwater-science.org/Education-and-Outreach/Instars-Program.aspx>
- <https://www.facebook.com/pages/Instars>

Faculty and students are encouraged to contact any members of the organizing committee for other information

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DR. KRISTA CAPPS

University of Maine
Krista.capps@maine.edu

SFS Instars Mentoring Workshop Orientation

(Invitation Only)

Sunday, 17 May 2015, 1:00 - 4:00 pm

Wisconsin Center – Room 103C

This is the fifth year that the Society for Freshwater Science (SFS) is sponsoring the Instars Mentoring Program for undergraduates from under-represented groups who are interested in the study of freshwaters. The program is open to students sponsored through Instars Fellowships and others from under-represented minorities. During the annual meeting opportunities for networking among graduate students, faculty and professionals will be promoted as we strive to encourage diversity in our discipline. This workshop is only for Instar Fellows.

PRESENTER INFORMATION

Concurrent Sessions – Orals

Ten concurrent sessions will be held in the first floor of the Wisconsin Center in the meeting rooms labeled 101, 102, and 103. Each session room will be equipped with a projector, screen, PC laptop, and microphone. Wireless internet access has been arranged throughout the facility and in all the meeting rooms.

You must access the abstract system to upload your presentation so that it can be pre-loaded on the laptop in your room. Upload your final presentation no later than midnight the day prior to your scheduled presentation (i.e., 11:59 pm Monday for a Tuesday presentation).

Link for uploading

<http://sfsannualmeeting.org/Papers.cfm>

NEW THIS YEAR

All session presentations will be downloaded from the online system, not manually loaded at the presentation room onsite, however a speaker ready room and speaker management team will be on hand if you need assistance.

The speaker ready room hours are the same as the registration hours for the conference. Check in at the registration desk and you will be directed to a speaker management team member to assist you if needed.

Session Chair Information

Please arrive 30 minutes early to familiarize yourself with the meeting room and AV equipment. The presentation files for each session will be pre-loaded on the laptop in the room in a folder by date and time. Once the presentation is launched, the presenter will control the program from the podium using a handheld slide advancer/laser pointer (provided). Alternately, the presenter may use the computer mouse or the up/down/right/left keys on a keyboard for navigation. The session chair or other room monitor will serve as a timer and indicate reminder times. We must keep on time! Do not allow speakers or Q&A sessions to run over time. Start sessions on time; do not delay while people return from breaks. If a presenter ends early or a talk is cancelled, wait until the scheduled start of the next presentation before continuing.

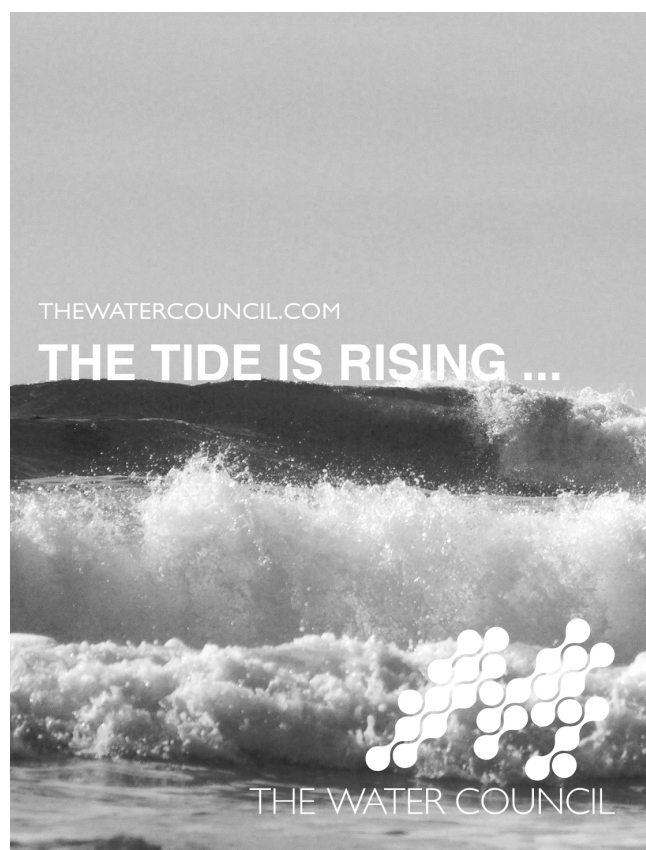
Talks are 12 minutes long with 2 minutes for questions and a 1-minute period for changing rooms (except for some special session talks scheduled for 30 minutes). Please briefly introduce the speaker, their affiliation, and the title of their talk - no biographical elaboration is necessary.

To keep talks on schedule, the session chair will use a timer (provided) to keep track of session times. We will use the following timing conventions; at 10 minutes past the start of the talk, notify the speaker that there are 2 minutes left. At 12 minutes, indicate it is time to begin any questions; At 14 minutes indicate that the talk and questions are over. The session chair or room monitor will be provided with three cards: A yellow card to indicate there are 2 minutes left; a green card to indicate it is time for questions; and a red card to indicate that the talk and questions are over. Note that if you are chairing a 30-minute talk in a special session, the talk and any questions still must end at the same time as a second concurrent 15 minute talk would.

Poster Session

The Poster Session will take place on Wednesday, May 20 from 1:30 to 4:30 pm on the North and South Foyers on both sides of the exhibitor and ballroom areas. Posters can be set up on Tuesday, May 19 from 8:00 am to 5:00 pm. To optimize viewing and interaction opportunities we encourage presenters to leave their posters in place until Thursday when they need to be removed by 6:00 pm.

Posters will be mounted on poster boards (provided) and must be no larger than 45 inches high by 41 inches wide. If your poster exceeds this size, it may be subject to removal. Posters will adhere to the boards using push pins that will be provided.



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	CONTRIBUTED SESSIONS	ORALS	POSTERS
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T05	Large River Ecology	41	67
T06	Invasive Species	34, 43	68
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T08	Organic Matter Processing	40	69
T09	Conservation and Restoration	44	69
T10	Landuse and Non-Point source Impacts	46	70
T11	Algae and Primary Production	49	71
T12	Bioassessment	50, 54	71
T13	Population and Community Ecology	51, 54	72
T14	Ecology of Fish and Other Aquatic Vertebrates	43	73
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T16	Urban Ecology	52, 55	73
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T18	Invertebrate Ecology	53, 58	74
T19	Land-Water Interfaces	54	75
T20	Hydroecology	57	75
T21	Molecular Ecology	61	75

	SPECIAL SESSIONS	ORALS	POSTERS
S01	SS: Freshwater Futures – Undergrads	34, 49	63
S02	SS: Species Distribution Models	34	63
S03	SS Species Interactions, Ecohydroecology, and Ecogeomorphology	35	---
S04	SS: Acid Deposition	36	63
S05	SS: Nutrient Reaction Rates and Residence Times	35	63
S06	SS: Invertebrate Systematics and Faunistics	36	63
S07	SS: David Allan	41	---
S08	SS: Accounting for Variability	42, 48	63
S09	SS: Dynamics of Carbon	44, 53	63
S10	SS: Quantifying Ecological Traits	45	64
S11	SS: Biotic Response to Flow	47	64
S12	SS: Ozaukee Fish Passage Program	45	---
S13	SS: Didymosphenia germinata	52	64
S14	SS: Asian Freshwater Futures	55	65
S15	SS: Deconstructing Cumulative Effects	56	65
S16	SS: Public Participation in Freshwater Research	59	65
S17	SS: Landscape Approaches to Nutrient and Sediment Management in Streams	60	65
S18	SS: Stream macroinvertebrate response to disturbances in Neotropical streams: recent advances and future directions	56	65
S19	SS: Oil Spills	57	---
S20	SS: Temporary Wetlands	61	65

SATURDAY, MAY 16, 2015

All events located at the Wisconsin Center unless otherwise noted.

TIME	SESSION
15:00 - 18:00	SFS Finance Committee Meeting <i>Hilton: Miller</i>

SUNDAY, MAY 17, 2015

TIME	SESSION			
07:00 - 09:00	FWS Editorial Board Committee <i>Hilton: McArthur</i>			
09:00 - 15:00	WORKSHOP 'SRC Workshop/Excursion' <i>Offsite</i>			
09:00 - 17:00	<table border="1"> <tr> <td>SFS Board of Directors Meeting <i>103DE</i></td> <td>WORKSHOP 'Identification of Odonata Nymphs' <i>102DE</i></td> <td>WORKSHOP 'Introduction to R' <i>102AB</i></td> </tr> </table>	SFS Board of Directors Meeting <i>103DE</i>	WORKSHOP 'Identification of Odonata Nymphs' <i>102DE</i>	WORKSHOP 'Introduction to R' <i>102AB</i>
SFS Board of Directors Meeting <i>103DE</i>	WORKSHOP 'Identification of Odonata Nymphs' <i>102DE</i>	WORKSHOP 'Introduction to R' <i>102AB</i>		
13:00 - 16:00	INSTARS Orientation <i>103C</i>			
18:00 - 21:00	SFS Meeting Opening - Awards <i>Ballroom ABC</i>			
20:00 - 22:00	Welcome Mixer/Reception <i>Lobby ABC</i>			
21:00 - 23:59	Jam Session <i>Hilton: Monarch Lounge</i>			



Hoan Bridge, Milwaukee

MONDAY, MAY 18, 2015

All events located at the Wisconsin Center unless otherwise noted.

TIME	SESSION									
08:00 - 09:00	Endowment Committee <i>Hilton: Founders</i>									
08:00 - 17:30	Taxonomic Certification Testing <i>102A</i>									
08:45 - 09:15	Daily Welcome/Announcements <i>Ballroom ABC</i>									
09:15 - 10:00	PLENARY I 'Water Tension and the Great Lakes Compact' Peter Annin <i>Ballroom ABC</i>									
10:00 - 10:30	Coffee Break <i>Main Lobby AB</i>									
10:30 - 12:00	101A	101B	101CD	102B	102DE	102C	103AB	103C	103DE	
	S01: SS: Freshwater Futures - Undergrads (Continued Tues 15:30)	S02: SS: Species	S03: SS: Species Interactions, Ecohydrology, and Ecogeomor- phology	S04: SS: Acid Deposition	T01: Food Webs	T02: Biogeo- chemistry	T03: Climate Change	T04: Aquatic Ecosystems	T05: Large River Ecology	
12:00 - 13:30	Lunch On Your Own									
12:00 - 13:30	SFS Committees Lunch Meeting <i>Hilton: Wright ABC</i>									
12:00 - 13:30	SRC Student Lunch Meeting <i>Hilton: Crystal Ballroom</i>									
13:30 - 15:00	101A	101B	101CD	102B	102DE	102C	103AB	103C	103DE	
	T06: Invasive Species	S05: SS: Nutrient Reaction Rates and Residence Times	S06: SS: Invertebrate Systematics and Faunistics	T07: Ecotoxic- ology	T01: Food Webs	T02: Biogeo- chemistry	T03: Climate Change	S07: SS: David Allan	T05: Large River Ecology	
15:00 - 15:30	Coffee Break <i>Main Lobby AB</i>									
15:30 - 17:00	101A	101B	101CD	102B	102DE	102C	103AB	103C	103DE	
	T06: Invasive Species	S05: SS: Nutrient Reaction Rates and Residence Times	S06: SS: Invertebrate Systematics and Faunistics	T07: Ecotoxic- ology	T01: Food Webs	T02: Biogeo- chemistry	T08: Organic Matter Processing	S07: SS: David Allan	S08: SS: Accounting for Variability	
18:30 - 20:30	SRC Student/Mentor Mixer <i>Hilton: Crystal Ballroom</i>									
19:30 - 22:00	SFS Mixer <i>Main Lobby AB</i>					Live Auction <i>Ballroom ABC</i>				
21:00 - 23:59	Jam Session <i>Hilton: Monarch Lounge</i>									

TUESDAY, MAY 19, 2015

All events located at the Wisconsin Center unless otherwise noted.

TIME	SESSION									
07:00 - 09:00	Publications Committee <i>Hilton: Mitchell</i>									
08:00 - 09:00	Co-Publisher Review Team <i>101B</i>									
09:00 - 09:15	Daily Welcome/Announcements <i>Ballroom ABC</i>									
09:15 - 10:00	PLENARY II 'Why Are The Great Lakes Failing To Thrive?' Irena F. Creed <i>Ballroom ABC</i>									
10:00 - 10:30	Coffee Break <i>Main Lobby AB</i>									
10:30 - 12:00	101A	101B	101CD	102B	102D	102E	102C	103AB	103C	103DE
	T06: Invasive Species	S09: SS: Dynamics of Carbon	T09: Conservation and Restoration	S10: SS: Quantifying Ecological Traits	S11: SS: Biotic Response to Flow	S08: SS: Accounting for Variability	T10: Landuse and Non-point Source Impacts	T11: Algae and Primary Production	T12: Bioassessment	T13: Population and Community Ecology
12:00 - 13:30	2016 Hydrology Workshop Planning Group <i>Hilton: Mitchell</i>					Lunch On Your Own				
13:30 - 15:00	101A	101B	101CD	102B	102D	102E	102C	103AB	103C	103DE
	T14: Ecology of Fish and Other Aquatic Vertebrates	S09: SS: Dynamics of Carbon	T09: Conservation and Restoration	S10: SS: Quantifying Ecological Traits	S11: SS: Biotic Response to Flow	S08: SS: Accounting for Variability	T10: Landuse and Non-point Source Impacts	T11: Algae and Primary Production	T12: Bioassessment	T13: Population and Community Ecology
15:00 - 15:30	Coffee Break <i>Main Lobby AB</i>									
15:30 - 17:00	101A	101B	101CD	102B	102D	102E	102C	103AB	103C	103DE
	T14: Ecology of Fish and Other Aquatic Vertebrates	S09: SS: Dynamics of Carbon	S12: SS: Ozaukee Fish Passage Program	T15: Disturbance	S11: SS: Biotic Response to Flow	S01: SS: Freshwater Futures - Undergrads	T10: Landuse and Non-point Source Impacts	N/A	T12: Bioassessment	T13: Population and Community Ecology
17:00 - 19:00	Conference Mixer Honoring Retirees <i>Ballroom ABC</i>									
17:30 - 19:00	SFS Endowment Reception <i>Hilton: Regency Ballroom</i>									
19:00 - 22:00	School of Freshwater Science Social Event & Tour <i>Offsite</i>									
21:00 - 23:59	Jam Session <i>Hilton: Monarch Lounge</i>									

WEDNESDAY, MAY 20, 2015

All events located at the Wisconsin Center unless otherwise noted.

TIME	SESSION									
08:00 - 13:00	Taxonomy Fair Set-up South Foyer and 102A									
09:00 - 09:15	Daily Welcome/Announcements Ballroom ABC									
09:15 - 10:00	PLENARY III 'Conservation of Aquatic Biodiversity in a World With Less Water: A Molecular Ecologist's Perspective' Jane Hughes Ballroom ABC									
10:00 - 10:30	Coffee Break Main Lobby AB									
10:30 - 12:00	101A	101B	101CD	102B	102DE	102C	103AB	103C	103DE	
	S13: SS: Didymosphenia germinata	T16: Urban Ecology	T17: Lakes and Wetlands	T15: Disturbance	T18: Invertebrate Ecology	S09: SS: Dynamics of Carbon	T19: Land-water Interfaces	T12: Bioassess- ment	T13: Population and Community Ecology	
12:00 - 13:30	SFS Membership Lunch Ballroom ABC									
13:30 - 16:00	POSTER SESSION North and South Foyers					Taxonomy Fair South Foyer and 102A				
16:00 - 17:00	Chapter Information Session 101B					Taxonomy Fair Tear-down South Foyer and 102A				
16:00 - 19:00	Fun Run Offsite									
19:30 - 23:00	Discovery World Offsite Evening Event Offsite									

SAVE THE DATE



SOCIETY FOR
FRESHWATER SCIENCE
2016 ANNUAL MEETING

sfs2016
RUNNING ON EMPTY
SACRAMENTO CALIFORNIA, USA

MAY 21-26, 2015
Sacramento Convention Center

For more information visit freshwater-science.org or
sfsAnnualMeeting.org

Running on Empty:**Increasing Demands on Freshwater Resources
in the face of a Changing Climate**

In many regions of the developed and developing world, large human populations live in arid environments that out of necessity depend on scarce or imported water. This is certainly true in California and the Western US where a complex infrastructure of dams, canals, and groundwater extraction provide freshwater for some of the world's most productive farms and some of the world's most opulent living conditions. Compounding this insatiable demand for freshwater is the effects that variable environmental conditions of a warming climate, changing precipitation, and increasing frequency and severity of droughts have on over-taxed water supplies.

While water resource managers contemplate these issues, the farms and cities keep consuming, despite dwindling supplies. The 2016 meeting of the Society for Freshwater Science will be held in Sacramento California at a time when the State is experiencing the worst drought in its modern history. Although droughts are not uncommon in the Western US and other semi-arid regions of the world, expanding human populations have accelerated the loss of freshwater resources and the impacts to aquatic organisms. The theme of the 2016 meeting of the Society for Freshwater Science will focus on declining freshwater availability and explore issues of freshwater depletion, the consequences for freshwater ecosystems, and potential solutions.

THURSDAY, MAY 21, 2015

All events located at the Wisconsin Center unless otherwise noted.

TIME	SESSION									
07:30 - 09:00	New Board of Directors Breakfast <i>Hilton: Regency Ballroom</i>									
09:00 - 09:15	Daily Welcome/Announcements <i>Ballroom ABC</i>									
09:15 - 10:00	PLENARY IV 'Envisioning Freshwater Futures' Stephen R. Carpenter <i>Ballroom ABC</i>									
10:00 - 10:30	Coffee Break <i>Main Lobby AB</i>									
10:30 - 12:00	101A	101B	101CD	102B	102DE	102C	103AB	103C	103DE	
	S14: SS: Asian Freshwater Futures	T16: Urban Ecology	S15: SS: Deconstructing Cumulative Effects	T20: Hydroecology	T18: Invertebrate Ecology	T02: Biogeochemistry	S16: SS: Public Participation in Freshwater Research	S17: SS: Landscape approaches to nutrient and sediment	T21: Molecular Ecology	
12:00 - 13:30	Lunch On Your Own									
13:30 - 15:00	101A	101B	101CD	102B	102DE	102C	103AB	103C	103DE	
	S14: SS: Asian Freshwater Futures	S18: SS: Stream macroinvertebrate response to disturbances in Neotropical streams: recent advances and future directions	S15: SS: Deconstructing Cumulative Effects	S19: SS: Oil Spills	T18: Invertebrate Ecology	T02: Biogeochemistry	S16: SS: Public Participation in Freshwater Research	S17: SS: Landscape approaches to nutrient and sediment	S20: SS: Temporary Wetlands	
15:00 - 15:30	Coffee Break <i>Main Lobby AB</i>									
15:30 - 17:00	101B		102B		102DE			103C		
	S18: SS: Stream macroinvertebrate response to disturbances in Neotropical streams: recent advances and future directions		S19: SS: Oil Spills		T18: Invertebrate Ecology			S17: SS: Landscape approaches to nutrient and sediment		

FRIDAY, MAY 22, 2015

TIME	SESSION			
08:00 - 19:00	Field Trip 'ALDO LEOPOLD LEGACY CENTER, SHACK AND FARM'	Field Trip 'LAKE MICHIGAN RESEARCH CRUISE'	Field Trip 'STREAM RESTORATION FOR AQUATIC CONNECTIVITY IN THE MILWAUKEE RIVER AND LAKE MICHIGAN WATERSHEDS'	Field Trip 'THE PRESERVES OF MUKWONAGO RIVER WATERSHED AND HISTORIC LAPHAM PEAK '

MONDAY, MAY 18 ORALS

S01: SS: Freshwater Futures - Undergrads

Chair(s): Carla L. Atkinson, Zacchaeus Compson
(carlalatkinson@gmail.com)

Location: 101A

- 10:30 **Dodds, Walter**
FRESHWATER FUTURES: ECOSYSTEM SERVICES, MULTIDISCIPLINARY APPROACHES, AND HOW FUTURE STREAM ECOLOGISTS CAN HELP SAVE THE WORLD
- 10:45 **Rosi-Marshall, Emma ; Lee, Sylvia; Kelly, John; Kaushal, Sujay**
PHARMACEUTICAL AND PERSONAL CARE PRODUCTS IN URBAN STREAMS AS AN UNDERSTUDIED DIMENSION OF FUTURE FRESHWATERS
- 11:00 **Hoellein, Timothy**
OUR FRESHWATER FUTURES: GARBAGE
- 11:15 **Kominoski, John**
DROUGHT AND SALTWATER INTRUSION IN FRESHWATER ECOSYSTEMS: EMERGING THREATS THAT TAKE THE FUTURE OF OUR SCIENCE BELOWGROUND

T06: Invasive Species

Chair(s): Donna Kashien, Eric Benbow

Location: 101A

- 13:30 **Hallidayschult, Thayer; Hambright, K. David**
EVALUATING THE INVASIVE HARRIS MUD CRAB AS A PREDATOR OF ZEBRA MUSSELS
- 13:45 **Nowicki, Carly; Kashian, Donna**
MECHANISMS OF TOLERANCE AND DISTRIBUTION: COMPARING THE OXIDATIVE STRESS RESPONSE IN TWO INVASIVE DREISSENID MUSSELS UNDER DIFFERENT ENVIRONMENTAL STRESSORS
- 14:00 **Boegehold, Anna; Kashian, Donna; Alame, Karim; Johnson, Nicholas**
ARE QUAGGA MUSSELS SENSITIVE TO MICROCYSTIS AERUGINOSA BLOOMS? A COMPARISON WITH SENSITIVEDAPHNIA PULEX
- 14:15 **Johnson, Erica; Tucker, Taaja ; Farha, Steven ; Wigren, Paige; Riley, Stephen**
DIET PREFERENCES OF ROUND GOBY (NEOGOBIUS MELANOSTOMUS) NEAR SLEEPING BEAR DUNES NATIONAL LAKESHORE

- 14:30 **Bailey, Katherine; Haynes, James**
HAS THE BENTHIC MACROINVERTEBRATE COMMUNITY OF SOUTHWESTERN LAKE ONTARIO CHANGED SINCE THE ROUND GOBY INVASION?-1983 TO 2014
- 15:30 **Turschak, Benjamin; Bootsma, Harvey; Moraska Lafrancois, Brenda**
ASSESSING THE POTENTIAL ROLE OF ROUND GOBY AS A CONDUIT FOR AVIAN BOTULISM IN LAKE MICHIGAN
- 15:45 **O'Malia, Elon; Hoffman, Joel**
LAND-USE PROXIES FOR AQUATIC SPECIES INVASIONS IN THE LAURENTIAN GREAT LAKES
- 16:00 **Keller, Reuben; Cole, Ellen; Garbach, Kelly**
ASSESSING THE VALUE OF OUTREACH TO BOATERS AS A TOOL FOR REDUCING INTRODUCTION AND SPREAD OF INVASIVE AQUATIC SPECIES
- 16:15 **Larson, Eric; Kreps, Timothy; Lodge, David**
POPULATION COLLAPSE OF INVASIVE RUSTY CRAYFISH IN NORTHWOODS LAKES OF WISCONSIN, USA
- 16:30 **Frauendorf, Therese C.; Marques, Piatã S.; Warbanski, Misha; Phillip, Dawn; El-Sabaawi, Rana**
SPECIES INTRODUCTION ALTERS NUTRIENT RECYCLING PATTERNS OF INTRODUCED GUPPY FISH AND RESIDENT KILLIFISH SPECIES IN TRINIDAD
- 16:45 **Marzolf, Nicholas; Shivers, Stephen; Covich, Alan; Golladay, Stephen**
ABIOTIC EFFECTS ON SPATIAL DISTRIBUTION AND ABUNDANCE OF TWO HIGHLY HIGHLY INVASIVE SPECIES IN A NOVEL LAKE ECOSYSTEM

S02: SS: Species Distribution Models

Chair(s): Mathias Kuemmerlen, Sami Domisch
(mkuemmerlen@senckenberg.de)

Location: 101B

- 10:30 **Wenger, Seth; Som, Nicholas**
IMPROVED METHODS FOR WEIGHTING SPECIES DISTRIBUTION MODELS TO IMPROVE ENSEMBLE MODEL PREDICTIONS
- 10:45 **Kuemmerlen, Mathias; Stoll, Stefan; Sundermann, Andrea; Haase, Peter**
DISTRIBUTION PREDICTIONS IN THE GERMAN LTER-SITE RHINE-MAIN-OBSERVATORY: LONG-TERM MONITORING DATA MEET HIGH-RESOLUTION, CATCHMENT-BASED SDMS

- 11:00 **Domisch, Sami; Amatulli, Giuseppe; Jetz, Walter**
NEW NEAR-GLOBAL 1 KM SPATIALLY
CONTINUOUS FRESHWATER ENVIRONMENTAL
VARIABLES FOR BIODIVERSITY ANALYSES AND
SPECIES DISTRIBUTION MODELING
- 11:15 **Hawkins, Charles; Vander Laan, Jacob**
ASSEMBLAGE PREDICTABILITY AND BETA
DIVERSITY IN STREAM ECOSYSTEMS:
MACRO-SCALE EFFECTS OF ENVIRONMENTAL
HETEROGENEITY, ISOLATION, AND
PRODUCTIVITY

S05: SS: Nutrient Reaction Rates and Residence Times

Chair(s): Dirk Koopmans, Val Klump
(koopmans@uwm.edu)

Location: 101B

- 13:30 **Weber, Larry**
IOWA FLOOD CENTER AND IOWA NUTRIENT
RESEARCH CENTER: CRITICAL RESOURCES
FOR IMPROVED FLOOD AND NUTRIENT
MONITORING, MODELING AND FORECASTING
- 13:45 **Ward, Adam; Prior, Kara; Davis, Caroline; Burgin, Amy;**
Loecke, Terrance; Riveros-Iregui, Diego; Schnoebelen,
Douglas; Just, Craig; Thomas, Steven; Weber, Larry; St.
Clair, Martin; Spak, Scott; Dalrymple, Kajsa
IN-STREAM NITROGEN PROCESSING AND
DILUTION IN AN AGRICULTURAL STREAM
NETWORK
- 14:15 **Packman, Aaron; Li, Angang; Aubeneau, Antoine**
COMBINED EFFECTS OF HYPORHEIC
METABOLISM & POREWATER FLOW ON
REACH-SCALE NUTRIENT UPTAKE: DO
CONSERVATIVE TRACERS CAPTURE
DISTRIBUTIONS OF HYPORHEIC METABOLISM?
- 14:45 **Parker, Samuel P.; Bowden, William; Arndt, Kyle A.;**
Benes, Joshua P.; Jent, Derrick G.; Giles, Courtney D.;
Flinn, Michael
SIZE MATTERS: THE EFFECT OF SUBSTRATE
PARTICLE SIZE ON BENTHIC AMMONIUM AND
PHOSPHATE UPTAKE RATES IN HIGH LATITUDE
STREAMS
- 15:30 **Reisinger, Alexander J.; Tank, Jennifer L.; Hoellein,**
Timothy; Hall, Robert O.
USING MIMS TO MEASURE RIVERINE
SEDIMENT, WATER-COLUMN, AND
OPEN-CHANNEL DENITRIFICATION

- 15:45 **Tromboni, Flavia; Zandona, Eugenia; Lourenço-Am-**
orim, Christine; Neres-Lima, Vinicius; F. Silva-Júnior,
Eduardo; Feijó de Lima, Rafael; Moulton, Timothy;
Thomas, Steven
TEMPORAL VARIATION OF AMMONIA UPTAKE
IN A TROPICAL STREAM
- 16:00 **Thomas, Steven; Tromboni, Flavia; Kohler, Brady;**
MacNeill, Keeley; Zandona, Eugenia
WHAT WE CAN AND CANNOT LEARN FROM
SLUG ADDITIONS OF NUTRIENTS
- 16:15 **Day, Natalie; Hall, Robert O.**
AMMONIUM UPTAKE KINETICS AND
NITRIFICATION IN STREAMS IN ROCKY
MOUNTAIN NATIONAL PARK
- 16:30 **LaBuhn, Shelby; Klump, Val**
UNDERSTANDING SEDIMENT PHOSPHATE
RELEASE UNDER ANOXIC CONDITIONS IN
GREEN BAY, LAKE MICHIGAN
- 16:45 **Koopmans, Dirk; Berg, Peter; LaBuhn, Shelby;**
Klump, Val
QUANTIFICATION OF BENTHIC SOURCES AND
SINKS OF NITRATE: BUILDING ON AQUATIC
EDDY COVARIANCE OXYGEN FLUX

S03: SS: Species Interactions, Ecohydroecology, and Ecogeomorphology

Chair(s): Lindsey K. Albertson, Daniel C. Allen, Melinda D. Daniels
(lalbertson@stroudcenter.org)

Location: 101CD

- 10:30 **Rice, Stephen; Mathers, Kate; Johnson, Matthew;**
Wood, Paul; Reeds, Jake; Longstaff, Holly;
Extence, Chris
ALIEN ECOGEOLOGY: IMPACTS OF
AN INVADING ECOSYSTEM ENGINEER ON
RIVER SEDIMENT DYNAMICS AND TROPHIC
INTERACTIONS
- 10:45 **Albertson, Lindsey; Daniels, Melinda**
ARE ENGINEERING EFFECTS OF CRAYFISH ON
GRAVEL BED MORPHOLOGY MEDIATED BY
SPECIES IDENTITY, BEHAVIOR, AND
BODY SIZE?
- 11:00 **Barnard, Holly; Adams, Hallie; Loomis, Alexander**
TOPOGRAPHY ALTERS TREE GROWTH –
CLIMATE RELATIONSHIPS IN A SEMI-ARID
FORESTED CATCHMENT
- 11:15 **Perkin, Josh; Gido, Keith; Falke, Jeffrey; Crockett,**
Harry; Sanderson, John; Johnson, Eric; Fausch, Kurt
GROUNDWATER DEPLETION IN WESTERN
GREAT PLAINS PROJECTED TO DRY 250
STREAM-KM OF FISH HABITAT IN THE NEXT
45 YEARS

11:30 **Allen, Daniel**
EFFECT OF STREAM HYDROLOGY AND
RIPARIAN VEGETATION ON TERRESTRIAL
ARTHROPOD COMMUNITY STRUCTURE AND
WATER VS ENERGY LIMITATION IN DRYLAND
FLOODPLAINS

11:45 **Kennedy, Ted; Muehlbauer, Jeffrey; Dodrill, Michael;
Copp, Adam; Yard, Michael**
BIG FLOOD, SMALL FLOOD, SPRING FLOOD,
FALL FLOOD: HOW CONTROLLED FLOOD
TIMING AFFECTS FOOD WEB RESPONSE IN THE
GLEN CANYON DAM TAILWATER

S06: SS: Invertebrate Systematics and Faunistics

Chair(s): Sean Sullivan
(ssullivan@rhithron.com)

Location: 101CD

13:30 **Jacobus, Luke M.**
GEOGRAPHIC PATTERNS OF MAYFLY
DIVERSITY IN THE UNITED STATES, CANADA
AND GREENLAND (INSECTA: EPHEMEROPTERA)

13:45 **Morse, John C.; Stark, Bill P.; Jacobus, Luke M.**
SPECIES OF SOUTHEASTERN USA MAYFLY,
STONEFLY, AND CADDISFLY LARVAE

14:00 **Grubbs, Scott; Baumann, Richard; Sheldon, Andrew**
REDISCOVERY OF ZAPADA CHILA IN THE
GREAT SMOKY MOUNTAINS NATIONAL PARK
AND A REVIEW OF THE EASTERN MEMBERS OF
THE GENUS

14:15 **Robinson, Jason**
EVIDENCE FOR RAPID MORPHOLOGICAL
EVOLUTION IN A SMALL CLADE OF
RHYACOPHILA SPECIES IN THE EASTERN USA

14:30 **DeWalt, R Edward**
EPT TAXA OF UPPER GREAT LAKES NATIONAL
PARK UNITS

14:45 **Wetzel, Mark J.**
ANNELIDICALLY SPEAKING – 2015

15:30 **Govedich, Fredric; Bain, Bonnie**
FRESHWATER LEECHES OF NORTH AMERICA

15:45 **Dillon, Jr., Robert T.**
THE CONCEPT OF INCIDENCE RARITY,
ILLUSTRATED BY THE FRESHWATER
GASTROPOD FAUNA OF U.S. ATLANTIC
DRAINAGES

16:00 **Rogers, Christopher**
AN INTRODUCTION TO SAFIT; THE SOUTHWEST
ASSOCIATION OF FRESHWATER INVERTEBRATE
TAXONOMISTS

16:15 **Ditsche, Petra; Michels, Jan ; Kovalev, Alexander;
Koop, Jochen; Gorb, Stanislav**
MORE THAN JUST SLIPPERY - THE IMPACT OF
BIOFILM ON THE ATTACHMENT OF RUNNING
WATER SPECIES EPEORUS ASSIMILIS

S04: SS: Acid Deposition

Chair(s): Randy Fuller, Barry Baldigo
(rfuller@colgate.edu)

Location: 102B

10:30 **McDowell, William G.; Webster, Katherine; Nelson,
Sarah; McDowell, William H.; Haney, James**
REGULATION AND RESULTS: BIOTIC AND
ABIOTIC CHANGES TO NORTHEASTERN LAKES
FOLLOWING TIGHTENING OF AIR
EMISSIONS RULES

10:45 **Baldigo, Barry; Roy, Karen**
RESPONSE OF FISH ASSEMBLAGES TO
CHANGING ACID-BASE CHEMISTRY IN
ADIRONDACK LONG TERM MONITORING
LAKES, 1984-2012.

11:00 **Albers, Ben; Charifson, David; Stanson, Valerie; Stern,
Erich; Thompson, John; Richardson, David**
FISH INTRODUCTION, FACILITATED
BY UNEXPECTED RECOVERY FROM
ACIDIFICATION, CAUSES A TROPHIC CASCADE
IN LAKE MINNEWASKA, NY

11:15 **Wingerter, Natasha**
EFFICACY OF DIRECT APPLICATION LIMING
FROM A METAPOPOPULATION PERSPECTIVE

11:30 **Kraft, Clifford; Josephson, Daniel; Jirka, Kurt**
CHEMICAL AND BIOLOGICAL RECOVERY FROM
ACID DEPOSITION WITHIN THE HONNEDAGA
LAKE WATERSHED, NEW YORK, USA

11:45 **Fuller, Randy; Haines, Grant; Paris, James;
Morgan, Wesley**
NUTRIENT UPTAKE DYNAMICS IN ACID-
STRESSED AND LIME AMENDED ADIRONDACK
MOUNTAIN STREAMS

T07: Ecotoxicology

Chair(s): Sally Entrekin, Michael Griffith

Location: 102B

- 13:30 **Griffith, Michael**
EPITHELIAL ION TRANSPORTERS: A PHYSIOLOGICAL MODEL FOR ION EFFECTS ON FRESHWATER ANIMALS
- 13:45 **Riera, Steven; Cohen, Risa A.**
ALKYL POLYGLUCOSIDE-CONTAINING COMPOUND ALTERS PLANKTON COMMUNITY COMPOSITION IN BLACKWATER POND MESOCOSMS
- 14:00 **Courtwright, Jennifer; Miller, Scott; Plunkett, Chris**
EFFECTS OF ROTENONE CONCENTRATIONS ON ZOOPLANKTON AND BENTHIC MACROINVERTEBRATES IN ALPINE LAKES AND STREAMS
- 14:15 **Tyree, Meredith; Clay, Natalie; Entrekin, Sally**
SALT IN OUR STREAMS: EVEN SMALL SODIUM ADDITIONS HAVE NEGATIVE EFFECTS ON DETRITIVORES
- 14:30 **Snyder, Heather; Woller-Skar, Megan; Boyer, Gregory**
QUANTIFICATION OF MICROCYSTIN AMONG VARIOUS FISH SPECIES ACROSS MICHIGAN: A STUDY FOCUSED ON SAFE FISH CONSUMPTION
- 14:45 **Tweedy, Brent; Vaughn, Caryn C.**
DO FRESHWATER MUSSELS AFFECT MERCURY CONTAMINATION OF AQUATIC FOOD WEBS?
- 15:30 **Shoults-Wilson, Aaron; Fritts, Andrea; Unrine, Jason; Fritts, Mark; Casper, Andrew**
HISTORIC MUSSEL SHELLS ILLUMINATE LEGACY CONTAMINANT PATTERNS OVER THE PAST 1000 YEARS
- 15:45 **Ndimele, Prince Emeka; Owodeinde, Fatai Gbolahan; Whenu, Olusegun Olufemi; Ndimele, Chinatu Charity**
HEAVY METAL CONTENT OF WATER, SEDIMENT AND FISH (CHRYSICHTHYS NIGRODIGITATUS, LACÉPÈDE, 1803) FROM INDUSTRIAL EFFLUENT-POLLUTED AQUATIC ECOSYSTEM IN LAGOS, NIGERIA
- 16:00 **Sumner, Alexandra; Johnston, Tom; Gunn, John**
POTENTIAL EFFECTS OF CLIMATE ON THE BIOACCUMULATION OF MERCURY IN TWO LARGE-BODIED FISH SPECIES IN NORTHERN ONTARIO
- 16:15 **Izegaegbe, Joshua**
ASSESSMENT OF MANGANESE, COPPER, NICKEL AND ZINC IN MUSCLE AND LIVER OF THE AFRICAN CATFISH (CLARIAS GARIEPINUS) IN ILUSHI RIVER, SOUTHERN NIGERIA

- 16:30 **Reátegui-Zirena, Evelyn; Fidder, Bridgette; Olson, Adric; Bilbo, Thomas; Dawson, Dan; Salice, Christopher**
EFFECTS OF CADMIUM ON THE REPRODUCTION AND OFFSPRING OF THE GREAT POND SNAIL LYMANEA STAGNALIS

- 16:45 **Chu, Binh; Peterson, Christopher; Vigen, Erika; Tong, Tiezheng; Gray, Kimberly; Gaillard, Jean-Francois ; Kelly, John**
EFFECTS OF NANOTITANIA ON BENTHIC MICROBIAL COMMUNITIES IN ARTIFICIAL STREAMS

T02: Biogeochemistry

Chair(s): Noah Lottig, Natalie Griffiths, Ashley Helton, Nora Casson, Erin Hotchkiss

Location: 102C

- 10:30 **Hoellein, Timothy; Zarnoch, Chester; Bruesewitz, Denise**
FRESHWATER MUSSELS INCREASE SEDIMENT DENITRIFICATION IN AN URBAN RIVER
- 10:45 **Bender, Bree; Herrman, Kyle**
SEASONAL DENITRIFICATION AND NITROGEN REMOVAL CAPACITY OF SMALL RESERVOIRS
- 11:00 **Welsh, Molly; McMillan, Sara; Vidon, Philippe**
ENVIRONMENTAL DRIVERS OF DENITRIFICATION IN NORTH CAROLINA STREAMS AND RIPARIAN ZONES
- 11:15 **Tomasek, Abigail; Hondzo, Miki; Kozarek, Jessica; Sadowsky, Michael**
QUANTIFYING THE EFFECTS OF ENVIRONMENTAL VARIABLES ON THE COMPOSITION AND ACTIVITY OF DENITRIFYING MICROBIAL COMMUNITIES
- 11:30 **Madinger, Hilary; Kunza, Lisa; Hall, Robert O.; Haueter, Jaime**
COMPARISON OF DIEL NITROGEN FIXATION FLUX MEASUREMENTS
- 11:45 **Findlay, Stuart; Bernot, Melody**
SALINITY EFFECTS ON NITROGEN CYCLING IN TIDAL WETLANDS OF THE HUDSON RIVER
- 13:30 **Helton, Ashley M. ; Ardon-Sayao, Marcelo; Bernhardt, Emily**
BIOGEOCHEMICAL REGIME SHIFTS IN COASTAL LANDSCAPES: EFFECTS OF SALTWATER INTRUSION ON CARBON AND NITROGEN CYCLING IN A COASTAL PLAIN FRESHWATER WETLAND

- 13:45 **Kinsman-Costello, Lauren; Sheik, Cody; Burton, Allen; Sheldon, Nathan; Dick, Gregory**
SEDIMENT MICROBIAL COMMUNITY
COMPOSITION AND BIOGEOCHEMISTRY ALONG
VERTICAL GRADIENTS IN A HIGH SULFUR
SUBMERGED SINKHOLE IN LAKE HURON, MI
- 14:00 **Reinhold, Ann Marie; Poole, Geoffrey; Helton, Ashley M. ; Payn, Robert; Izurieta, Clemente; Bernhardt, Emily; Burgin, Amy**
SIMULATING CONCURRENT METABOLIC
PATHWAYS IN BIOGEOCHEMICAL SYSTEMS
- 14:15 **Kincaid, Dustin; Briggs, Martin; Hamilton, Stephen K.; Zarnetske, Jay**
HYDROLOGIC CONTROLS ON
BIOGEOCHEMICAL GRADIENTS IN THICK
LAYERS OF FLOCCULENT ORGANIC
SEDIMENTS IN A THROUGH-FLOW WETLAND
- 14:30 **Krukowski, Keith ; Garcia, Antonio; Fields-Sommers, Laura; Al-Wathiqui, Mishal; DeVilbiss, Stephen; Schierenbeck, Timothy; Neureuther, Nicklaus ; Teber, Tarek**
TRACING HAWAIIAN STREAM
HYDROCHEMISTRY ACROSS AN EXTREME
PRECIPITATION GRADIENT
- 14:45 **Mineau, Madeleine; Wollheim, Wil; Stewart, Robert; Hunt, Christopher; Kicklighter, David**
DEVELOPING A REGIONAL TO CONTINENTAL
SCALE MODEL OF DISSOLVED ORGANIC
CARBON FLUX AND PROCESSING IN RIVER
NETWORKS
- 15:30 **Carey, Richard; Wollheim, Wil; Mulukutla, Gopal**
VARIABLE COUPLING OF CARBON, NITROGEN,
AND PHOSPHORUS CONCENTRATIONS DURING
BASEFLOW AND STORMS IN A SUBURBANIZING
WATERSHED
- 15:45 **Manning, David; Rosemond, Amy D. ; Benstead, Jonathan P. ; Kominoski, John; Bumpers, Phillip M.**
WATERSHED LAND USE EFFECTS ON COUPLED
NITROGEN AND PHOSPHORUS RELATIONSHIPS
IN U.S. STREAMS AND RIVERS
- 16:00 **Hein, Catherine**
LONG-TERM PHOSPHORUS TRENDS IN
WISCONSIN LAKES
- 16:15 **Hall, Robert O.; Madinger, Hilary**
STATISTICAL AND ANALYTICAL METHODS FOR
ESTIMATING OPEN-CHANNEL METABOLISM IN
HIGH-ENERGY STREAMS

T01: Food Webs

Chair(s): Allison Moody, Scott Collins

Location: 102DE

- 10:30 **Garcia, Erica; Lacksen, Katherine; McMaster, Damien; King, Alison; Douglas, Michael**
SPATIAL SCALE VARIATION IN TOP-DOWN
EFFECTS
- 10:45 **Fahimipour, Ashkaan; Anderson, Kurt;**
COLONISATION RATE AND ADAPTIVE
FORAGING CONTROL THE EMERGENCE OF
TROPHIC CASCADES
- 11:00 **Guo, Fen; Kainz, Martin; Sheldon, Fran; Bunn, Stuart**
THE EFFECTS OF PERIPHYTON FATTY ACIDS ON
GRAZER LIPID COMPOSITION AND GROWTH IN
SUBTROPICAL STREAMS
- 11:15 **Grubaugh, Catharina; Wehr, John**
RELATIONSHIP BETWEEN ECOLOGICAL
STOICHIOMETRY AND BIOCHEMICAL
COMPOSITION IN A LAKE PHYTOPLANKTON
COMMUNITY.
- 11:30 **Bumpers, Phillip M. ; Rosemond, Amy D. ; Maerz, John C.; Benstead, Jonathan P.**
EXPERIMENTAL NUTRIENT ENRICHMENT OF
HEADWATER STREAMS ALTERS FOODWEB
PATHWAYS TO LARVAL SALAMANDERS
- 11:45 **Farrell, Kaitlin; Rosemond, Amy D. ; Maerz, John C.; Bumpers, Phillip M.**
ASSESSING THE EFFECTS OF ALTERED LARVAL
SALAMANDER DENSITY ON ECOSYSTEM
PROCESSES IN A HEADWATER STREAM
- 13:30 **Collins, Scott; Wahl, David**
INVASIVE BIGHEAD CARP ALTER ORGANIC
MATTER EXCHANGES WITHIN AND BETWEEN
ECOSYSTEMS
- 13:45 **Erdozain, Maitane; Kidd, Karen; Kreutzweiser, Dave; Sibley, Paul**
EFFECT OF FOREST CONDITION ON FOOD WEB
STRUCTURE IN HEADWATER STREAMS IN
DIFFERENT REGIONS OF CANADA
- 14:00 **Terui, Akira; Akasaka, Takumi; Negishi, Junjiro; Uemura, Fumihiko; Nakamura, Futoshi**
FOOD WEB COMPLEXITY STABILIZES
SEASONAL VARIABILITY IN RIVER-
TERRESTRIAL LINKAGES
- 14:15 **Collins, Sarah M; Kohler, Tyler; Thomas, Steven; Fetzer, William; Flecker, Alexander**
THE IMPORTANCE OF TERRESTRIAL SUBSIDIES
IN STREAM FOOD WEBS VARIES ALONG A
STREAM SIZE GRADIENT

- 14:30 **Siders, Adam; Compson, Zacchaeus; Marks, Jane**
FLUXES OF CARBON AND NITROGEN FROM ISOTOPICALLY-ENRICHED LEAF LITTER TO A SHREDDING CADDISFLY REVEAL DIFFERENCES IN LITTER QUALITY
- 14:45 **Compson, Zacchaeus; Hungate, Bruce; Whitham, Thomas; Koch, George; Rakestraw, David ; Schuettenberg, Alexa; Jacobs, Ryan; Allred, Kiel; Sayer, Chelsea; Maestas, Jesse; Marks, Jane**
DOES RECALCITRANT LEAF LITTER PROVIDE MORE ENERGY TO THE MACROSCOPIC FOOD WEB? A TEST USING THE POPULUS HYBRIDIZING SYSTEM
- 15:30 **Walters, David; Raikow, David; Hammerschmidt, Chad; Mehling, Molly; Kovach, Amanda; Oris, James**
PRIMARY PRODUCTIVITY REDUCES METHYLMERCURY BIOACCUMULATION IN EXPERIMENTAL STREAM FOOD WEBS
- 15:45 **Yeager-Armstead Ph.D, Mindy**
OBSERVATIONS ON VARIABILITY IN SELENIUM BIOACCUMULATION RATES AND IMPLEMENTATION OF TISSUE CRITERIA
- 16:00 **Heald, Emily; Lawson, Zach J.; Hrabik, Thomas R.; Vander Zanden, Jake M.; Carpenter, Stephen R.**
EXPERIMENTAL MIXING OF A NORTH-TEMPERATE LAKE: EXAMINATION OF VARIABILITY IN SPATIAL AUTOCORRELATION IN FISH AND ZOOPLANKTON POPULATIONS
- 16:15 **Faithfull, Carolyn; Bergström, Ann-Kristin; Deininger, Anne**
WHY IS PHYTOPLANKTON PRODUCTION AND ZOOPLANKTON BIOMASS LOWER IN HUMIC LAKES?
- 16:30 **Murphy, Christina; Arismendi, Ivan; Johnson, Sherri**
UNDERSTANDING POTENTIAL CHANGES IN TROPHIC RELATIONSHIPS USING STABLE ISOTOPES RATIOS FOLLOWING EXTREME RESERVIOR DRAWDOWN
- 16:45 **Riney, Michael; Yak, Charlie; Ostertag, Rebecca; Tingley, Ralph; Frauendorf, Therese C.**
THE IMPACTS OF REDUCED STREAM FLOW ON FOOD WEBS IN STREAMS ON THE ISLAND OF HAWAII

T03: Climate Change

Chair(s): Lusha Tronstad, Shawn Devlin

Location: 103AB

- 10:30 **Bohall, Charles; Fitzgerald, Michael; Vance, Jesse; Roehm, Charlotte; Goodman, Keli; Parker, Stephanie; McLaughlin, Brandon; Stewart, Jenna**
THE NEON AQUATIC NETWORK: STANDARDIZING DEPLOYMENT OF AQUATIC INSTRUMENT SYSTEMS ACROSS CONTINENTAL ECOSYSTEMS
- 10:45 **Parker, Stephanie**
NEON AQUATIC ORGANISMAL SAMPLING: STRATEGIES AND LESSONS LEARNED FROM YEAR ONE
- 11:00 **Devlin, Shawn; Ellis, Bonnie; Stanford, Jack**
HEATING UP FLATHEAD LAKE: MODELING THERMAL PROPERTIES UNDER A CHANGING CLIMATE
- 11:15 **Parr, Thomas; Inamdar, Shreeram; Miller, Matthew**
COUPLED CHANGE: EXTREME WEATHER AND LAND USE IMPACTS ON WATER QUALITY AND DRINKING WATER UTILITIES
- 11:30 **Bierwagen, Britta; Julius, Susan; Hamilton, Anna; Witt, Jonathan**
THE 411 ON VULNERABILITY ASSESSMENT – SPECIFIC LESSONS FROM CLIMATE CHANGE ASSESSMENTS IN STREAMS
- 11:45 **Hamilton, Anna; Wardrop, Denice H.; Nassry, Michael; West, Jordan M.; Julius, Susan; Bierwagen, Britta; Holcomb, Megan**
A FRAMEWORK FOR EVALUATING RELATIVE WETLAND VULNERABILITIES TO CLIMATE CHANGE
- 13:30 **Follstad Shah, Jennifer; Kominoski, John; Ardon-Sayao, Marcelo; Dodds, Walter; Gessner, Mark; Griffiths, Natalie A.; Johnson, Sherri; Lecerf, Antoine; LeRoy, Carri; Manning, David; Rosemond, Amy D. ; Swan, Chris; Webster, Jack; Zeglin, Lydia**
GLOBAL META-ANALYSIS OF TEMPERATURE EFFECT ON LEAF LITTER BREAKDOWN RATES IN STREAMS
- 13:45 **Mustonen, Kaisa-Riikka; Mykrä, Heikki; Sarremejane, Romain; Hawkins, Charles; Marttila, Hannu; Muotka, Timo**
MODELING OF STREAM MACROINVERTEBRATE COMMUNITIES UNDER CLIMATE CHANGE
- 14:00 **Kendrick, Michael; Hershey, Anne; Huryn, Alexander D**
LONG-TERM (1978–2012) PATTERNS OF INSECT COMMUNITIES IN AN ARCTIC RIVER

14:15 **Tronstad, Lusha; Hotaling, Scott; Bish, Cody**
ASSESSING AQUATIC INVERTEBRATES ALONG
ELEVATION GRADIENTS IN GRAND TETON
NATIONAL PARK, WYOMING

14:30 **Yak, Charlie; Tingley, Ralph; Apwong, Maybeleen ;
Akau, James; Foulk, Patra ;MacKenzie, Richard**
POTENTIAL IMPACTS OF CLIMATE CHANGE ON
REPRODUCTION AND DISPERSAL OF NATIVE
ATYOIDA BISULCATA SHRIMP IN HAWAIIAN
HEADWATER STREAMS

14:45 **Penaluna, Brooke**
VULNERABILITY OF COASTAL CUTTHROAT
TROUT TO CHANGES IN STREAM
TEMPERATURE AND FLOW IN COASTAL
STREAMS OF THE PACIFIC NORTHWEST OF
NORTH AMERICA

T08: Organic Matter Processing

Chair(s): Kevin Kuehn

Location: 103AB

15:30 **Wallace, J. Bruce ; Eggert, Sue; Webster, Jackson R.;
Meyer, Judy L.**
COLONIZATION AND SURVIVORSHIP OF
SHREDDER TAXA DURING A LONG-TERM
ECOSYSTEM-LEVEL LITTER EXCLUSION, WOOD
REMOVAL AND LEAF-ADDITION EXPERIMENT

15:45 **Yeung, Alex; Richardson, John**
WEAK EFFECTS OF HOME-FIELD ADVANTAGE
ON THE AQUATIC DECOMPOSITION AND
COLONIZATION OF HIGH-QUALITY LEAF
LITTER

16:00 **Wymore, Adam; Rodriguez-Cardona, Bianca; McDowell,
William H.**
PATTERNS OF DISSOLVED ORGANIC NITROGEN
(DON) PRODUCTION AND CONSUMPTION WITH
THE ADDITION OF NITRATE (NO₃): INSIGHTS
INTO THE CONTROLS ON DON CYCLING

16:15 **Camp, Mieko; Layzer, Jim**
STABLE ISOTOPE ANALYSIS OF FOOD
AVAILABILITY FOR FRESHWATER MUSSELS IN
A REGULATED RIVER

16:30 **Kuehn, Kevin; Su, Rong ; Ohsowski, Brian; Francoeur,
Steve ; Phipps, Scott ; Neely, Robert**
FUNGAL CONTRIBUTIONS TO CARBON
FLOW AND NUTRIENT CYCLING DURING
STANDING TYPHA LEAF DECOMPOSITION: A
TALE FROM TWO CLIMATES

16:45 **Shogren, Arial; Tank, Jennifer L.; Mueller, Joseph;
Jerde, Christopher; Bolster, Diogo**
INVESTIGATING FINE PARTICLE TRANSPORT
AND SUBSTRATE HETEROGENEITY USING
THE NOTRE DAME LINKED EXPERIMENTAL
ECOSYSTEM FACILITY (ND-LEEF)

17:00 **Kominoski, John; Brock, Jim; McVoy, Christopher**
SPATIOTEMPORAL VARIATION IN ECOSYSTEM
HETEROTROPHY IN CARBONATE SUBTROPICAL
WETLANDS IS DRIVEN BY FLOCCULENT
ORGANIC MATTER

T04: Aquatic Ecosystem Management

Chair(s): Al Steinman

Location: 103C

10:30 **Maxwell, Bryan**
FURTHER DOWN THE RIVER : A NOVEL,
SPECTROPHOTOMETRIC, IN-SITU TECHNOLOGY
IMPROVING SPATIAL AND TEMPORAL DATA
RESOLUTION TO ADDRESS HETEROGENEITY IN
AQUATIC SYSTEMS.

10:45 **Ndimele, Chinatu Charity; Chukwuka, Kanayo
Stephen; Whenu, Olusegun Olufemi; Erondu, Ebere
Samuel; Ndimele, Prince Emeka**
PHYTOREMEDIATION OF HEAVY METAL-
POLLUTED AQUATIC ECOSYSTEM (OLOGE
LAGOON) BY WATER HYACINTH (EICHHORNIA
CRASSIPES [MART.] SOLMS) AND THE SOCIO-
ECOLOGICAL IMPLICATIONS

11:00 **Castro, Antonio J. ; Vaughn, Caryn C.; Julian, Jason P.**
CHARACTERIZING ECOSYSTEM SERVICE
BUNDLES FOR ANALYZING TRADEOFFS IN
WATERSHED MANAGEMENT

11:15 **Steinman, Alan; Ogdahl, Mary; Weinert, Maggie ;
Gillett, Nadia**
COMBINING RESULTS FROM FIELD
OBSERVATIONS AND EXPERIMENTS TO INFORM
MANAGEMENT STRATEGIES FOR A HEAVILY
USED LAKE WITH LOTS OF PROBLEMS

11:30 **Sheehan, Ken; Wollheim, Wil; Farrell, Kaitlin; Song,
Chao; Kominoski, John; Trentman, Matt; Dodds,
Walter; Rosemond, Amy D. ; Ballantyne, Ford;
Rueegg, Janine**
BEYOND OUR REACH? EXTRAPOLATING
NETWORK-SCALE AQUATIC METABOLISM
FROM REACH-SCALE OBSERVATION

S07: SS: David Allan

Chair(s): Pete McIntyre, Alex Flecker
(pmcintyre@wisc.edu)

Location: 103C

- 13:30 **Palmer, Margaret**
FROM DISPERSAL ACROSS SYSTEMS TO RESTORATION ACROSS THE U.S.
- 13:45 **Peckarsky, Barbara**
ECOLOGY OF PLACE: CONTRIBUTIONS OF J. DAVID ALLAN TOWARD UNDERSTANDING THE ROLE OF PREDATION IN OPEN SYSTEMS
- 14:00 **Flecker, Alexander**
DAVE ALLAN'S LEGACY AND THE EMERGENCE OF EXPERIMENTAL STREAM ECOLOGY: UNDERSTANDING THE FUNCTIONAL ROLE OF FISHES IN RUNNING WATER ECOSYSTEMS
- 14:15 **Poff, LeRoy**
THE NATURAL FLOW REGIME: PAST, PRESENT AND FUTURE
- 14:30 **Khoury, Mary**
SERVICE BEYOND THE UNIVERSITY: DAVID ALLAN'S MANY CONTRIBUTIONS TO THE WORK OF THE NATURE CONSERVANCY
- 14:45 **Abell, Robin**
DEFINING PROTECTION FOR THE WORLD'S RIVERS: A NEW GLOBAL METRIC
- 15:30 **Esselman, Peter; Melstrom, Richard; Stevenson, Jan; Lupi, Frank ; Riseng, Catherine ; Wiley, Mike**
VALUING FISH BIOMASS PRODUCTION AS A PROVISIONING SERVICE OF MICHIGAN RIVERS
- 15:45 **McIntyre, Dr. Peter; Reidy Liermann, Catherine; Revena, Carmen**
THE ROLE OF FRESHWATER FISHERIES IN MAINTAINING FOOD SECURITY AND BIODIVERSITY
- 16:00 **Johnson, Lucinda; Allan, David ; Cai, Meijun; Danz, Nicholas; Uzarski, Don**
USE AND INTERPRETATION OF HUMAN DISTURBANCE GRADIENTS FOR CONDITION ASSESSMENT IN GREAT LAKES COASTAL ECOSYSTEMS
- 16:15 **Fausch, Kurt**
FOR THE LOVE OF RIVERS: THE POWER OF STORY IN ENGAGING THE PUBLIC IN OUR FRESHWATER FUTURES
- 16:30 **Allan, Brian**
A CASCADE OF ECOLOGICAL CONSEQUENCES FOR WEST NILE VIRUS TRANSMISSION WHEN AQUATIC MACROPHYTES INVADE ANTHROPOGENIC STORMWATER HABITATS

- 16:45 **Allan, David**
LAKES TO LANDSCAPES, FISHERIES TO PHOSPHORUS, AND ASSEMBLAGES TO ASSESSMENTS: A 40-YEAR JOURNEY THROUGH (MOSTLY) RUNNING WATERS

T05: Large River Ecology

Chair(s): Andrew Casper, Andrew Rypel

Location: 103DE

- 10:30 **Vance, Jesse; Fitzgerald, Michael; Parker, Stephanie; Roehm, Charlotte; Goodman, Keli; Bohall, Charles; Utz, Ryan**
NEON: A NEW PLATFORM FOR LARGE RIVER ECOLOGY
- 10:45 **Fritts, Andrea; Fritts, Mark; Haag, Wendell; Rypel, Andrew; DeBoer, Jason; Casper, Andrew**
WINDOWS INTO THE PAST: MUSEUM COLLECTIONS OF FRESHWATER MUSSELS FOR THE STUDY OF LONG-TERM WATERSHED DISTURBANCE
- 11:00 **Mehler, Knut; Karatayev, Alexander Y. ; Burlakova, Lyubov E.**
DIVERSITY AND COMMUNITY STRUCTURE OF BENTHIC INVERTEBRATES BASED ON GIS-DERIVED HABITAT MAPS IN THE NIAGARA RIVER
- 11:15 **McTammany, Matthew; Wilson, Matthew; Walters, Elizabeth; Reilly, Meghan**
SPATIAL AND TEMPORAL PROCESSES INFLUENCE STRUCTURE OF LARGE RIVER BENTHIC COMMUNITIES
- 11:30 **Haro, Roger**
QUANTIFYING THE PROCESSING OF LARGE WOODY DEBRIS BY LARVAL CADDISFLIES IN THE UPPER MISSISSIPPI RIVER
- 13:30 **Collier, Kevin; Garrett-Walker, Jeremy; Górski, Konrad**
EFFECTS OF CONNECTIVITY ON FLOODPLAIN MACROINVERTEBRATE COMMUNITIES ON A LARGE NEW ZEALAND RIVER SYSTEM
- 13:45 **Pyron, Mark; Becker, Jesse; Wyatt, Kevin; DeColibus, Dawn; Etchison, Luke; Minder, Mario; Murry, Brent; Broadway, Kyle; Logsdon, Rebecca; Chaubey, Indrajeet**
ASSEMBLAGE CHANGE IN A LARGE RIVER ECOSYSTEM: HISTORICAL AND RECENT FOOD-WEB COMPARISONS
- 14:00 **Bowes, Rachel; Thorp, James; Delong, Michael**
HISTORICAL CHANGES IN FOOD WEB STRUCTURE OF THE MISSISSIPPI AND OHIO RIVERS IN RESPONSE TO DAMMING

- 14:15 **Douglass, Sarah; Stodola, Alison; Fritts, Andrea**
INVESTIGATION OF FRESHWATER MUSSEL
GLOCHIDIA PRESENCE ON ASIAN CARP AND
NATIVE FISHES OF THE ILLINOIS RIVER
- 14:30 **Tumolo, Ben; Flinn, Michael**
ANALYSIS OF LONG TERM PRIMARY
PRODUCTION DATA IN KENTUCKY LAKE: CAN
WE DETECT INVASIVE ASIAN CARP?
- 14:45 **Casper, Andrew; Hinz, Collin J.; Pendleton, Richard M.**
ECOSYSTEM RESPONSES TO ASIAN CARP
INVASION AND CONTROL: PATTERNS OF
RIVERINE ZOOPLANKTON ABUNDANCE,
BIOMASS, AND COMPOSITION
- 16:30 **Rhoades, Chuck; Johnson, Sherri; Sebestyen, Steve;
Greathouse, Effie; Ice, George; Knoepp, Jennifer;
Amatya, Devendra; Argerich, Alba; Campbell, John;
Edwards, Pam; Groffman, Peter; Likens, Gene; Wohl-
gemuth, Peter**
EXAMINING STREAM NUTRIENT VARIABILITY
IN REFERENCE CATCHMENTS AT US FOREST
SERVICE EXPERIMENTAL FORESTS RELATIVE
TO PROPOSED NUTRIENT CRITERIA
- 16:45 **Munn, Mark; Konrad, Christopher; Miller, Matthew**
THE USE OF CONTINUOUS WATER QUALITY
SENSORS FOR ASSESSING TEMPORAL
VARIABILITY IN LARGE-SCALE SYNOPTIC
STUDIES

S08: SS: Accounting for Variability

Chair(s): Camille Flinders Doug McLaughlin
(cflinders@ncasi.org)

Location: 103DE

- 15:30 **Zeglin, Lydia; Cooper, Scott; Utz, Ryan; Ardon-Sayao,
Marcelo; Bixby, Rebecca; Burdett, Aysha; Dodds,
Walter; Griffiths, Natalie A.; Harms, Tamara; Johnson,
Laura; Johnson, Sherri; Jones, Jeremy; Kominoski,
John; McDowell, William H.; Rosemond, Amy D. ;
Trentman, Matt; Follstad Shah, Jennifer; Van Horn,
David; Ward, Amy**
SYNTHESIS OF STREAM ECOSYSTEM
RESPONSES TO NUTRIENT ENRICHMENT AT
MULTIPLE TROPHIC LEVELS
- 15:45 **Miltner, Robert**
CHOOSING A MODEL FOR MANAGING
NUTRIENTS IN RUNNING WATERS: FORWARD
SELECTION OR BACKWARDS ELIMINATION?
- 16:00 **McLaughlin, Douglas**
THE YES, NO, AND MAYBE OF DATA-DRIVEN
WATER RESOURCES MANAGEMENT DECISIONS:
LESSONS FROM NUMERIC CRITERIA
DEVELOPMENT AND USE
- 16:15 **Wooten, Matthew; Hawley, Robert ; MacMannis,
Katherine ; Fet, Elizabeth; Korth, Nora**
DATA DRIVEN STORM WATER MANAGEMENT
FOR STREAM INTEGRITY: AN IMPLEMENTATION
TOOL AND STRATEGY



UNIVERSITY OF WISCONSIN-MADISON



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TUESDAY, MAY 19 ORALS

T06: Invasive Species

Chair(s): Donna Kashien, Eric Benbow

Location: 101A

- 10:30 **Heinrich, Kaleb; Baxter, Colden**
OF OLIVES AND CARP: INTERACTIVE EFFECTS OF TWO INVADERS ON LINKED STREAM-RIPARIAN FOOD WEBS
- 10:45 **McNeish, Rachel E.; Benbow, M. Eric; McEwan, Ryan W.**
REMOVAL OF THE INVASIVE SHRUB, LONICERA MAACKII, FROM RIPARIAN FORESTS INFLUENCES HEADWATER STREAM BIOTA AND ECOSYSTEM FUNCTION
- 11:00 **Diesburg, Kristen M.; Sullivan, S. Mazeika P.**
STREAM ECOSYSTEM RESPONSES TO THE TERRESTRIAL INSECT INVADER, HEMLOCK WOOLLY ADELGID
- 11:15 **Milanovich, Joseph; Barrett, Kyle; Crawford, John**
IS BIGGER ALWAYS BETTER? TADPOLES GROW LARGER AND FASTER, BUT WITH LOWER SURVIVAL WHEN RAISED WITH AN INVASIVE PLANT
- 11:30 **Greene, Robin**
DOES SPECIES MATTER? COMPARING THE EFFECTS OF INTRODUCED AND NATIVE TADPOLES ON AQUATIC ECOSYSTEM FUNCTION
- 11:45 **Shupryt, Michael; Ferry, Maureen**
IMPACTS OF NEW ZEALAND MUDSNAILS (POTAMOPYGRUS ANTIPODARUM) ON ECOSYSTEM METABOLISM IN A COLD WATER STREAM IN WISCONSIN, USA.

T14: Ecology of Fish and Other Aquatic Vertebrates

Chair(s): Carl Ruetz, Colden Baxter

Location: 101A

- 13:30 **Pennock, Casey; Gido, Keith**
DENSITY DEPENDENCE OF HERBIVOROUS FISH IN STREAM MESOCOSMS
- 13:45 **Gido, Keith; Pennock, Casey; Dodds, Walter**
SCALING ECOSYSTEM RATES IN STREAM MESOCOSMS ALONG A GRADIENT OF CONSUMER DENSITIES

- 14:00 **Lisi, Peter; McIntyre, Dr. Peter; Hogan, Derek; Blum, Michael; Gilliam, Jim**
LIFE-HISTORY RESPONSES OF AMPHIDROMOUS FISH TO HYDROLOGIC VARIATION AMONG HAWAIIAN STREAMS
- 14:15 **Kuzniar, Zach; VanKirk, Rob; Snyder, Eric; Luttenton, Mark**
ADULT RAINBOW TROUT HABITAT SELECTION IN THE HENRY'S FORK OF THE SNAKE RIVER, IDAHO
- 14:30 **Matthys, Tony; Huckins, Casey**
IS IT WORKING? USING FISH MOVEMENT TO ASSESS EFFECTS OF SMALL SCALE FISH HABITAT RESTORATION
- 14:45 **Walker, Richard; Walters, Annika**
SHIFTS IN FISH POPULATION DYNAMICS RELATED TO ENERGY DEVELOPMENT AND HYDROLOGY IN HEADWATER STREAMS OF THE WYOMING RANGE
- 15:30 **Williams, Meghan; Schrank, Candy; Murphy, Elizabeth; McCann, Pat; Anderson, Henry**
FISH FAT FACTS: OMEGA-3 FATTY ACIDS IN SPORT FISH FROM THE GREAT LAKES BASIN
- 15:45 **Hedden, Skyler; Gido, Keith**
HABITAT COMPLEMENTARITY OF INTRODUCED FLATHEAD CATFISH (PYLODICTIS OLIVARIS) AND THEIR POTENTIAL IMPACT ON NATIVE FISHES IN THE UPPER GILA RIVER BASIN, NM.
- 16:00 **Richardson, Bradley; Flinn, Michael**
OVERLAP IN THE DIETS OF FOUR SYMPATRIC GAR SPECIES OF WESTERN KENTUCKY
- 16:15 **Marques, Piata; Takahashi, Talita; Warbanski, Misha; Phillip, Dawn; El-Sabaawi, Rana; Frauendorf, Therese C.**
POPULATION AND INDIVIDUAL INTRASPECIFIC VARIATION IN TRINIDADIAN GUPPIES
- 16:30 **Blumenshine, Steve ; Spaulding, Taylor; Pearson, James; Portz, Don**
JUVENILE CHINOOK SALMON GROWTH AND DIET PATTERNS IN MAINSTEM HABITATS WITHIN THE SAN JOAQUIN RIVER RESTORATION PROGRAM
- 16:45 **Denny, Lytle; Baxter, Colden**
A HIERARCHICAL INVESTIGATION OF FACTORS INFLUENCING THE SPATIAL ECOLOGY OF JUVENILE CHINOOK SALMON IN A PACIFIC NORTHWEST RIVERSCAPE.

S09: SS: Dynamics of Carbon

Chair(s): Zhengzhen Zhou, Laodong Guo
(zhou9@uwm.edu)

Location: 101B

10:30 **McKnight, Diane; Gabor, Rachel; Burns, Margaret ; Barnard, Holly**
FROM THE HILLSLOPE TO THE STREAM: RAPID TRANSFORMATION OF DISSOLVED ORGANIC MATTER QUALITY IN HEADWATER REACHES OF A MOUNTAIN CATCHMENT

11:00 **Slaveykova, Vera; Dranguet, Perrine; Le Faucheur, Séverine ; Cosio, Claudia**
HG SPECIATION AND PERIPHYTON COMPOSITION MATTER IN HG ACCUMULATION TO PERIPHYTIC COMMUNITIES OF CONTAMINATED RIVER

11:15 **Golub, Malgorzata; Desai, Ankur R.; Remucal, Christy K.; McKinley, Galen A.; Stanley, Emily**
THE EFFECT OF RANDOM PARAMETER ERRORS ON PREDICTABILITY OF LONG-TERM CHANGE IN FRESHWATER PCO₂ CALCULATED FROM THERMODYNAMIC EQUILIBRIA

11:30 **Jiang, Helong**
UTILIZATION AND ENVIRONMENTAL IMPACT OF ORGANIC CARBON FROM CYANOBACTERIAL BLOOM BIOMASS IN A EUTROPHIC LAKE

11:45 **Cuhel, Russell; Aguilar, Carmen**
CLIMACTIC CHANGE IN LAKE MICHIGAN: BIG EVENTS, BASIN-WIDE IMPACT

13:30 **Zhou, Zhengzhen; Guo, Laodong**
VARIATIONS IN COMPOSITION AND SIZE OF DISSOLVED ORGANIC MATTER ACROSS THE RIVER-LAKE INTERFACE IN SOUTHWEST LAKE MICHIGAN

13:45 **DeVilbiss, Stephen; Zhou, Zhengzhen; Klump, Val; Guo, Laodong**
CHARACTERIZATION OF BULK AND CHROMOPHORIC DISSOLVED ORGANIC MATTER IN GREEN BAY, LAKE MICHIGAN

14:00 **Kelso, Julie; Epstein, Dave; Baker, Michelle**
CHARACTERIZATION OF RIVERINE ORGANIC MATTER IN AN URBAN LANDSCAPE

14:15 **Guo, Laodong ; Zhou, Zhengzhen; Minor, Elizabeth**
CHARACTERIZATION OF DISSOLVED ORGANIC MATTER IN THE LAURENTIAN GREAT LAKES USING FLUORESCENCE EEM AND PARAFAC TECHNIQUES

14:30 **Loken, Luke; Crawford, John ; Casson, Nora; Butitta, Vincent; Stanley, Emily**
SPATIAL VARIABILITY IN A EUTROPHIC LAKE DURING FALL TURNOVER

14:45 **Rodriguez-Cardona, Bianca; McDowell, William H.**
INFLUENCES OF DOC ON NITRATE UPTAKE IN SUBURBAN STREAMS

15:30 **Zhang, Yixin; Xiang, Hongyong**
TWO SIDES OF CROSS-ECOSYSTEM SUBSIDY FLUX IN AQUATIC AND TERRESTRIAL HABITATS

15:45 **Lin, Peng; Klump, Val; Guo, Laodong**
CHEMICAL SPECIATION OF PHOSPHORUS IN THE WATER COLUMN AND SEDIMENT IN GREEN BAY

16:00 **Aguilar, Carmen; Cuhel, Russell**
FROM THE BENTHOS, BOTTOM-UP TO PHYTOPLANKTON: DECOMPOSITION HAS BEEN TRUMPED BY EXCRETION OF N AND P IN MODERN LAKE MICHIGAN

16:15 **Drummond, Jen; Wright-Stow, Aslan; Franklin, Paul; Quinn, John; Packman, Aaron**
TRANSPORT DYNAMICS OF DISSOLVED AND PARTICULATE NUTRIENTS IN RESPONSE TO WOOD ADDITIONS WITHIN AN AGRICULTURALLY IMPACTED STREAM

16:30 **Waples, James; Klump, Val**
WHAT IS FUELING THE "RING OF FIRE"?

T09: Conservation and Restoration

Chair(s): Peter Levi

Location: 101CD

10:30 **Miller, Michael**
AN ASSESSMENT OF BARRIERS TO FISH PASSAGE IN STREAMS AND RIVERS OF THE UPPER MIDWEST U.S. CAUSED BY ROADWAY CULVERTS AND BRIDGES

10:45 **Moody, Allison; Neeson, Thomas; Guyette, Margaret; Diebel, Matthew; Herbert, Matthew; Khoury, Mary; Yacobson, Eugene; Doran, Patrick; Ferris, Michael; O'Hanley, Jesse; McIntyre, Dr. Peter**
RULES OF THUMB FOR PRIORITIZING BARRIER REMOVALS EMERGING FROM COMPREHENSIVE ANALYSIS OF GREAT LAKES TRIBUTARIES

- 11:00 **Neeson, Thomas; Moody, Allison; Guyette, Margaret; Diebel, Matthew; Herbert, Matthew; Khoury, Mary; Yacobson, Eugene; Doran, Patrick; Ferris, Michael; O’Hanley, Jesse; McIntyre, Dr. Peter**
PRIORITIZING BARRIER REMOVALS TO RESTORE NATIVE FISH MIGRATIONS IN GREAT LAKES TRIBUTARIES
- 11:15 **Lambert, Timothy; Hinz Jr., Leon; Cao, Yong**
PRIORITIZING STREAMS FOR PROTECTION AND RESTORATION USING A HOUSE-NEIGHBORHOOD FRAMEWORK: A CASE STUDY IN COOK COUNTY, ILLINOIS
- 11:30 **Wright, Kristopher**
DOES SITE-SCALE STREAM RESTORATION MAKE A DIFFERENCE OVER TIME?
- 11:45 **Gerlock, Kimberly; Roark, Shaun; Lynch, Jeniffer**
THE USE OF BENTHIC INVERTEBRATE TOLERANCE VALUES IN COLORADO’S 2014 SEDIMENT GUIDANCE
- 13:30 **Morgan, Joseph; White, Jeffrey; Royer, Todd**
BIOGEOCHEMICAL FUNCTIONS MUST BE CONSIDERED INDIVIDUALLY WHEN EVALUATING STREAM RESTORATION OUTCOMES
- 13:45 **Fulgoni, Jessica; McLeran, Kerry; Whiles, Matt; Rantala, Heidi; Beattie, Alicia**
IMPACTS OF RESTORATION ON ECOSYSTEM PROCESSES IN MIDWESTERN STREAMS
- 14:00 **Drerup, Sam; Johnson, Kelly; Vis, Morgan**
STABLE ISOTOPE FOOD WEBS SUGGEST INCOMPLETE RECOVERY IN ACID MINE DRAINAGE REMEDIATED STREAMS
- 14:15 **Amerson, Byron; Poole, Geoffrey; O’Daniel, Scott; Lambert, Michael**
USE OF ANNUAL HYPORHEIC TEMPERATURES SIGNALS TO EVALUATE THE EFFECTS OF CHANNEL REALIGNMENT
- 14:30 **Levi, Peter S.; Macchiavelli, Sofia I.; McIntyre, Dr. Peter**
FROM CONCRETE CHANNELS TO RESTORED REACHES: EVALUATING THE ECOLOGICAL STATE OF RE-NATURALIZED STREAMS IN URBAN WATERSHEDS

S12: SS: Ozaukee Fish Passage Program

Chair(s): Matt Aho
(maho@co.ozaukee.wi.us)

Location: 101CD

- 15:30 **Struck, Andrew**
AQUATIC CONNECTIVITY AND HABITAT RESTORATION – FUTURE DIRECTIONS
- 15:45 **Nenn, Cheryl**
ADVANCING FISH PASSAGE IN THE MENOMONEE RIVER WATERSHED
- 16:00 **Buser, Dale**
LAKE MICHIGAN DIRECT DRAINAGE RAVINE STREAMS IN EASTERN WISCONSIN: REMARKABLE HABITAT IN FORGOTTEN PLACES
- 16:15 **Wentzel, Beth**
HABITAT ENHANCEMENT OF A LOW GRADIENT MIDWESTERN STREAM
- 16:30 **Kroening, Kristina**
TRACKING AQUATIC CONNECTIVITY AND HABITAT RESTORATION IMPROVEMENTS THROUGH FISH AND WILDLIFE MONITORING

S10: SS: Quantifying Ecological Traits

Chair(s): Sonja Jähnig, N. LeRoy Poff
(sonja.jaehnig@igb-berlin.de)

Location: 102B

- 10:30 **Jähnig, Sonja C.; Poff, LeRoy**
QUANTIFYING ECOLOGICAL TRAITS TO PREDICT SPECIES, COMMUNITY AND ECOSYSTEM RESPONSES TO CHANGING ENVIRONMENTS
- 10:45 **Yetter, Susan**
RESPONSES OF RIVERINE MACROINVERTEBRATE COMMUNITIES TO ANTHROPOGENIC DISTURBANCE: IMPLICATIONS FOR BIOASSESSMENTS AND TRAITS-BASED MONITORING
- 11:00 **Boersma, Kate; Siepielski, Adam**
ENVIRONMENTAL DRIVERS OF TRAIT VARIATION IN DAMSELFLIES
- 11:15 **Vadeboncoeur, Yvonne; Rooney, Thomas ; Lodge, David**
REINTEGRATING THE AUTOTROPHIC BASE OF LAKES: FUNCTIONAL CONSEQUENCES OF CONTRASTING RESPONSES OF PHYTOPLANKTON AND PERIPHYTON COMMUNITY STRUCTURE TO FERTILIZATION

- 11:30 **Short, Terry; Hornberger, Michelle**
TRAIT CHARACTERISTICS AS DETERMINANTS OF METAL EXPOSURE AND UPTAKE IN STREAM INVERTEBRATES
- 11:45 **Pardo, Isabel; Garcia, Liliana**
WATER SCARCITY AND FLOW REDUCTION: UNFORESEEN INDUCED ANOXIA AND HYPOXIA EFFECTS ON STREAM INVERTEBRATES
- 13:30 **Shah, Alisha; Ghalambor, Cameron**
USING THERMAL TOLERANCE TRAITS TO PREDICT THE RESPONSE OF AQUATIC INSECTS TO WARMING: IS THERE GEOGRAPHIC VARIATION?
- 13:45 **Füreder, Leopold**
SPECIES TRAITS COMPOSITION AND VARIABILITY INDICATE ENVIRONMENTAL CONDITIONS AND CHANGE IN ALPINE RUNNING WATERS
- 14:00 **Gill, Brian; Kondratieff, Boris; Encalada, Andrea; Ghalambor, Cameron; Simmons, Mark; Funk, Chris; Poff, LeRoy**
MEASURING ELEVATION RANGE SIZES TO TEST THE CLIMATE VARIABILITY HYPOTHESIS AND ASSESS LATITUDINAL DIFFERENCES IN SPECIES VULNERABILITY TO CLIMATE CHANGE
- 14:15 **Atkinson, Carla L.; Encalada, Andrea; Flecker, Alexander; Thomas, Steven**
INSECT DIET AND STOICHIOMETRY ALONG A TROPICAL ELEVATION GRADIENT
- 14:30 **Li, Fengqing; Tonkin, Jonothan; Haase, Peter**
DISPERSAL CAPACITY AND BROAD-SCALE LANDSCAPE STRUCTURE SHAPE BENTHIC INVERTEBRATE COMMUNITIES ALONG STREAM NETWORKS
- 14:45 **Gerisch, Michael; Feld, Christian; Hering, Daniel; Jähnig, Sonja C.; Tockner, Klement**
BEYOND SPECIES – APPLYING AN ECOSYSTEM TRAIT APPROACH IN BIODIVERSITY RESEARCH AND FRESHWATER CONSERVATION

T15: Disturbance

Chair(s): Claire Ruffing, Allison Roy

Location: 102B

- 15:30 **Vander Vorste, Ross**
THE HYPORHEIC ZONE AS A PRIMARY SOURCE OF RESILIENCE FOR INVERTEBRATE COMMUNITIES IN INTERMITTENT ALLUVIAL RIVERS: EVIDENCE FROM FIELD AND LABORATORY EXPERIMENTS
- 15:45 **Davis, Emily**
WILDFIRE EFFECTS ON STREAM METABOLISM ACROSS GRADIENTS OF FIRE SEVERITY, WATERSHED GEOMORPHOLOGY, AND SPATIAL SCALE
- 16:00 **Garcia, Liliana; Pardo, Isabel**
DECLINING WATER AVAILABILITY INFLUENCES STREAM ECOSYSTEM COMPLEXITY
- 16:15 **DeLorme, Andre; Wieland, Louis**
THE RESPONSE OF MUSSEL POPULATIONS TO THE ADDITION OF SALINE WATER FROM A CLOSED BASIN LAKE INTO THE SHEYENNE RIVER OF NORTH DAKOTA
- 16:30 **Carmignani, Jason; Roy, Allison**
DO ANNUAL WINTER LAKE DRAWDOWNS ALTER THE PHYSICAL HABITAT STRUCTURE AND COMPLEXITY OF SHALLOW LITTORAL ZONES?
- 16:45 **Standen, Katherine; Chambers, Patricia; Culp, Joseph**
ARROWHEAD (SAGITTARIA CUNEATA) AS A BIOINDICATOR OF NITROGEN AND PHOSPHORUS FOR PRAIRIE STREAMS

T10: Landuse and Non-Point source Impacts

Chair(s): Jacques Finlay

Location: 102C

- 10:30 **Sena, Kenton; Barton, Chris; Angel, Patrick; Agouridis, Carmen; Warner, Richard**
EXPERIMENTAL FORESTRY RECLAMATION APPROACH PLOTS SHOW MARKED HYDROCHEMICAL IMPROVEMENT AFTER NINE GROWING SEASONS
- 10:45 **Feijó de Lima, Rafael; F. Silva-Júnior, Eduardo; Lisboa, Leonardo Kleba; Heatherly, Thomas; Tromboni, Flavia; Zandona, Eugenia; Moulton, Timothy; Thomas, Steven**
DOWNSTREAM EFFECTS OF ABRUPT RIPARIAN CHANGES IN STREAMS IN THE ATLANTIC RAINFOREST OF BRAZIL

- 11:00 **Johnson, Sherri; Ashkenas, Linda; Li, Judy; Argerich, Alba; Sobota, Janel**
TESTING OUR UNDERSTANDING OF BOTTOM UP FOOD WEB INFLUENCES: RIPARIAN HARVEST, INCREASED LIGHT, BUT LIMITED RESPONSES OF PRIMARY PRODUCERS AND MACROINVERTEBRATES
- 11:15 **Kroll, Stefanie; Horwitz, Richard; Keller, David; Minerovic, Alison ; Jackson, John**
MULTIPLE INDICATOR ANALYSIS OF STREAMS THROUGHOUT THE DELAWARE RIVER WATERSHED
- 11:30 **Henderson, Nicole; Christian, Alan ; Burke, Deirdre**
SPATIAL AND TEMPORAL VARIATION IN STREAM SEDIMENT MICROBIAL COMMUNITIES IN AN URBAN COASTAL NORTHEASTERN WATERSHED
- 11:45 **Barrons, Howard; Reisinger, Alexander J.; Tank, Jennifer L.; Tieg, Scott**
THE CONTRIBUTION OF FISH EXCRETION TO NUTRIENT CYCLING IN STREAMS ACROSS A LAND-USE GRADIENT
- 13:30 **F. Silva-Júnior, Eduardo; Silva-Araújo, Monalisa; Tromboni, Flavia; Feijó de Lima, Rafael; Lourenço-Amorim, Christine; Neres-Lima, Vinicius; Thomas, Steven; Zandona, Eugenia; Moulton, Timothy**
LEAF DECOMPOSITION AND SECONDARY PRODUCTION AS INDICATORS OF LAND-COVER CHANGE IN TROPICAL RIVERS
- 13:45 **Szafraniec, Mary**
MITIGATING LEGACY AND FUTURE NUTRIENT LOADS AT THE LANDSCAPE AND WATERBODY SCALE USING GOOD QUALITY CARBON AS A TOOL
- 14:00 **Boardman, Evelyn; Finlay, Jacques**
THE EFFECTS OF LAND COVER AND CLIMATE ON NUTRIENT LOSS AND RETENTION IN HUMAN DOMINATED WATERSHEDS
- 14:15 **Thomas, Kathryn; Lazor, Renee; Chambers, Patricia; Yates, Adam**
LAND USE INTERACTIONS DRIVE SOUTHWESTERN ONTARIO STREAM NUTRIENT CONCENTRATIONS
- 14:30 **Regan, Claire; Yetter, Susan; Veith, Tamera; Collick, Amy; Brooks, Robert**
NUTRIENT/SEDIMENT RUNOFF AND ECOLOGICAL CONDITION: LINKING THE SWAT-VSA MODEL WITH EMPIRICAL MEASURES
- 14:45 **Price, Steven; Muncy, Brenee'; Bonner, Simon; Barton, Chris; Drayer, Andrea**
IMPACTS OF MOUNTAINTOP REMOVAL MINING AND VALLEY FILLS ON STREAM SALAMANDER OCCUPANCY, ABUNDANCE AND SPECIES RICHNESS
- 15:30 **Ogdahl, Mary; Steinman, Alan; Weinert, Maggie**
SEEKING CLARITY: HOW A PUBLIC/PRIVATE PARTNERSHIP INTENDS TO DRAMATICALLY IMPROVE CONDITIONS IN A HISTORICALLY HYPEREUTROPHIC LAKE
- 15:45 **Polaskey, Steven; Entekin, Sally**
AGRICULTURE AND NATURAL RESOURCE EXTRACTION INTERACT TO AFFECT DRIVERS OF LEAF DECOMPOSITION
- 16:00 **Morabowen, Andres; Rios-Touma, Blanca**
AGRICULTURAL LANDSCAPES AND EFFECTS OF PESTICIDES IN TROPICAL HIGHLY BIODIVERSE STREAMS OF THE ECUADORIAN CHOCO
- 16:15 **Rattan, Kim J.; Chambers, Patricia; Culp, Joseph; Yates, Adam**
NUTRIENT FRACTIONATION AND STREAM FLOW FROM AGRICULTURAL WATERSHEDS IN RELATION TO LANDUSE
- 16:30 **Henderson, Kate; Murdock, Justin; Lizotte, Jr., Richard; Locke, Martin**
DRIVERS OF ALGAL BIOMASS AND PRODUCTIVITY IN INTENSIVELY MANAGED AGRICULTURAL LAKES
- 16:45 **Royer, Todd; Fulgoni, Jessica; Madison, Andrew; Jacobson, Sirese**
NUTRIENT AND SEDIMENT RUNOFF FROM AGRICULTURAL WATERSHEDS: INSIGHTS FOR EFFECTIVE MANAGEMENT PRACTICES
- S11: SS: Biotic Response to Flow**
Chair(s): Jessica M. Orlofske, Wendy A. Monk (orlofske@uwp.edu)
Location: 102D
- 10:30 **Orlofske, Jessica; Monk, Wendy**
FLOWING INTO THE FUTURE: APPROACHES AND PERSPECTIVES TO GUIDE FLOW MANAGEMENT FOR SOCIETY AND THE ENVIRONMENT
- 10:45 **Webb, Angus; Stewardson, Michael; Miller, Kim; de Little, Siobhan**
SOMETHING OLD, SOMETHING NEW, SOMETHING BORROWED... BRINGING TOGETHER DIVERSE METHODS TO QUANTIFY FLOW-RESPONSE RELATIONSHIPS FOR ENVIRONMENTAL FLOW MANAGEMENT

- 11:00 **Grantham, Ted; Eng, Ken; Carlisle, Daren; Wolock, David**
PREDICTABILITY OF HYDROLOGIC INDICES: IMPLICATIONS FOR STREAMFLOW REGIME CHARACTERIZATION AND DEVELOPMENT OF REGIONAL ENVIRONMENTAL FLOW STANDARDS
- 11:15 **Kennen, Jonathan; Hain, Ernie; Caldwell, Peter; Nelson, Stacy; Sun, Ge; McNulty, Steve**
MODELING FISH SPECIES RESPONSE TO CHANGES IN WATER AVAILABILITY AND CLIMATE IN THE NORTH CAROLINA PIEDMONT, USA
- 11:30 **Bennett, Micah; Whiles, Matt; Whitedge, Gregory**
AN ASSEMBLAGE-LEVEL TRAIT MODEL PREDICTS POPULATION-LEVEL LIFE HISTORY VARIATION AND RESPONSE TO FLOW REGIME IN THREE STREAM FISHES
- 11:45 **Rieck, Leslie O.; Sullivan, S. Mazeika P.**
ASSOCIATIONS BETWEEN STREAM HYDROGEOMORPHOLOGY AND FISH ASSEMBLAGES IN AN URBAN LANDSCAPE
- 13:30 **Carlisle, Daren; May, Jason; Nelson, S. Mark**
RELATIVE INFLUENCE OF ALTERED FLOW AND WATER TEMPERATURE ON STREAM HEALTH IN SIERRA NEVADA STREAMS, CALIFORNIA
- 13:45 **Patrick, Christopher; Yuan, Lester**
BIOTIC RESPONSE TO FLOW ALTERATION IN MID-ATLANTIC STREAMS
- 14:00 **Wynne, Caroline; Sweeney, Niamh; Linnane, Suzanne**
CHARACTERIZING THE IMPACTS OF ALTERNATIVE FLOW REGIMES ON MULTIPLE BIOLOGICAL INDICATOR COMMUNITIES: CONGRUENCE, CORRELATION AND MANAGEMENT STRATEGY
- 14:15 **Gates, Kiza; Vaughn, Caryn C.; Julian, Jason P.**
INCORPORATING SPECIES TRAITS IN A GUILD APPROACH TO DEVELOP ENVIRONMENTAL FLOW RECOMMENDATIONS FOR FRESHWATER MUSSELS
- 14:30 **Barmuta, Leon A.; Hardie, Scott A.; Bobbi, Chris; Warfe, Danielle M.**
MACROINVERTEBRATES RESPONSES TO ANTECEDENT FLOWS: HYDRAULICS OR HYDROLOGY?
- 14:45 **Roy, Allison; Jane, Stephen; Finn, John; Hazelton, Peter; Randhir, Timothy; Richards, Todd**
LINKAGES BETWEEN STREAM FLOW, HABITAT, AND BIOTIC ASSEMBLAGES IN AN URBANIZED LARGE RIVER
- 15:30 **Greenwood, Michelle; Booker, Doug; Winterbourn, Mike; Smith, Brian**
THE INFLUENCE OF ANTECEDENT FLOW CONDITIONS ON AQUATIC INVERTEBRATE COMMUNITIES
- 15:45 **May, Jason; Carlisle, Daren; Brown, Larry R.; Mazor, Raphael D.; Stein, Eric; Rehn, Andrew C.**
ASSESSMENT OF MACROINVERTEBRATE TRAIT AFFINITIES ALONG A GRADIENT OF STREAMFLOW PERMANENCE IN THE XERIC REGION OF CALIFORNIA, USA
- 16:00 **O'Malley, Zoe; Orlofske, Jessica; Monk, Wendy; Curry, Allen**
USING ODONATE EXUVIAE TO DETERMINE POPULATION SEX RATIO AND SEXUAL DIMORPHISM IN BODY SIZE AT EMERGENCE
- 16:15 **Phillips, Iain; Hobson, Keith**
USING BLOOD HYDROGEN ISOTOPE $\delta^2\text{H}$ MEASUREMENTS OF LAKE STURGEON *_ACIPENSER FLUVESCENS_* FOR TRACKING MOVEMENTS AND MANAGEMENT.
- 16:30 **Bruckerhoff, Lindsey; Magoulick, Daniel**
MORPHOLOGICAL VARIATION IN *CAMPOSTOMA ANOMALUM* ACROSS HYDROLOGIC REGIMES.
- S08: SS: Accounting for Variability**
- Chair(s): Camille Flinders Doug McLaughlin
(cflinders@ncasi.org)
- Location: 102E
- 10:30 **Martin, David; Poff, LeRoy; Powell, Sue; Webb, Angus; Nichols, Susan**
TWO METHODS TO ESTIMATE THE IMPORTANCE OF RIVER MANAGEMENT CRITERIA IN A MULTI-CRITERIA DECISION ANALYSIS
- 10:45 **Smith, David; Snyder, Craig D.; Hitt, Nathaniel**
INCORPORATING MANAGEMENT RISK AND VALUES INTO NATURAL RESOURCE MONITORING DESIGNS
- 11:00 **Grapentine, Lee**
SITE-SPECIFIC BENCHMARKS TO REDUCE UNCERTAINTY DUE TO SPATIAL AND TEMPORAL VARIABILITY OF REFERENCE CONDITIONS IN THE ASSESSMENT AND MANAGEMENT OF BENTHIC COMMUNITIES
- 11:15 **Clements, William; Kotalik, Chris**
RESPONSES OF AQUATIC INSECTS TO MAJOR IONS ASSOCIATED WITH MOUNTAINTOP REMOVAL AND VALLEY FILL OPERATIONS

- 11:30 **Roark, Shaun; Lynch, Jeniffer; DeJong, Grant; Kovach, Amanda; Gensemer, Robert; Canton, Steve**
AN ANALYSIS OF REPLICATE
MACROINVERTEBRATE SAMPLES TO ASSESS
UNCERTAINTY IN MEASURES OF TAXON
ABSENCE IN WEST VIRGINIA STREAMS
- 11:45 **Timpano, Anthony; Schoenholtz, Stephen; Soucek, David; Zipper, Carl**
ACCOUNTING FOR TEMPORAL VARIABILITY
OF CONDUCTIVITY FOR EFFECTIVE
MANAGEMENT OF SALINITY AS A FRESHWATER
AQUATIC LIFE STRESSOR
- 13:30 **Katz, Rachel; Campbell-Grant, Evan; Runge, Mike; Hocking, Daniel; Letcher, Ben; Roy, Allison**
NOT ALL SCIENTIFIC UNCERTAINTIES ARE
CREATED EQUAL FOR LANDSCAPE SCALE
HEADWATER STREAM MANAGEMENT
- 13:45 **Helsel, Dennis**
OVERCOMING UNCERTAINTY WITH MODERN
STATISTICAL TESTS: WHAT YOU LEARNED IN
COLLEGE IS PROBABLY OBSOLETE
- 14:00 **Kaster, Jerry**
SUSTAINABILITY: OXYMORON OR
MEASURABLE METRIC?
- 14:15 **Munkittrick, K.R.; Arciszewski, T.J.; Kilgour, B.W.; Somers, K.; Barrett, T.J.**
FUTURE DIRECTIONS FOR USING NATURAL
VARIABILITY TO DEVELOP TRIGGERS FOR
DESIGNING AND ADAPTING ENVIRONMENTAL
MONITORING PROGRAMS

S01: SS: Freshwater Futures - Undergrads

Chair(s): Carla L. Atkinson, Zacchaeus Compson
(carlalatkinson@gmail.com)

Location: 102E

- 15:30 **Vaughn, Caryn C.**
HOW TO SAVE AN IMPERILED FAUNA IN AN
INCREASINGLY THREATENED LANDSCAPE:
FROM ENDANGERED SPECIES TO ECOSYSTEM
SERVICES
- 15:45 **Evans-White, Michelle**
OUR FRESHWATER FUTURES: INTEGRATING
ANIMALS AND ECOSYSTEM MODELS
- 16:00 **Freeman, Mary**
A BRIEF HISTORY OF STREAM FISH ECOLOGY
AND A SPECULATIVE LOOK FORWARD
- 16:15 **Flecker, Alexander; Capps, Krista**
OUR FRESHWATER FUTURE AND THE
IMPORTANCE OF FISH SPECIES FOR THE
FUNCTIONING OF STREAM ECOSYSTEMS

T11: Algae and Primary Production

Chair(s): Paula Furey, Steve Rier

Location: 103AB

- 10:30 **Bootsma, Harvey; Driscoll, Zac; Turschak, Benjamin; Wilcox, Erin**
FACTORS REGULATING INTERANNUAL
VARIABILITY OF CLADOPHORA ABUNDANCE IN
LAKE MICHIGAN
- 10:45 **Weirich, Chelsea A.; Miller, Todd**
A LOCAL-TO-GLOBAL-CHARACTERIZATION OF
CYANOTOXINS IN FRESHWATER LAKES
- 11:00 **Furey, Paula; Welter, Jill; Sander, Delorianne; Williamson, Tanner; Cross, Wyatt**
CHANGES IN N₂-FIXING ALGAL SPECIES
ASSEMBLAGES ACROSS A STREAM
TEMPERATURE GRADIENT: IMPLICATIONS OF
WARMING FOR SPECIES COMPOSITION AND
ECOSYSTEM FUNCTION
- 11:15 **Ballantyne, Ford; Rueegg, Janine; Song, Chao; Chaloner, Dominic; Lamberti, Gary**
ESTIMATING SALMON ENRICHMENT AND
DISTURBANCE ON PERIPHYTON OVER THE
COURSE OF A RUN USING COUPLED DIN,
PERIPHYTON N, AND CHLOROPHYLL A
- 11:30 **Wehr, John; Truhn, Kam; Perrone, Alissa**
SPECIES RICHNESS OF DIATOMS AND SOFT-
BODIED ALGAE IN STREAMS WITHIN A LAND-
USE MOSAIC IN SOUTHERN NY STATE
- 11:45 **Bartlett, Sarah ; Weirich, Chelsea ; Miller, Todd**
TEMPORAL DYNAMICS OF TOXIC
CYANOBACTERIAL PEPTIDES IN A EUTROPHIC
LAKE
- 13:30 **Lee, Sylvia; Rosi-Marshall, Emma ; Paspalof, Alexis; Kelly, John; Kaushal, Sujay**
EFFECTS OF CONTAMINANTS ON STREAM
BIOFILMS: AMPHETAMINE, ANTIHISTAMINE,
AND SALT
- 13:45 **Bratt, Anika; Finlay, Jacques; Welter, Jill; Vculek, Bree; Sarbacker, Kerrick**
CO-LIMITATION BY N AND P CHARACTERIZES
ALGAL COMMUNITIES ACROSS LAND USE AND
NUTRIENT AVAILABILITY
- 14:00 **Rier, Steven; Kinek, Keith; Hay, Sarah Francoeur, Steven**
PATTERNS OF POLYPHOSPHATE STORAGE
IN STREAM BIOFILMS IN RESPONSE TO
PHOSPHORUS STRESS
- 14:15 **Konrad, Christopher; Munn, Mark**
USING SEASONAL DATA ON NUTRIENTS AND
ALGAL BIOMASS TO INFORM THE DESIGN
OF MORE EFFECTIVE AND EFFICIENT WATER
QUALITY MONITORING

- 14:30 **Zheng, Lei; Paul, Michael; Lincoln, Ann**
DIRECT AND INDIRECT EFFECT OF
EUTROPHICATION ON LAKE ECOSYSTEMS:
SUPPORT FOR NUTRIENT CRITERIA
DEVELOPMENT
- 14:45 **Lin, Shengpan; Qi, Jianguo; Jones, John; Stevenson, Jan**
ESTIMATION OF INLAND LAKE CHLOROPHYLL
A BASED ON LANDSAT TM/ETM+ AND BOOSTED
REGRESSION TREES (BRT)
- 15:00 **Bouma-Gregson, Keith; Kudela, Raphael; Power, Mary**
ENVIRONMENTAL DRIVERS OF BENTHIC
CYANOBACTERIAL DISTRIBUTION AND TOXIN
PRODUCTION IN A RIVER NETWORK

T12: Bioassessment

Chair(s): Sarah Whorley, Ryan Hill, Jan Ciborowski

Location: 103C

- 10:30 **Waite, Ian; Schmidt, Travis; Munn, Mark; VanMetre, Pete**
UNDERSTANDING AGRICULTURAL LAND
USE DISTURBANCE THROUGH A SERIES OF
MODELS: LANDSCAPE TO WATER QUALITY TO
INVERTEBRATES.
- 10:45 **Kurtenbach, James**
DEVELOPMENT AND USE OF A PERCENT
MODEL AFFINITY FOR ASSESSMENT OF PUERTO
RICO STREAMS
- 11:00 **Mazor, Raphael D.; Engeln, Mark; Stein, Eric; Ode, Peter**
EFFECTIVE VISUALIZATIONS OF COMPLEX
BIOASSESSMENT INDICES BASED ON
PREDICTIVE MODELS
- 11:15 **Liu, Bo; Stevenson, Jan**
STRIVING FOR A BETTER MODEL TO ASSESS
LAKE BIOLOGICAL CONDITION: A COMPARISON
OF CART, RANDOM FOREST AND MULTIPLE
LINEAR REGRESSION
- 11:30 **Ciborowski, Jan; Kovalenko, Katya; Host, George; Howe, Robert; Reavie, Euan; Brown, Terry; Brady, Valerie; Danz, Nicholas; Niemi, Gerald; Cai, Meijun; Johnson, Lucinda**
DEVELOPING GREAT LAKES BIOINDICATORS
OF ENVIRONMENTAL CONDITION AND
RECOVERY FROM DEGRADATION WITH
REFERENCE TO WATERSHED BASED STRESS
- 11:45 **Hill, Ryan; Weber, Marc; Leibowitz, Scott; Olsen, Anthony**
MAPPING THE BIOLOGICAL CONDITION OF USA
RIVERS AND STREAMS
- 13:30 **Stevenson, Jan**
RECONSIDERING THE PROBLEM OF
DIATOM ASSESSMENT OF STREAMS IN
AGRICULTURALLY DOMINATED REGIONS
- 13:45 **Cantonati, Marco; Kelly, Martyn; Armanini, David; Lange-Bertalot, Horst; Angeli, Nicola; Demartini, Daniele; Dörflinger, Gerald**
DIATOM BIODIVERSITY IN MEDITERRANEAN
STREAMS AND ITS POTENTIAL FOR
ENVIRONMENTAL ASSESSMENTS: A CASE
STUDY FROM THE ISLAND OF CYPRUS
- 14:00 **Gillett, Nadia; Pan, Yangdong; Asarian, J. Eli; Kann, Jacob**
SPATIAL AND TEMPORAL VARIATION OF
PERIPHYTON ASSEMBLAGES AND ASSOCIATED
ENVIRONMENTAL CONDITIONS IN THE
KLAMATH RIVER (2004-2013), CALIFORNIA, USA
- 14:15 **Brua, Robert; Yates, Adam; Culp, Joseph**
NMR-BASED METABOLOMICS OF CRAYFISH AS
A BIOINDICATOR OF ECOSYSTEM HEALTH OF
STREAMS IN SOUTHERN MANITOBA
- 14:30 **Scudder Eikenberry, Barbara; Bell, Amanda; Templar, Hayley; Burns, Daniel**
COMPARISON OF BENTHOS AND PLANKTON
FOR SELECTED AOC AND NON-AOC RIVERS
AND HARBORS, WESTERN LAKE MICHIGAN
- 14:45 **Whorley, Sarah; Wehr, John**
STREAM WATER AND PERIPHYTON
CARBON AND NITROGEN STABLE ISOTOPES
INDICATE INSUFFICIENT PROTECTION FROM
AGRICULTURAL INFLUENCES
- 15:30 **Pappas, Sheena; Strachan, Stephanie; Shaw, Pat; Shrimpton, Lana**
BASELINE WATER QUALITY MONITORING IN
AN AREA OF SHALE GAS DEVELOPMENT, HORN
RIVER BASIN, BRITISH COLUMBIA
- 15:45 **Chesworth, Chris; Culp, Joseph; Chambers, Patricia; Brua, Robert; Yates, Adam**
CHANGES IN STREAM CONDITIONS DURING
A MUNICIPAL WASTEWATER RELEASE
AND ASSOCIATED EFFECTS ON STREAM
METABOLISM
- 16:00 **Roberts, Nathan; Anderson, Alyssa**
ANALYSIS OF CHIRONOMIDAE (INSECTA:
DIPTERA) DIVERSITY AND COMMUNITY
COMPOSITION IN BROWN COUNTY, SD
- 16:15 **Shanteau, Jennifer; DeJong, Grant; Lynch, Jeniffer**
ANALYSIS OF INCREASING TAXA TRENDS OF
LONG-TERM DATA COLLECTED IN MINING
IMPACTED STREAMS

16:30 **Strachan, Stephanie; Edwards, Morgan; Pappas, Sheena**
BENTHIC INVERTEBRATE ASSESSMENT OF THE FRASER RIVER BASIN OVER A 20 YEAR PERIOD (1994-2013) USING CABIN

T13: Population and Community Ecology

Chair(s): Rob Creed, Amy Rosemond

Location: 103DE

10:30 **Laws, Coridon**
UNDERSTANDING THE ROLE OF DIRECT CELL-TO-CELL INTERACTION AND MIXOTROPHY IN THE HARMFUL ALGA *PRYMNESIUM PARVUM*

10:45 **Griffiths, Ronald**
SEASONAL POPULATION DYNAMICS AND PRODUCTION OF THE PREDACIOUS CHLOROPERLID, *PLUMIPERLA DIVERSA*, IN A MOUNTAIN STREAM.

11:00 **Warbanski, Misha; Marques, Piata; Phillip, Dawn; El-Sabaawi, Rana; Frauendorf, Therese C.**
IMPLICATIONS OF GUPPY PHENOTYPE FOR BIO-CONTROL OF LARVAL MOSQUITOES

11:15 **Murphy, Mason; Price, Steven; Haag, Wendell; Weisrock, David**
ASSESSING CONGRUENCY OF POPULATION STRUCTURE AND GENE FLOW BETWEEN FRESHWATER MUSSELS AND THEIR HOSTS: A GENOMIC APPROACH

11:30 **Ishiyama, Nobuo; Sueyoshi, Masanao; Nakamura, Futoshi**
HISTORICAL CHANGE IN POPULATION CONNECTIVITY OF THE NINESPINE STICKLEBACK IN AN AGRICULTURAL LANDSCAPE

11:45 **Holland, Angela; Hellgren, Eric; Nielsen, Clayton; Schauber, Eric**
RIVER OTTER OCCUPANCY IN ILLINOIS STREAM SYSTEMS AS A FUNCTION OF THE SEMI-AQUATIC MAMMAL COMMUNITY

13:30 **Larson, Courtney; Weatherbee, Courtney; Pechal, Jennifer L.; Gerig, Brandon; Lamberti, Gary; Benbow, M. Eric**
SALMON CARRION DECOMPOSITION INFLUENCES HEADWATER STREAM COMMUNITIES OVER TIME

13:45 **Venarsky, Michael; Walters, David; Herdrich, Adam; Winkelman, Dana; Livers, Bridget; Wohl, Ellen; Hall, Robert O.; Poole, Geoffrey**
THE LEGACY OF LOGJAM LOSS ON BENTHIC MACROINVERTEBRATE BIOMASS AND INSECT EMERGENCE IN MOUNTAIN STREAMS

14:00 **Belaidi, Nouria; Taleb, Amina**
EFFECTS OF A POLLUTED RESERVOIR ON THE DISTRIBUTION OF THE BENTHIC AND INTERSTITIAL CRUSTACEAN COMMUNITY (NORD-WEST ALGERIA)

14:15 **Trottier, Gabrielle; Turgeon, Katrine; Nozais, Christian; Solomon, Chris; Gregory-Eaves, Irene**
EFFECTS OF ANTHROPOGENIC DISTURBANCES ON AQUATIC MACROINVERTEBRATES - DEPOSITION AND THERMAL REGIMES, OR THE IMPORTANCE OF APPROPRIATE SITES SELECTION

14:30 **Smith, Chelsea; McCormick, Paul V.; Covich, Alan; Golladay, Stephen**
RECOVERY OF AQUATIC MACROINVERTEBRATE ASSEMBLAGES FOLLOWING STREAM DRYING IN SOUTHWEST GEORGIA, USA

14:45 **Bogan, Michael; Leidy, Robert; Carlson, Stephanie**
CYCLES OF BOOM AND BUST IN COASTAL CALIFORNIA INTERMITTENT STREAMS

15:30 **DeJong, Grant**
DIEL VARIABILITY IN PREY CAPTURE BY TWO SPECIES OF UTRICULARIA (LENTIBULARIACEAE) FROM SOUTH CAROLINA, USA

15:45 **Schilling, Emily**
PREDATION STRUCTURED ODONATA ASSEMBLAGES IN FISHLESS, SALMONID, AND CENTRARCHID PONDS IN MAINE

16:00 **Kirk, Andrew; McGarvey, Daniel**
USING BIOMASS SPECTRA TO QUANTIFY FISH AND MACROINVERTEBRATE COMMUNITY STRUCTURE IN SOUTHERN WEST VIRGINIA STREAMS

16:15 **Pitcher, Kristopher; Soluk, Daniel**
SHOULD THEY STAY OR SHOULD THEY GO? THE INTERACTIVE INFLUENCE OF HABITAT COMPLEXITY AND CONNECTIVITY ON PREY CONSUMPTION AND COMPETITION IN DRAGONFLY LARVAE AND FISH.

16:30 **Bush, Mike**
ECOTONE PROXIMITY AND ITS INFLUENCE ON PREDATION RISK IN A DYNAMIC WETLAND

16:45 **Brown, Bryan; Creed, Robert; Skelton, James**
EMBEDDED METACOMMUNITIES IN THE CRAYFISH-BRANCHIOBELLIDAN CLEANING SYMBIOSIS: A MULTI-SCALE FRAMEWORK FOR UNDERSTANDING SYMBIONT DIVERSITY

WEDNESDAY, MAY 20 ORALS

S13: SS: Didymosphenia Germinata

Chair(s): Lisa Kunza, Carole-Anne Gillis
(lisa.kunza@sdsmt.edu)

Location: 101A

10:30 **Kunza, Lisa; Gillis, Carole-Anne**
INTRODUCTION: TRANSITIONS IN
UNDERSTANDING DIDYMO SPHENIA GEMINATA

10:45 **Gretz, Michael**
DIDYMO: IT'S ALL ABOUT THE STALKS

11:00 **Pillsbury, Robert; Glas, Brenna**
CAN CHANGES IN THE VALVE MORPHOLOGY
OF DIDYMO SPHENIA GEMINATA AMONG
BLOOM POPULATIONS HELP EXPLAIN RECENT
INVASIONS?

11:15 **Shank, Matthew**
DIDYMO IN PINE CREEK, PENNSYLVANIA:
ENVIRONMENTAL FACTORS CONTROLLING
DISTRIBUTION AND PLANS FOR FUTURE
RESEARCH

11:30 **Murdock, Justin; Knorp, Natalie; Hix, Lucas**
MACROINVERTEBRATE STRUCTURAL
AND CONSUMPTION RESPONSES TO
DIDYMO SPHENIA GEMINATA MATS IN THE
UPPER TENNESSEE RIVER WATERSHED

11:45 **Gillis, Carole-Anne; Bergeron, Normand E.**
EXPLORING THE IMPACT OF DIDYMO SPHENIA
GEMINATA NUISANCE GROWTHS ON JUVENILE
ATLANTIC SALMON

T16: Urban Ecology

Chair(s): Sandra Clinton, Tim Hollein

Location: 101B

10:30 **McCormick, Amanda; Hoellein, Timothy; Hittie, Joshua; London, Maxwell; Kelly, John**
MICROPLASTIC IN URBAN STREAMS: SOURCE,
ABUNDANCE, AND SELECTION OF UNIQUE
BACTERIAL ASSEMBLAGES

10:45 **Kelly, John; Hoellein, Timothy; Mason, Sherri; McCormick, Amanda; London, Maxwell**
MICROPLASTIC PARTICLES ARE A NOVEL AND
MOBILE HABITAT FOR MICROORGANISMS IN
FRESHWATER ECOSYSTEMS

11:00 **Fisher, Jenny; Newton, Ryan; Dila, Deb; McLellan, Sandra**
URBAN MICROBIAL ECOLOGY OF THE
MILWAUKEE ESTUARY AND HARBOR

11:15 **Christel, Samuel; Corsi, Steve; Lenaker, Peter; Baldwin, Austin; Pellerin, Brian; Bergamaschi, Brian; McLellan, Sandra; Stanley, Emily**

DETECTING AND LOCATING SOURCES OF
SEWAGE CONTAMINATION IN SURFACE WATER
USING OPTICAL PROPERTIES OF WATER

11:30 **Chen, Yushun; Shrestha, Sagar; Herzog, Kathryn**
STREAM WATER QUALITY AND
MACROINVERTEBRATES CONDITION IN AN
URBANIZED WATERSHED OF THE LOWER
MISSISSIPPI RIVER BASIN

11:45 **Henderson, Sara; Clinton, Sandra**
THE RESPONSE IN MACROINVERTEBRATE
COMMUNITIES TO FLOOD DISTURBANCE IN
URBAN RESTORED SYSTEMS

T17: Lakes and Wetlands

Chair(s): Carmella Vizza

Location: 101CD

10:30 **Fluet-Chouinard, Etienne; McIntyre, Dr. Peter**
EVALUATING THREATS TO RAMSAR
WETLANDS: LOCAL REPORTING VERSUS
GLOBAL MAPPING

10:45 **Larson, James; Richardson, William; Evans, Mary Anne; Schaeffer, Jeff; Wynne, Timothy; Bartsch, Michelle; Bartsch, Lynn; Nelson, JC; Vallazza, Jon**
MEASURING SPATIAL VARIATION IN
ECOSYSTEM PROPERTIES USING A COMMON
CONSUMER APPROACH

11:00 **Vizza, Carmella; West, William; Jones, Stuart; Hart, Julia; Lamberti, Gary**
EFFECTS OF SUBSTRATE AVAILABILITY AND
INCREASED SALINITY ON METHANOGENESIS
IN PONDS OF THE COPPER RIVER DELTA,
ALASKA

11:15 **Nakano, Daisuke; Kobayashi, Takuya**
EFFECTS OF AN AERATION SYSTEM ON
VERTICAL DISTRIBUTION AND MIGRATION OF
ZOOPLANKTON IN A RESERVOIR.

11:30 **Deuschle, Deric; Urban, David**
THE EFFECTS OF LONG-TERM DRAINAGE ON
THE SAX ZIM BOG, NORTHEAST MINNESOTA

11:45 **Stauffer, Natalie**
SPATIAL AND TEMPORAL VARIABILITY IN
BENTHIC INVERTEBRATE ASSEMBLAGES IN
UPPER KLAMATH LAKE, OREGON

T15: Disturbance

Chair(s): Claire Ruffing, Allison Roy

Location: 102B

- 10:30 **Robinson, Chris; Ortlepp, Johannes; Scheurer, Thomas**
EXPERIMENTAL FLOWS INCREASE RESILIENCE OF A REGULATED RIVER TO CATASTROPHIC DISTURBANCE
- 10:45 **Finn, Debra; Hampel, Henrietta; Encalada, Andrea**
PERSISTENCE AND STABILITY OF PÁRAMO MACROINVERTEBRATE COMMUNITIES IN STREAMS WITH CONTRASTING NATURAL DISTURBANCE REGIMES
- 11:00 **Ruffing, Claire; Dodds, Walter; Veach, Allison; Rueegg, Janine; Trentman, Matt**
SPATIAL AND TEMPORAL RESPONSE PATTERNS OF ECOSYSTEM METABOLISM FOLLOWING A CHANNEL ALTERING FLOW EVENT IN PRAIRIE STREAMS
- 11:15 **Jackson, Breeanne K.; Sullivan, S. Mazeika P.**
TAKING A BROADER PERSPECTIVE: CATCHMENT-LEVEL WILDFIRE VARIABILITY AND CLIMATE DRIVE RIPARIAN SPIDER RESPONSES IN YOSEMITE NATIONAL PARK, CA
- 11:30 **Sanchez, Jose; Kelly, Sean; Ramírez, Alonso**
THE EFFECT OF URBANIZATION ON THE WEB SPINNING BEHAVIORS OF RIPARIAN ORB-WEAVING SPIDERS
- 11:45 **Barnum, Thomas; Williams, Meghan; Weller, Donald**
DECREASED TRAIT DIVERSITY OF MACROINVERTEBRATE COMMUNITIES WITH INCREASING IMPERVIOUS SURFACE COVER

S09: SS: Dynamics of Carbon

Chair(s): Zhengzhen Zhou, Laodong Guo (zhou9@uwm.edu)

Location: 102C

- 10:30 **Jiang, Xueyan; Liu, Qian; Sui, Juanjuan; Yu, Zhigang**
DISTRIBUTIONS AND FLUXES OF URANIUM IN THE LOWER REACHES OF THE YELLOW RIVER: ANTHROPOGENIC IMPACT (WATER-SEDIMENT REGULATION SCHEME)
- 10:45 **Fields-Sommers, Laura; Grundl, Timothy**
ASSESSING THE EFFECTS OF RIVERBANK INDUCEMENT ON GROUNDWATER QUALITY ON A SHALLOW AQUIFER IN SOUTHEASTERN WISCONSIN
- 11:00 **DelVecchia, Amanda G; Stanford, Jack A**
ANCIENT OUTGASSING AND MODERN FERMENTATION: DUAL SOURCES FOR A METHANE-DRIVEN HYPORHEIC FOOD WEB

- 11:15 **Coleman Wasik, Jill; Toner, Brandy; Engstrom, Daniel; Drevnick, Paul**
WHERE DOES THE SULFATE COME FROM: LINKING ORGANIC SULFUR SPECIATION IN PEATLANDS TO SULFATE RELEASE FOLLOWING DROUGHT
- 11:30 **Montenero, Michael; Waples, James**
MEASURING SEDIMENT LOADING AND RETENTION IN A LARGE URBAN HARBOR USING IODINE-131 IN TREATED SEWAGE EFFLUENT
- 11:45 **Klump, Val; LaBuhn, Shelby; Koopmans, Dirk; Bravo, Hector; Hamidi, Sajad; Waples, James**
IS INCREASING HYPOXIA IN OUR FUTURE? THE EVOLUTION OF GREEN BAY'S DEAD ZONES

T18: Invertebrate Ecology

Chair(s): Jerry Kaster, Will Bouchard, Heidi Rantala, Ashley Moerke

Location: 102DE

- 10:30 **Baumann, Karen; Scholl, Eric; Rantala, Heidi; Whiles, Matt**
MACROINVERTEBRATE RESPONSES TO CLIMATIC EXTREMES FOLLOWING A LEGACY OF STREAM HYDROLOGIC ALTERATION
- 10:45 **Nelson, Daniel; Benstead, Jonathan P. ; Hury, Alexander D; Cross, Wyatt; Hood, James; Johnson, Philip; Junker, James; Gislason, Gisli; Olafsson, Jon**
CONTRASTING RESPONSES OF BLACKFLY SPECIES (DIPTERA: SIMULIIDAE) TO EXPERIMENTAL STREAM WARMING
- 11:00 **Hertel, Samantha; Berg, Martin B.**
AQUATIC INSECT COMMUNITY STRUCTURE AND SECONDARY PRODUCTION IN SOUTHCENTRAL ALASKA STREAMS WITH CONTRASTING THERMAL AND HYDROLOGIC REGIMES
- 11:15 **Mazack, Jane; Vondracek, Bruce; Ferrington, Jr., Leonard**
GROUNDWATER INFLUENCE ON WINTER INVERTEBRATE COMMUNITIES IN SOUTHEASTERN MINNESOTA STREAMS
- 11:30 **Piggott, Jeremy; Townsend, Colin; Matthaei, Christoph**
CLIMATE WARMING AND AGRICULTURAL STRESSORS INTERACT TO DETERMINE STREAM MACROINVERTEBRATE COMMUNITY DYNAMICS
- 11:45 **Taleb, Amina; Belaidi, Nouria;**
HYPORHEIC COMMUNITY COMPOSITION IN A GRAVEL-BED HEADWATER STREAM OF NORTH-WEST ALGERIA: INFLUENCE OF HYDROLOGICAL EXCHANGE, SEDIMENT STRUCTURE AND PHYSICO-CHEMISTRY

T19: Land-Water Interfaces

Chair(s): Johanna Kraus

Location: 103AB

- 10:30 **Kaylor, Matthew ; Warren, Dana**
INFLUENCES OF RIPARIAN FOREST STAND DEVELOPMENT ON STREAM PERIPHYTON, INVERTEBRATE AND VERTEBRATE POPULATIONS IN CASCADE MOUNTAIN STREAMS, OR.
- 10:45 **Kraus, Johanna; Pomeranz, Justin; Todd, Andrew; Walters, David; Wanty, Richard; Schmidt, Travis**
AQUATIC POLLUTION INCREASES USE OF TERRESTRIAL PREY SUBSIDIES BY STREAM FISH
- 11:00 **Uno, Hiromi; Power, Mary**
SPATIAL HETEROGENEITY IN RIVER TEMPERATURE ASYNCHRONIZES AQUATIC INSECT EMERGENCE, AND PROLONGS THE FOOD SUPPLY TO PREDATORS
- 11:15 **Merkley, Steven**
VARYING PREY SUBSIDY QUALITY AFFECTS THE GROWTH RATE OF SUBSIDIZED TERRESTRIAL CONSUMERS
- 11:30 **Wensink, Stacey; Tieg, Scott**
SHORELINE HARDENING ALTERS THE STRUCTURE AND FUNCTION OF LAND-WATER INTERFACES
- 11:45 **Wesner, Jeff; Walters, David; Schmidt, Travis; Kraus, Johanna; Wanty, Richard; Stricker, Craig; Clements, William**
METAL CONCENTRATIONS DECLINE BY AN ORDER OF MAGNITUDE DURING METAMORPHOSIS IN THE MAYFLY (BAETIS TRICAUDATUS)

T12: Bioassessment

Chair(s): Sarah Whorley, Ryan Hill, Jan Ciborowski

Location: 103C

- 10:30 **Pyne, Matthew; Poff, LeRoy**
MODELING THE RESPONSE OF CLIMATE-SENSITIVE, AQUATIC INSECT TRAITS TO MULTIPLE ENVIRONMENTAL FACTORS IN THE WESTERN UNITED STATES USING A BAYESIAN PATH MODEL
- 10:45 **Petry, David; Colombo, Robert; Pederson, Charles; Laursen, Jeffrey**
EVALUATION OF AGENCY AND VOLUNTEER STREAM MONITORING PROTOCOLS USING MACROINVERTEBRATE ASSEMBLAGES

- 11:00 **Cuffney, Thomas; Kennen, Jonathan**
EFFECTS OF TAXONOMIC HARMONIZATION AND FIXED-COUNT SUBSAMPLING ON COMPARABILITY OF INVERTEBRATE DATA FROM MULTIPLE SOURCES
- 11:15 **Novodvorsky, Nicole; Bailey, John; Reynoldson, Trefor**
GEOGRAPHIC EXTENSION OF BENTHIC INVERTEBRATE RCA BIOASSESSMENTS: HOW FAR CAN WE GO?
- 11:30 **Elbrecht, Vasco; Leese, Florian**
CAN DNA BASED MONITORING OF MACROZOOBENTHOS DELIVER ABUNDANCE DATA? TESTING PRIMER BIAS AND BIOMASS - SEQUENCE RELATIONSHIPS WITH A NOVEL METABARCODING PROTOCOL

T13: Population and Community Ecology

Chair(s): Rob Creed, Amy Rosemond

Location: 103DE

- 10:30 **Tornwall, Brett; Skelton, James; Sokol, Eric; Brown, Bryan**
TRENDS IN STREAM BIODIVERSITY RESEARCH SINCE THE RIVER CONTINUUM CONCEPT
- 10:45 **Schuettenberg, Alexa**
LEAF LITTER SPECIES AFFECTS THE ACTIVE AQUATIC MICROBIAL COMMUNITY
- 11:00 **Pechal, Jennifer L.; Benbow, M. Eric**
INFLUENCE OF RESOURCE PULSES ON ECOLOGICAL NETWORKS: INSECTS, SALMON AND THEIR MICROBIOMES
- 11:15 **Demi, Lee; Benstead, Jonathan P. ; Rosemond, Amy D.; Maerz, John C.; Gulis, Vlad**
EXPERIMENTAL N AND P FERTILIZATION OF FIVE DETRITUS-BASED HEADWATER STREAMS REVEALS EFFECTS OF RESOURCE STOICHIOMETRY ON CONSUMER BIOMASS AND PRODUCTION
- 11:30 **Argerich, Alba; Penaluna, Brooke**
INTERACTIONS BETWEEN CONSUMERS AND STREAM FUNCTIONAL PROCESSES: A CASE STUDY FROM THE PACIFIC NORTHWEST

THURSDAY, MAY 21 ORALS

S14: SS: Asian Freshwater Futures

Chair(s): John Morse
(jmorse@clemson.edu)

Location: 101A

- 10:30 **Nair, Achuthan**
PRESENT STATUS AND FUTURE PROSPECTS OF FRESHWATER BIOLOGY RESEARCH IN SOUTH ASIAN COUNTRIES
- 10:45 **Yule, Catherine**
FRESHWATER RESEARCH IN MALAYSIA
- 11:00 **Wang, Yi-Kuang; Suen, Jian-Ping**
STREAM ECOLOGICAL RESEARCH OF TAIWAN: RETROSPECT AND PROSPECT
- 11:15 **Sangpradub, Narumon; Hanjavanit, Chutima**
STATUS AND TREND OF FRESHWATER BIOLOGY IN THAILAND
- 11:30 **Suk, Ho Young**
DISTRIBUTION AND GENETIC STRUCTURE OF FRESHWATER TELEOSTS IN THE KOREAN PENINSULA: INTERACTION BETWEEN HISTORICAL AND HUMAN-MEDIATED PROCESSES
- 11:45 **Li, Li; Wang, Yeyao; Liu, Tingliang; Liu, Lusan**
DEVELOPMENT OF MACROINVERTEBRATE INDEX OF BIOTIC INTEGRITY (M-IBI) FOR LARGE RIVER BIOASSESSMENT: A PILOT WORK IN SONGHUA RIVER, CHINA
- 13:30 **KIM, Dong Gun; Bae, Yeon Jae**
COLONIZATION SPEED AND PATTERN OF BENTHIC MACROINVERTEBRATE COMMUNITIES DURING THE EARLY SUCCESSIONAL PHASES IN TEMPERATE ASIA
- 13:45 **Wang, Beixin; Ding, Ning; Yang, Weifang**
RESPONSE OF FUNCTIONAL TRAITS AND DIVERSITY OF TROPICAL STREAM MACROINVERTEBRATES TO ENVIRONMENTAL VARIABLES IN XISHUANBANNA WATERSHED, YUNNAN CHINA
- 14:00 **Wang, Lizhu; Pan, Yangdong; Cao, Yong; Wang, Quanxi; Wang, Beixin; Zhang, Jie; Pang, Wanting; Deng, Guiping**
USING BENTHIC COMMUNITIES TO DETECT THE SHIFT OF HUMAN-NATURAL PARADIGM IN JIUJZHAIGOU NATIONAL PARK, CHINA

- 14:15 **Cao, Yong; Wang, Beixin; Zhang, Jie; Wang, Lizhu; Pan, Yangdong; Wang, Quanxi; Deng, Guiping**
CHANGES OF MACROINVERTEBRATE ASSEMBLAGES ACROSS LAKES AND STREAM SITES IN RELATION TO NATURAL ENVIRONMENT AND TOURISM PRESSURE IN JIUJZHAIGOU NATIONAL PARK, CHINA
- 14:30 **Tojo, Koji**
MOLECULAR PHYLOGEOGRAPHIC STUDIES OF FRESHWATER BENTHOS IN EAST ASIA, WITH SPECIAL REFERENCE TO THE COMPLEX FORMATION HISTORY OF THE JAPANESE ARCHIPELAGO
- 14:45 **Tojo, Koji; Saito, Rie**
BIOGEOGRAPHY OF THE ISONYCHIID MAYFLY ISONYCHIA JAPONICA WITH A WIDE DISTRIBUTION IN EAST ASIA, INFERRED FROM MOLECULAR PHYLOGENETIC ANALYSES (EPHEMEROPTERA, ISONYCHIIDAE)
- 15:00 **Bogatov, Viktor; Vshivkova, Tatyana; Khristoforova, Nadezhda**
OUR COMMON FRESHWATER FUTURE

T16: Urban Ecology

Chair(s): Sandra Clinton, Tim Hollein

Location: 101B

- 10:30 **Smith, Robert; Roy, Allison**
THE EFFECT OF DISPERSAL BARRIERS ON STREAM FISH AND INSECT ASSEMBLAGES IN URBAN LANDSCAPES
- 10:45 **Janke, Benjamin; Finlay, Jacques; Hobbie, Sarah**
DOES URBAN TREE CANOPY ENHANCE NUTRIENT EXPORT BY STORMWATER?
- 11:00 **Smucker, Nathan; Kuhn, Anne; Charpentier, Mike; Cruz-Quinones, Carlos; Elonen, Colleen; Hill, Brian; Lake, Jim; Serbst, Jonathan**
DEVELOPING ECOLOGICAL INDICATORS FOR NUTRIENTS AND URBAN IMPACTS TO STREAMS IN COASTAL WATERSHEDS
- 11:15 **Medupin, Cecilia**
LONG-TERM VARIATIONS IN WATER QUALITY IN AN URBAN RIVER IN THE UNITED KINGDOM
- 11:30 **Fork, Megan; Bernhardt, Emily; Heffernan, Jim; Urban, Dean**
PATTERNS OF STORMFLOW DISSOLVED ORGANIC MATTER CONCENTRATION, COMPOSITION, AND TIMING IN THREE SMALL URBAN STREAMS

11:45 **Blaszczak, Joanna; Steele, Meredith; Hobbie, Sarah; Badgley, Brian; Heffernan, Jim; Bernhardt, Emily; Groffman, Peter**
NITROUS OXIDE YIELDS FROM URBAN STORMWATER PONDS IN 8 US CITIES

S18: SS: Stream Macroinvertebrate Response to Disturbances in Neotropical Streams: Recent Advances and Future Directions

Chair(s): Carissa Ganong, Rebeca de Jesús
(carissa.ganong@gmail.com)

Location: 101B

13:30 **Covich, Alan; Crowl, Todd; Perez-Reyes, Omar**
EFFECTS OF DISTURBANCES ON UPSTREAM AND DOWNSTREAM MOVEMENTS: WHEN AND WHERE ARE DROUGHTS LIKELY TO HAVE THE MOST IMPACT ON NEOTROPICAL HEADWATER STREAMS?

13:45 **Rantala, Heidi; Rugenski, Amanda; Barnum, Thomas; Colon-Gaud, Checo; Múrrria, Cesc; Whiles, Matt**
LONG-TERM EFFECTS OF DISEASE-DRIVEN AMPHIBIAN DECLINES ON MACROINVERTEBRATE COMMUNITIES IN TROPICAL STREAMS

14:00 **Cauvy-Fraunié, Sophie**
LOW RESILIENCE OF TROPICAL RIVER BIOTA TO EXPERIMENTAL DECREASE IN GLACIER RUNOFF

14:15 **Snyder, Eric; Kynak, Tim; Krynak, Katherine; Lyons, Jane**
ECOLOGY AND MANAGEMENT OF NEOTROPICAL RIVERS: LESSONS FROM THE CLOUD FOREST IN ECUADOR

14:30 **Springer, Monika**
THE USE OF MACROINVERTEBRATES IN BIOMONITORING OF FRESHWATER HABITATS IN MESOAMERICA AND THE CARIBBEAN

14:45 **de Jesus Crespo, Rebeca; Pringle, Catherine**
MONITORING STREAM BIO-INTEGRITY USING MACROINVERTEBRATES IN A HIGH INTENSITY COFFEE-GROWING REGION: CONTRASTING AN INDEX BASED APPROACH WITH REFERENCE SITE COMPARISONS IN THE PIRRIS WATERSHED, COSTA RICA

15:30 **Kelly, Sean; Ramírez, Alonso**
SUBSIDIES FROM AQUATIC TO RIPARIAN CONSUMERS ALONG AN URBAN GRADIENT IN A TROPICAL WATERSHED – A STABLE ISOTOPE ANALYSIS

15:45 **Ganong, Carissa; Hidalgo Oconitrillo, Minor; Pringle, Catherine**
HOW TOLERANT ARE TROPICAL STREAM MACROINVERTEBRATES TO DROUGHT-DRIVEN ACIDIFICATION ASSOCIATED WITH CLIMATE CHANGE?

16:00 **Ramírez, Alonso**
DISTURBANCE AS A KEY FACTOR IN UNDERSTANDING MACROINVERTEBRATE ASSEMBLAGE DYNAMICS IN NEOTROPICAL STREAMS

S15: SS: Deconstructing Cumulative Effects

Chair(s): John L. Bailey, Keith Somers
(jbailey@laurentian.ca)

Location: 101CD

10:30 **Somers, K.; Jones, Chris; Bailey, John**
CUMULATIVE EFFECTS AND CUMULATIVE EFFECTS ASSESSMENT: ROLES FOR FRESHWATER SCIENTISTS

10:45 **Robinson, Wayne**
CHALLENGES IN A RETROSPECTIVE STRESSOR ANALYSES OF A LONG TERM SURVEILLANCE DATA SET

11:00 **Stribling, James**
USE OF WATERSHED-SCALE BIOLOGICAL MONITORING FOR RESTORATION PLANNING AND EVALUATION

11:15 **Flinders, Camille; Ragsdale, Renee; Arthurs, William ; Ikoma, Joan; Cook, Diana; Campbell, David; Messmer, Ron; Napack, Jan**
WATER QUALITY AND BIOTA IN FOUR MULTI-STRESSOR LOTIC SYSTEMS: PATTERNS FROM A MULTI-FACETED, LARGE-SCALE, LONG-TERM DATASET

11:30 **Yates, Adam; Armanini, David; Chambers, Patricia**
AD-HOC AND EX-POST DESIGNS FOR DISENTANGLING CUMULATIVE EFFECTS IN MIXED LAND USE LANDSCAPES

11:45 **Burdon, Francis; Räsänen, Katja; Jokela, Jukka; Eggen, Rik; Stamm, Christian**
ENVIRONMENTAL CONTEXT INFLUENCES INVERTEBRATE COMMUNITY RESPONSES TO ANTHROPOGENIC PERTURBATIONS IN TEMPERATE STREAMS

13:30 **Johnson, Richard; Angeler, David; McKie, Brendan; Sandin, Leonard; Hallstan, Simon**
DISENTANGLING MULTIPLE STRESSOR EFFECTS ON INVERTEBRATE ASSEMBLAGES OF BOREAL STREAMS

- 13:45 **Jones, Chris**
CUMULATIVE EFFECTS OF DEVELOPMENT ON NEAR-SHORE BENTHIC MACROINVERTEBRATE COMMUNITIES OF SOUTHERN PRECAMBRIAN SHIELD LAKES
- 14:00 **Chara-Serna, Ana; Richardson, John**
INDIVIDUAL AND CUMULATIVE EFFECTS OF FINE SEDIMENT, NUTRIENT ENRICHMENT, AND INSECTICIDE POLLUTION ON STREAM MICROCOSMS
- 14:15 **Izral, Natalie; Brua, Robert; Culp, Joseph; Chambers, Patricia; Yates, Adam**
IDENTIFYING CRAYFISH METABOLIC PATHWAYS DIAGNOSTIC OF NUTRIENT AND DISSOLVED OXYGEN STRESS
- 14:30 **Norton, Susan**
THE FUTURE OF ECOLOGICAL CAUSAL ASSESSMENT
- 14:45 **Bailey, John**
SUMMARY OF THE DECONSTRUCTING CUMULATIVE EFFECTS SPECIAL SESSION: WHERE TO FROM HERE?

T20: Hydroecology

Chair(s): Stefan Sefick

Location: 102B

- 10:30 **Aubeneau, Antoine; Tank, Jennifer L.; Hanrahan, Brittany; Bolster, Diogo**
INFLUENCE OF SUBSTRATE SIZE AND BIOFILM GROWTH ON ANOMALOUS SOLUTE TRANSPORT IN EXPERIMENTAL STREAMS AT ND-LEEF
- 10:45 **Roche, Kevin; Packman, Aaron**
TURBULENT HYPORHEIC EXCHANGE IN PEMEABLE SEDIMENTS
- 11:00 **Poole, Geoffrey; Amerson, Byron; Fogg, Katie; O'Daniel, Scott; Payn, Robert; Reinhold, Ann Marie; Izurieta, Clemente**
LIMITS OF TRANSIENT STORAGE ASSUMPTIONS FOR HEAT: USING RESIDENCE TIME DISTRIBUTION TO ESTIMATE MEAN TEMPERATURE OF HYPORHEIC DISCHARGE MONTANE ALLUVIAL STREAMS
- 11:15 **Gardner, John; Ensign, Scott; Doyle, Martin; Neve, Ryan**
EULERIAN VERSUS LAGRANGIAN PERSPECTIVES ON LIGHT AVAILABILITY IN A LARGE RIVER

- 11:30 **Sefick, Stephen; Kosnicki, Ely; Paller, Michael; Feminella, Jack**
IS THE LANDCOVER CASCADE SYSTEM-SPECIFIC? A CASE STUDY IN SAND-BED STREAMS OF THE SOUTHEASTERN US SANDHILLS ECOREGION
- 11:45 **Bezerra, Máira; Palmer, Margaret; Filoso, Solange; Ferraz, Silvio**
TROPICAL STREAMS AT RISK: GULLY FORMATION FROM INTENSIVE AGRICULTURE AS DRIVER OF STREAM DEGRADATION

S19: SS: Oil Spills

Chair(s): Faith Fitzpatrick, Stephen Hamilton
(fafitzpa@usgs.gov)

Location: 102B

- 13:30 **Silliman, Benjamin**
PLANNING FOR DILUTED BITUMEN SPILLS ON FRESH WATER
- 13:45 **Chambers, Patricia; Alexander, Alexa**
ASSESSMENT OF WATER QUALITY PATTERNS IN 7 CANADIAN RIVERS IN RELATION TO STAGES IN OIL SANDS INDUSTRIAL DEVELOPMENT, 1972 TO 2010
- 14:00 **Owodeinde, Fatai Gbolahan; Ndimele, Prince Emeka**
EFFECTS OF PETROLEUM BUNKERING ACTIVITIES ON THE SOCIO-CULTURAL AND ECO-ECONOMICS OF MAJIDUN RIVER, IKORODU, NIGERIA
- 14:15 **Zhu, Zhenduo; Waterman, David; Garcia, Marcelo**
MODELING THE TRANSPORT OF OIL-PARTICLE AGGREGATES FROM A DILUTED BITUMEN SPILL IN KALAMAZOO RIVER, MICHIGAN
- 14:30 **Zelt, Ronald; Fitzpatrick, Faith A.; Graan, Thomas; Cozzarelli, Isabelle; Johnson, Rex**
A GEOMORPHIC FRAMEWORK AND TOOLBOX FOR SUBMERGED OIL VOLUME QUANTIFICATION, KALAMAZOO RIVER, MICHIGAN
- 14:45 **Desotelle, Micalleila; Hamilton, Stephen K.**
IMPACTS OF A MAJOR DILUTED BITUMEN (OIL SANDS) SPILL INTO THE KALAMAZOO RIVER (MICHIGAN) ON BENTHIC INVERTEBRATES

- 15:30 **Fitzpatrick, Faith A.; Capone, Daniel M.; Bejarano, Adriana C.; Williams, Lisa L.; Michel, Jacqueline; Dollhopf, Ralph H.; Kimble, Jeffrey W.; Hamilton, Stephen K.**
APPLICATION OF A NET ENVIRONMENTAL BENEFIT ANALYSIS FOR SUBMERGED DILUTED BITUMEN RECOVERY FOLLOWING THE 2010 PIPELINE RELEASE INTO THE KALAMAZOO RIVER
- 15:45 **Waterman, David; Garcia Marcelo**
LABORATORY EVALUATION OF MACROSCOPIC OIL-PARTICLE-AGGREGATES FORMED FROM DILUTED BITUMEN AND KALAMAZOO RIVER SEDIMENT
- 16:00 **Hamilton, Stephen K.; Desotelle, Micaleila**
A MAJOR DILUTED BITUMEN (OIL SANDS) SPILL INTO THE KALAMAZOO RIVER (MICHIGAN): WHAT WE KNOW AND WHAT WE NEED TO LEARN

T02: Biogeochemistry

Chair(s): Noah Lottig, Natalie Griffiths, Ashley Helton, Nora Casson, Erin Hotchkiss

Location: 102C

- 10:30 **Griffiths, Natalie A.; Jackson, C. Rhett; McDonnell, Jeffrey J.; Bitew, Menberu; Du, Enhao; Klaus, Julian**
EFFECTS OF SHORT-ROTATION PINE MANAGEMENT FOR BIOENERGY ON WATER QUALITY IN THE SOUTHEASTERN UNITED STATES
- 10:45 **Payn, Robert; Izurieta, Clemente; Poole, Geoffrey**
AN EXPLORATION OF CONVERGENT EVOLUTION IN ACADEMIA: WHY ECOSYSTEM ECOLOGISTS AND BIOGEOCHEMISTS SHOULD THINK ABOUT THE TOOLS OF SOFTWARE ENGINEERING
- 11:00 **Trentman, Matt; Dodds, Walter; Gido, Keith; Rueegg, Janine; Ruffing, Claire**
USING STRUCTURAL EQUATION MODELING TO DETERMINE EFFECTS OF FISH PRESENCE AND ENVIRONMENTAL FACTORS ON STREAM BENTHIC BIOGEOCHEMICAL RATES
- 11:15 **Dee, Martha M.; Tank, Jennifer L.; Beaulieu, Jake J.; Marzadri, Alessandra; Tonina, Daniele ; Bellin, Alberto**
VARIATION IN DISSOLVED NUTRIENTS AND GREENHOUSE GASES ALONG STREAM NETWORKS IN TWO WATERSHEDS OF CONTRASTING LAND USE

- 11:30 **Stanley, Emily; Casson, Nora; Christel, Samuel; Crawford, John ; Gries, Corinna; Loken, Luke; Oliver, Samantha K**
A NEW METHANE DATABASE AND A REVISED GLOBAL ESTIMATE OF METHANE EFFLUX FROM FLUVIAL ECOSYSTEMS
- 11:45 **Hotchkiss, Erin; Landström, Emelie; Sponseller, Ryan; Karlsson, Jan**
HIGH AUTOCHTHONOUS SUPPORT OF AQUATIC INVERTEBRATES DESPITE EXTREMELY LOW RATES OF GROSS PRIMARY PRODUCTION IN BOREAL STREAMS
- 13:30 **Baker, Christina; Jones, Jeremy; Harms, Tamara**
SPATIAL PATTERNS OF GPP AND R IN A BOREAL STREAM NETWORK
- 13:45 **Mejia, Francine ; Bellmore, J. Ryan; Benjamin, Joseph; Zuckerman, Adrienne; Watson, Grace; Newsom, Michael; Fremier, Alexander**
ABIOTIC VARIABLES CONTROL STREAM METABOLISM IN A NUTRIENT LIMITED MONTANE RIVER NETWORK
- 14:00 **Genzoli, Laurel; Hall, Robert O.**
EIGHT-YEAR SEASONAL TIME SERIES OF KLAMATH RIVER METABOLISM
- 14:15 **Song, Chao; Ballantyne, Ford**
COMPUTATIONAL CONSIDERATIONS OF WHOLE STREAM METABOLISM
- 14:30 **Lottig, Noah**
TO CONSTRAIN OR NOT TO CONSTRAIN: FORCING METABOLISM PARAMETERS TO ECOLOGICALLY FEASIBLE VALUES

T18: Invertebrate Ecology

Chair(s): Jerry Kaster, Will Bouchard, Heidi Rantala, Ashley Moerke

Location: 102DE

- 10:30 **Cox, Erin; Levine, Todd**
PATTERNS OF LURE DISPLAY AND ASSOCIATED BEHAVIORS IN LAMPSILIS CARDIUM
- 10:45 **Voss, Kristofor; Bernhardt, Emily**
TURNING A SNAPSHOT INTO A MOTION PICTURE: PATTERNS IN AQUATIC INSECT PRODUCTION ALONG A GRADIENT OF ALKALINE MINE DRAINAGE
- 11:00 **Norman, Beth; Ruhs, Alexander; Van Alst, Andrew; Walker, Edward**
TOP DOWN AND BOTTOM UP INTERACTIONS IN WATER-FILLED TREE HOLES: IMPLICATIONS FOR MICROBIAL DIVERSITY AND MOSQUITO EMERGENCE

- 11:15 **Speelman, Julie; Holland, Jeffrey D.**
IF YOU BUILD IT, WILL THEY COME?
MACROINVERTEBRATE COMMUNITY
COMPOSITION IN INDIANA TWO-STAGE
DITCHES
- 11:30 **Richmond, Erinn; Rosi-Marshall, Emma ; Lee, Sylvia;
Thompson, Ross; Grace, Michael**
BUGS ON DRUGS: SSRIS (ANTIDEPRESSANTS)
AFFECT STREAM ECOSYSTEM FUNCTION
- 11:45 **Halvorson, Halvor; White, Grant; Scott, Thad;
Evans-White, Michelle**
DIETARY AND TAXONOMIC VARIATION
IN UTILIZATION OF MICROBIAL CARBON
AND PHOSPHORUS BY DETRITIVOROUS
CADDISFLIES
- 13:30 **Schloesser, Don**
THE CHRONOLOGIC RECORD OF BURROWING
MAYFLIES (HEXAGENIA SPP.) IN SAGINAW BAY,
LAKE HURON
- 13:45 **Siersma, Heather**
TRENDS IN THE DISTRIBUTION AND
ABUNDANCE OF HEXAGENIA SPP. IN SAGINAW
BAY, LAKE HURON, 1954-2012: MOVING
TOWARDS RECOVERY?
- 14:00 **Groff, Christopher; Kaster, Jerry**
BENTHIC HABITAT CONDITIONS AND THE
POTENTIAL FOR RE-COLONIZATION BY
HEXAGENIA MAYFLIES IN GREEN BAY, LAKE
MICHIGAN
- 14:15 **Driscoll, Zac; Bootsma, Harvey**
THE ROLE OF STRATIFICATION ON THE
APPARENT TROPHIC POSITION OF COPEPODS
IN LAKE MICHIGAN AS REVEALED BY THE
NITROGEN STABLE ISOTOPE
- 14:30 **Yarra, Allyson; Richards, Todd; Roy, Allison**
IMPACTS OF THERMAL AND FLOW ALTERATION
ON BENTHIC STREAM MACROINVERTEBRATES
DOWNSTREAM OF WATER SUPPLY RESERVOIRS
- 14:45 **Lovell, Anthony**
HABITAT USE BY DIFFERENT MITOCHONDRIAL
LINEAGES OF THE ATYID SHRIMP PARATYA
AUSTRALIENSIS IN STREAMS OF MELBOURNE,
AUSTRALIA
- 15:30 **Bouchard, Jr., R. William; Gelhaus, Jon K.**
FIRST RECORD OF A SKATING CRANE FLY:
THE ECOLOGY, BEHAVIOR, AND TAXONOMY
OF THE ENIGMATIC PHANTOLABIS
LACUSTRIS (ALEXANDER, 1938) (DIPTERA:
TIPULIDAE)
- 15:45 **Peterson, Michael; O'Grady, Patrick; Resh, Vincent**
LARGE AQUATIC INSECTS (DICOSMOECUS,
CALINEURIA, HESPEROPERLA, AND
PTERONARCYS) SHOW DISCORDANT
POPULATION STRUCTURE IN THE WESTERN
UNITED STATES
- 16:00 **Gislason, Gisli; Palsson, Snaebjorn**
ORIGIN OF AQUATIC INSECTS OF ICELAND
WITH EMPHASIS ON CADDISFLIES
- S16: SS: Public Participation in Freshwater Research**
- Chair(s): Jo A. Latimore, Ayesha Burdett
(latimor1@msu.edu)
- Location: 103AB
- 10:30 **Jordan, Rebecca; Sorensen, Amanda**
CITIZEN SCIENCE AND RESOURCE
MANAGEMENT
- 10:45 **Wilson, Rebecca; Leslie, Alan; Spadafora, Elanor;
Shaffer, Jen; Lamp, William**
BLACK FLIES FROM BACKYARDS:
INCORPORATING CITIZEN DERIVED DATA
INTO THE STUDY OF NUISANCE INSECT
DISTRIBUTION
- 11:00 **Burres, Erick**
DIY DIGITAL SOLUTIONS FOR PROMOTING AND
SUSTAINING CITIZEN SCIENCE ENGAGEMENT
IN FRESHWATER BIODIVERSITY AND HABITAT
MONITORING
- 11:15 **Fienen, Michael; Lowry, Christopher**
HYDROLOGIC PARTICIPATORY SENSING IN A
DIGITAL WORLD
- 11:30 **Asplund, Tim; Stepenuck, Kristine; Skawinski, Paul**
FROM SELF-HELP TO VOLUNTEER
MONITORING TO CITIZEN SCIENCE –
ENGAGING THE PUBLIC IN LAKE AND STREAM
ASSESSMENT, RESTORATION AND PROTECTION
IN WISCONSIN
- 11:45 **Stepenuck, Kristine**
UNDERSTANDING IMPACTS OF VOLUNTEER
WATER MONITORING PROGRAMS ON NATURAL
RESOURCE POLICY AND MANAGEMENT
- 13:30 **Tyner, Emily; Ray, Dan; Jennings, Sue ; Moraska
Lafrancois, Brenda**
UNDERWATER AND ON THE BEACHES: CITIZEN
SCIENCE EFFORTS SUPPORTING AQUATIC
SCIENCES RESEARCH AT SLEEPING BEAR
DUNES NATIONAL LAKESHORE

- 13:45 **Albright, Lindsey; Stepenuck, Kristine**
WATER ACTION VOLUNTEERS (WAY) - TOTAL PHOSPHORUS MONITORING IN WISCONSIN'S STREAMS
- 14:00 **Burdett, Ayesha**
THE VALUE OF COLLABORATION: USING PUBLIC MUSEUMS TO LINK THE COMMUNITY WITH RESEARCH
- 14:15 **Latimore, Jo A.; Burdett, Ayesha**
THE FUTURE OF PUBLIC PARTICIPATION IN FRESHWATER RESEARCH: OPPORTUNITIES AND CHALLENGES
- S17: SS: Landscape Approaches to Nutrient and Sediment Management in Streams**
- Chair(s): Mike Shupryt, Lucinda Johnson, Mike Paul
(Michael.Shupryt@wisconsin.gov)
- Location: 103C
- 10:30 **Rueegg, Janine; Sheehan, Ken; Baker, Christina; Daniels, Melinda; Dodds, Walter; Farrell, Kaitlin; Flinn, Michael; Gido, Keith; Harms, Tamara; Jones, Jeremy; Koenig, Lauren; Kominoski, John; McDowell, William H.; Bowden, William; Rosemond, Amy D.; Trentman, Matt; Whiles, Matt; Wollheim, Wil; Parker, Samuel P.**
BASEFLOW PATTERNS OF GEOMORPHIC HETEROGENEITY IN STREAM NETWORKS ACROSS BIOMES
- 10:45 **McDowell, William H.; Potter, Jody; Snyder, Lisle; Daley, Michelle; Appling, Alison; Koenig, Lauren; Rodriguez-Cardona, Bianca; Wymore, Adam; Brereton, Richard**
USING A SENSOR NETWORK TO UNDERSTAND DRIVERS OF NUTRIENT AND ORGANIC MATTER CONCENTRATIONS AT MULTIPLE SPATIAL AND TEMPORAL SCALES
- 11:00 **Paul, Michael; Cada, Peter**
MODELING WATER QUALITY AND BIOLOGICAL CONDITION IN STREAMS AT MULTIPLE SCALES: APPLICATIONS OF THE ENVIROATLAS DATASET
- 11:15 **Wollheim, Wil; Stewart, Robert; Mineau, Madeleine; Samal, Nihar; Zuidema, Shan; Huang, Tao; Zhou, Zaixing**
UNDERSTANDING LAND USE AND CLIMATE IMPACTS ON WATER QUALITY ACROSS SPATIAL SCALES: INTERACTIONS OF SCALE, INTENSITY, DILUTION, AND ECOSYSTEM SERVICES (ISIDES)
- 11:30 **Olson, John; Hawkins, Charles**
ASSESSING HUMAN ALTERATIONS OF STREAM WATER CHEMISTRY FROM MODELED REFERENCE CONDITIONS
- 11:45 **Keitzer, Steven; Ludsin, Stu; Sowa, Scott; Sasson, Anthony; Herbert, Matthew; Annis, Gust; Froelich, August; Volmer-Sanders, Carrie; Arnold, Jeff; White, Mike; Yen, Haw; Daggupati, Prasad; Norfleet, Lee; Johnson, Mari-Vaughn; Atwood, Jay; Rewa, Charlie**
POTENTIAL BENEFITS OF CONSERVATION STRATEGIES FOR STREAM BIODIVERSITY IN AN AGRICULTURAL LANDSCAPE
- 13:30 **Dodds, Walter; Larson, Danelle; Veach, Allison**
EXTREME STREAM-ECOSYSTEM EFFECTS FROM RIPARIAN DISTURBANCE IN AN OTHERWISE INTACT WATERSHED
- 13:45 **Rosemond, Amy D.; Helton, Ashley M.; Bumpers, Phillip M.; Benstead, Jonathan P.**
RESPONSE OF AUTOTROPHIC AND HETEROTROPHIC PATHWAYS TO NUTRIENTS ALONG STREAM NETWORKS
- 14:00 **Christensen, Jay; Nash, Maliha; Compton, Jana; Wigington, Jr., Parker J.; Griffith, Stephen**
CONNECTING SEASONAL RIPARIAN BUFFER METRICS AND NITROGEN CONCENTRATIONS IN A PULSE-DRIVEN AGRICULTURAL SYSTEM
- 14:15 **Hanrahan, Brittany; Tank, Jennifer L.; Christopher, Sheila F.**
HOW DO CHANGES IN CONSERVATION ALTER HOT-SPOTS OF NUTRIENT EXPORT IN AGRICULTURAL WATERSHEDS?
- 14:30 **Tank, Jennifer L.; Hanrahan, Brittany; Christopher, Sheila F.**
CAN WE CAN SOLVE COASTAL "DEAD ZONES" FROM A DISTANCE? WATERSHED-SCALE CONSERVATION REDUCES NUTRIENT EXPORT FROM AGRICULTURAL LANDSCAPES
- 14:45 **Roley, Sarah S.; Tank, Jennifer L.; Tyndall, John C.; Witter, Jonathan D.**
THE VALUE OF WATER QUALITY IMPROVEMENTS ACHIEVED WITH AGRICULTURAL BEST MANAGEMENT PRACTICES
- 15:30 **Nelson, Theresa; Ruesch, Aaron**
PRIORITIZING WATER QUALITY IMPROVEMENT EFFORTS ON AGRICULTURAL LANDS USING LIDAR ELEVATION DATA
- 15:45 **Ruesch, Aaron; Diebel, Matt; Menuz, Diane**
DATABASE APPROACHES FOR RAPID CONSTRUCTION OF SPATIALLY EXPLICIT WATER QUALITY MODELS
- 16:00 **Appling, Alison; Leon, Miguel; McDowell, William H.**
OPTIMIZING WATERSHED FLUX ESTIMATES: THE R PACKAGE 'LOADFLEX'

16:15 **Baker, Matthew**
LANDSCAPE APPROACHES TO NUTRIENT AND
SEDIMENT MANAGEMENT IN STREAMS: PAST
RESEARCH AND FUTURE DIRECTIONS

T21: Molecular Ecology

Chair(s): Scott Hotaling

Location: 103DE

10:30 **Williams, Trevor**
EVOLUTIONARY DELINEATION AND CRYPTIC
SPECIATION OF *HYALELLA* SPP. IN THE
CHIHUAHUAN DESERT

10:45 **Walters, Ashley; Inoue, Kentaro; Harris, John;
Berg, David**
ECOLOGICAL DIFFERENTIATION IN A
FRESHWATER MUSSEL SPECIES COMPLEX

11:00 **Turner, Cameron R.**
PUTTING CONTAMINATION TO USE FOR
REDUCING UNCERTAINTY IN ENVIRONMENTAL
DNA MONITORING

11:15 **Kranzfelder, Petra; Ekrem, Torbjørn; Stur, Elisabeth**
BARCODING OF TRACE DNA IN CHIRONOMID
PUPAL EXUVIAE REVEALS QUALITY
DIFFERENCES IN DNA EXTRACTION
PROTOCOLS

11:30 **Hotaling, Scott; Muhlfeld, Clint C; Giersch, J. Joseph;
Miller, Michael R.; Grewelle, Richard; Lu, Deborah;
Jordan, Steve P.; Luikart, Gordon; Weisrock, David**
TAKING THE ANONYMITY OUT OF RAD-
SEQUENCING: LINKING THOUSANDS OF SNP
MARKERS WITH THE FIRST DRAFT GENOME
SEQUENCE OF THE MELTWATER STONEFLY,
LEDNIA TUMANA

S20: SS: Temporary Wetlands

Chair(s): Kelley Fritz, Brian O'Neill
(k.a.fritz@siu.edu, oneillb@uww.edu)

Location: 103DE

13:30 **Holt, Courtney; Batzer, Darold**
IMPACTS OF FLOW REGULATION ON
DISTRIBUTION, BEHAVIOR, AND PHYSIOLOGY
OF *NEOPORUS* SP. (COLEOPTERA: DYTISCIDAE),
A COMMON INHABITANT OF SOUTHEASTERN
FLOODPLAINS


13:45 **Fritz, Kelley; Kirschman, Lucas; Whiles, Matt**
ENERGY FLOWS AND SUBSIDIES ACROSS
AQUATIC-TERRESTRIAL BOUNDARIES
OF TEMPORARY PONDS VIA AMPHIBIAN
MIGRATIONS

14:00 **Vega, Shelby; Fritz, Kelley; Kirschman, Lucas; Whiles,
Matt; Trushenski, Jesse**
EMERGING AMPHIBIANS AS A POTENTIAL
SOURCE OF ESSENTIAL FATTY ACIDS FOR
RIPARIAN PREDATORS

14:15 **Chandler, Houston; Gorman, Thomas; Haas, Carola**
THE EFFECTS OF CHANGING VEGETATION
STRUCTURE AND WETLAND HYDROLOGY ON
AQUATIC COMMUNITIES IN FIRE-SUPPRESSED
WETLANDS OF THE SOUTHEASTERN UNITED
STATES


14:30 **O'Neill, Brian; Thorp, James**
BIRTH, LIFE, AND DORMANCY OF AN
EPHEMERAL FOOD WEB

14:45 **Church, James; Little, Amanda**
AQUATIC MACROINVERTEBRATE
METACOMMUNITY STRUCTURE IN FORESTED
WETLANDS OF WEST-CENTRAL WISCONSIN



The International Joint Commission

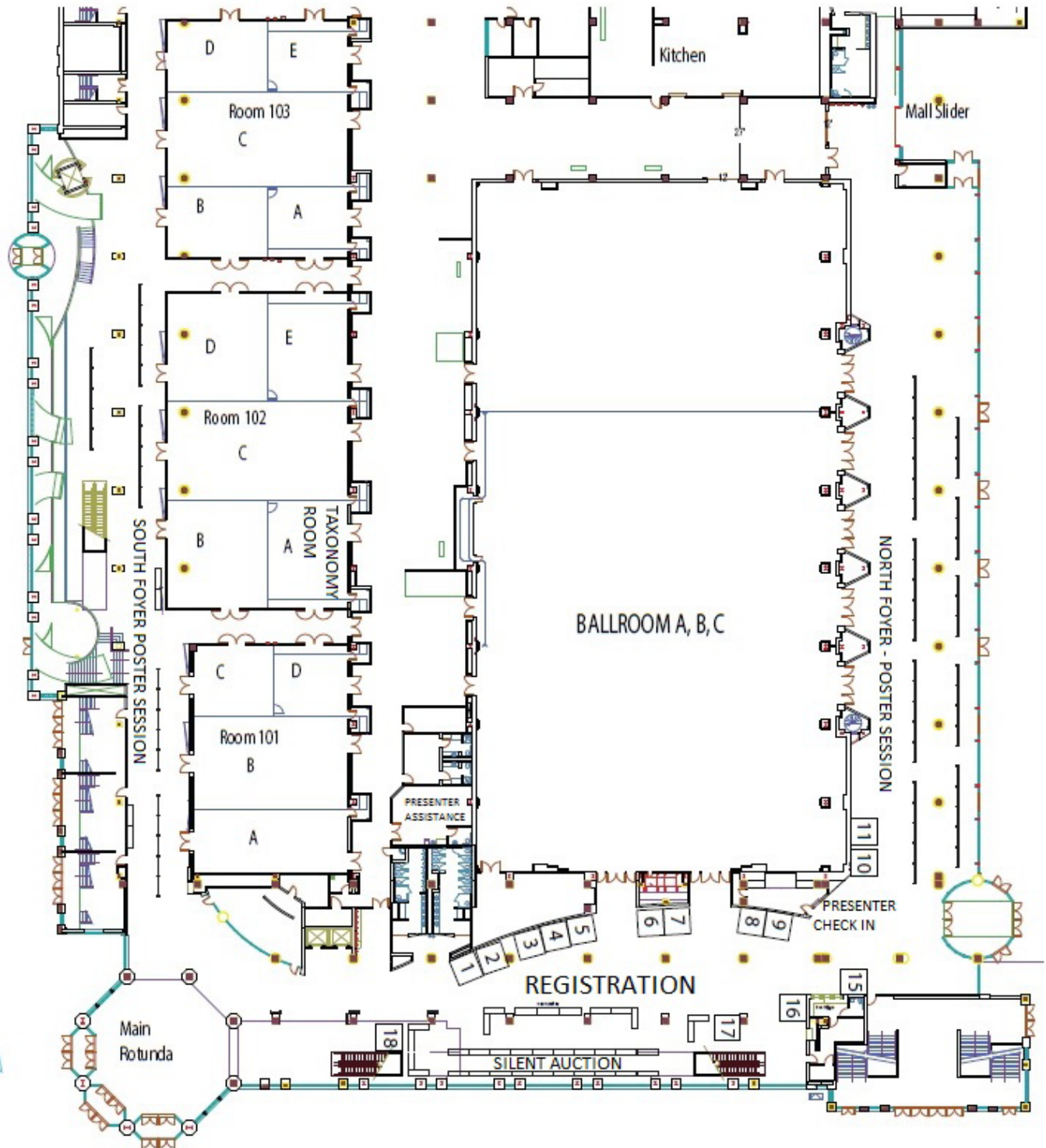
CREATED BY THE 1909 BOUNDARY WATERS
TREATY, THE INTERNATIONAL JOINT COMMISSION (IJC)
PREVENTS AND RESOLVES DISPUTES OVER WATERS
SHARED BETWEEN THE UNITED STATES AND CANADA.



THE IJC IS RESPONSIBLE FOR HELPING THE NATIONS
IMPLEMENT THE GREAT LAKES WATER QUALITY AGREEMENT
BY ADVISING GOVERNMENTS ON POLICY, SCIENCE
AND PROGRESS TOWARD ACHIEVING THE AGREEMENT'S
GOALS.

WWW.IJC.ORG

FACILITY MAP INCLUDING POSTER LOCATIONS



POSTERS

Posters Numbered 1-159 are Displayed in the North Foyer
Posters Numbered 160-250 are Displayed in the South Foyer

S01: SS: Freshwater Futures - Undergrads

- 1 **Limarie Reyes, Pedro Torres**
THE ROLE OF PHYLLOICUS PULCHRUS (TRICHOPTERA: CALAMOCERATIDAE) IN THE DECOMPOSITION OF LEAF LITTER: EVALUATING LEAF SPECIES AND CASE BUILDING EFFECTS
- 2 **Patina Mendez, Teri Crisp**
INTEGRATING VISUOSPATIAL APPROACHES INTO RESEARCH READING AND WRITING
- 3 **Tamara Sluss, Checo Colon-Gaud, Krista Capps, Patina Mendez, Judy Li, Marcelo Ardon-Sayao**
PROMOTING DIVERSITY IN FRESHWATER SCIENCE THROUGH MENTORING: CELEBRATING FIVE YEARS OF INSTARS

S02: SS: Species Distribution Models

- 4 **Brock Struecker, Joseph Milanovich**
PREDICTING THE CONSEQUENCES OF GLOBAL CLIMATE CHANGE ON POND-BREEDING SALAMANDERS IN THE MIDWESTERN UNITED STATES
- 5 **Luke Etchison, Mark Pyron**
A COMPARISON OF SILVER CARP HABITAT AVAILABILITY IN A 10-KM STRETCH OF THE WABASH RIVER
- 6 **Kelsey Weidner**
CHARACTERIZATION OF THE ALGAL AND MACROINVERTEBRATE COMMUNITIES OF TWO VERNAL POOLS AT TIDD-OAKES FARM, HARDIN COUNTY, OHIO

S04: SS: Acid Deposition

- 7 **Martina Ctvrtlikova, Jaroslav Vrba, Petr Znachor, Jiri Kopacek, Petr Hekera, Jiri Jarosik, Andrew Wade, Shovonlal Roy**
CAUSAL FACTORS OF RECOVERY OF ISOËTES ECHINOSPORA AND I. LACUSTIS IN TWO ACIDIFIED SOFTWARE LAKES
- 8 **Nora Casson, Steve Sebestyen, Randall Kolka, Emily Stanley**
SENSITIVITY OF SEEPAGE LAKES IN NORTHERN WISCONSIN TO ACID DEPOSITION

- 9 **Theo Light, Alicia Helfrick, Natasha Wingerter**
WIDESPREAD OCCURRENCE OF A SUBTERRANEAN AMPHIPOD IN ACIDIC SURFACE STREAMS OF SOUTH-CENTRAL PENNSYLVANIA

S05: SS: Nutrient Reaction Rates and Residence Times

- 10 **Samantha K Oliver, Sarah M Collins, Emily Stanley, Patricia A Soranno**
PATTERNS AND DRIVERS OF LAKE STOICHIOMETRY ACROSS A 17-STATE REGION IN THE U.S.

S06: SS: Invertebrate Systematics and Faunistics

- 11 **Tiffani Manteuffel**
ABUNDANCE AND DISTRIBUTION OF CRAYFISH IN TWO FLORIDA SPRING-FED RIVERS

S08: SS: Accounting for Variability

- 12 **David G. Armanini, Almudena Idígoras Chaumel, Wendy Monk, Adam Yates**
A PROPOSAL FOR THE INTEGRATION OF LONG TERM BENTHIC COMMUNITY VARIABILITY IN CURRENT ECOLOGICAL ASSESSMENT SYSTEMS
- 13 **Robert Shields**
VARIATION IN MORPHOLOGY OF NORTHERN CRAYFISH (ORCONECTES VIRILIS) DUE TO LATITUDE, SEXUAL DIMORPHISM, AND WATERSHED AREA

S09: SS: Dynamics of Carbon

- 14 **Clay Arango, Jake J. Beaulieu, Ken Fritz, Brian Hill, Colleen Elonen, Michael Pennino, Paul Mayer, Sujay Kaushal, Adam Balz**
CARBON LIMITATION PATTERNS IN BURIED AND OPEN URBAN STREAMS
- 15 **Kaitlyn Peters, Kenneth Fortino**
TERRESTRIAL LEAF LITTER INCREASES SEDIMENT OXYGEN DEMAND AND ALTERS NUTRIENT FLUX IN SEDIMENTS FROM A SMALL MAN-MADE POND IN CENTRAL VIRGINIA
- 16 **Jonathan O'Brien, Ryan Koch, David Kerling, Courtney Marlinski, Molly Christie**
NITROGEN TURNOVER AND RAPID CYCLING OF ALGAL EXUDATES IN EPILITHIC BIOFILMS

17 **Ryan Koch¹, David Kerling, Courtney Marlinski, Molly Christie, Jonathan O'Brien**
NITRATE LOADING REDUCES THE CAPACITY FOR NITRATE UPTAKE IN EPILITHIC BIOFILMS

18 **Huacheng Xu**
FURTHER INSIGHTS INTO DOM-METAL INTERACTION BY PARAFAC ANALYSIS COMBINED WITH TWO-DIMENSIONAL CORRELATION SPECTROSCOPY

19 **Zaisheng Yan, Helong Jiang**
EFFECT OF DIFFERENT NATURAL ORGANIC MATTER ON PYRENE AND BENZO[A] PYRENE BIODEGRADATION IN FRESHWATER SEDIMENTS

20 **Minwei Xie**
EFFECTS OF RESUSPENSION ON METAL DYNAMICS AND SPECIATION IN CONTAMINATED LAKE SEDIMENTS

21 **CANCELLED**

22 **Angang Li, Antoine Aubeneau, Tyler King, Rose Cory, Bethany Neilson, George Kling, Diogo Bolster, Aaron Packman**
STOCHASTIC MODELING OF CARBON PHOTO-MINERALIZATION ALONG ARCTIC RIVERS

23 **Myrto - Georgia Nikolakopoulou, Alba Argerich, Esperança Gacia, Eugènia Martí, Albert Sorolla, Francesc Sabater**
EFFECTS OF HELOPHYTES ON AQUATIC NUTRIENT DYNAMICS: RESULTS FROM A MESOCOSM EXPERIMENT

24 **Tarek Teber, Stephen DeVilbiss, Zhengzhen Zhou, Peng Lin, Laodong Guo**
COMPOSITION AND FLUX OF DISSOLVED ORGANIC MATTER FROM THE LOWER MILWAUKEE RIVER

25 **Shimaa Kteeba, Zhengzhen Zhou, Laodong Guo**
OPTICAL AND SIZE CHARACTERIZATION OF SOIL DISSOLVED ORGANIC MATTER

26 **Sam Carlson, Geoffrey Poole, Robert O. Hall, Natalie Day, Ellen Wohl, Bridget Livers, Hilary Madinger**
SIMULATING STREAM TEMPERATURE MODULATION OF BENTHIC NITRATE REMOVAL PATTERNS ACROSS STREAM NETWORKS

27 **Jesse Becker, Melody Bernot, Thomas Lauer**
RIVERPACE: RESULTS OF A NATIONAL SURVEY OF PHARMACEUTICALS AND PERSONAL CARE PRODUCTS IN US RIVERS AND STREAMS BY UNIVERSITY STUDENT GROUPS

28 **Qing Zhou**
IMPACTS OF EICHHORNIA CRASSIPES (MART.) SOLMS STRESS ON THE NUTRIENTS AND MICROCYSTIN RELEASE FROM MICROCYSTIS AERUGINOSA

S10: SS: Quantifying Ecological Traits

29 **Dorothea Hug Peter, Emmanuel Castella, Vera Slaveykova**
THE USE OF TRAITS IN CORRELATIVE MODELLING OF WHOLE BODY METAL CONCENTRATIONS IN AQUATIC MACROINVERTEBRATES

S11: SS: Biotic Response to Flow

30 **David Diaz**
INFLUENCE OF GROWING SEASON STREAM FLOWS ON PERIPHYTON GROWTH

31 **Summer Aldabbeh, Jessica Orlofske, Wendy Monk, Donald Baird**
SIZE STRUCTURE AND DISTRIBUTION OF PREDATORY AQUATIC INSECTS AMONG MESOSCALE HYDRAULIC HABITATS

32 **Valerie Riehl, Jessica Orlofske**
MORPHOLOGICAL CHARACTERIZATION OF EXUVIA FROM CO-EMERGING RIVERINE DRAGONFLIES USING GEOMETRIC MORPHOMETRICS

33 **Brianna Hutchison, Graham Markowitz**
INVESTIGATING RELATIONSHIPS BETWEEN NATURAL FLOW REGIMES AND MACROINVERTEBRATE ASSEMBLAGES IN THE SUSQUEHANNA RIVER BASIN

S13: SS: Didymosphenia Germinata

34 **Maximo Frangopulos, Marco Pinto, Carolina Diaz, Sebastian Ruiz, Guillermo Alvarado, Rodrigo Torres**
PRESENCE OF THE INVASIVE NUISANCE DIATOM DIDYMOSPHENIA GEMINATA IN RIVERS OF TIERRA DEL FUEGO ISLAND, SOUTHERN CHILE

35 **Lucas Hix, Justin Murdock**
EFFECTS OF PH ON DIDYMOSPHENIA GEMINATA DISTRIBUTION, METABOLISM, AND PHOSPHORUS UPTAKE

36 **Jaime Haueter, Lisa Kunza**
INFLUENCE OF DIDYMOSPHENIA GEMINATA MATS ON STREAM METABOLISM AND NUTRIENT CYCLING

37 **Christopher Schiller, Jaime Haueter, Lisa Kunza, Sarah Spaulding**
HISTORICAL ABUNDANCE OF DIDYMOSPHENIA GEMINATA IN GRAND TETON NATIONAL PARK, WYOMING

38 **Russell Marlow, Lisa Kunza**
THE INFLUENCE OF D. GEMINATA ON BENTHIC MACROINVERTEBRATE RESOURCE AVAILABILITY IN RAPID CREEK, SOUTH DAKOTA

S15: SS: Deconstructing Cumulative Effects

39 **Amy Hansen, Jonathon Czuba, Jon Schwenk, Anthony Longjas, Mohammad Danesh-Yazdi, Daniel Hornbach, Efi Foufoula-Georgiou**
COUPLING FRESHWATER MUSSEL ECOLOGY AND RIVER DYNAMICS USING A SIMPLIFIED DYNAMIC INTERACTION MODEL

S16: SS: Public Participation in Freshwater Research

40 **Janice A. Hinsey, Theresa M. Johnson**
MINI-BIOBLITZ EVENTS HELP “BRIDGE THE GAP” FOR BIODIVERSITY AT GEORGE WASHINGTON CARVER NATIONAL MONUMENT, MISSOURI AND BUFFALO NATIONAL RIVER, ARKANSAS

41 **Meagan Westhoven, Timothy Hoellein, Jamie Cross, Olga Lyandres**
ANTHROPOGENIC LITTER DENSITY ON LAKE MICHIGAN BEACHES: ROLE OF RIVER MOUTH PROXIMITY AND FISHING ACTIVITY AS REVEALED BY CITIZEN SCIENCE DATA COLLECTION

S17: SS: Landscape Approaches to Nutrient and Sediment Management in Streams

42 **Bronwen Stanford**
EFFECTS OF RESTORED RIPARIAN BUFFER LENGTH ON MACROINVERTEBRATES IN RANGELAND STREAMS

43 **Shannon Speir, Thad Scott, Jason Taylor**
QUANTIFYING DENITRIFICATION RATES AS A FUNCTION OF NITRATE AVAILABILITY IN VEGETATED AGRICULTURAL DITCHES

44 **Anna Kottkamp, Brittany Hanrahan, Jennifer L. Tank**
WHEN IS ENOUGH, ENOUGH? EXPLORING POTENTIAL CONSERVATION THRESHOLDS IN AN AGRICULTURAL WATERSHED.

45 **Benjamin Jessup, Joshua Schultz**
MODELING REFERENCE NUTRIENT CONDITIONS WITH QUANTILE REGRESSION EXTRAPOLATION

46 **Kaycee Reynolds, Terrance Loecke, Amy Burgin, Caroline Davis, Diego Riveros-Iregui, Steven Thomas, Martin St. Clair, Adam Ward**
HIGH-FREQUENCY NITRATE MONITORING TO QUANTIFY UNCERTAINTIES OF SAMPLING STRATEGIES IN AGRICULTURAL WATERSHEDS

S18: SS: Stream Macroinvertebrate Response to Disturbances in Neotropical Streams: Recent Advances and Future Directions

47 **Pablo E. Gutierrez-Fonseca, Alonso Ramirez**
INSECT MORPHOLOGY REFLECTS ENVIRONMENTAL VARIABILITY IN TROPICAL LOWLAND STREAMS, COSTA RICA

S20: SS: Temporary Wetlands

48 **Anna Winfield**
EPHEMERAL POND HYDROLOGIC CHARACTERISTICS EFFECTS ON PEAT ACCUMULATION

49 **Pamela Gehant, Amanda Little, James Church**
SEASONAL TRENDS IN WATER CHEMISTRY IN THE PERMANENT AND EPHEMERAL WETLANDS OF WISCONSIN'S CHIPPEWA MORaine

50 **Patricia Saunders, Rosalie Sepesy, Olivia Macek**
THE EFFECT OF HYDROPERIOD ON FALL ZOOPLANKTON ABUNDANCE IN SMALL FLOODPLAIN PONDS (BLACK FORK OF THE MOHICAN RIVER, OH)

S14: SS: Asian Freshwater Futures

51 **Shailendra Sharma, Rupali Mandloi, Shitika Barkale**
WATER QUALITY ASSESSMENT OF RIVER NARMADA USING BENTHIC MACROINVERTEBRATES

52 **Z. M. Biyasheva, N. A. Ibragimova, R. B. Esenov**
THE CASPIAN CRAYFISH AS A MARKER OF WATER CONTAMINATION IN THE KAZAKHSTANIAN AREA OF OIL PRODUCTION

T01: Food Webs

- 53 **Akira Terui, Takumi Akasaka, Junjiro Negishi, Fumihiko Uemura, Futoshi Nakamura**
FOOD WEB COMPLEXITY STABILIZES SEASONAL VARIABILITY IN RIVER-TERRESTRIAL LINKAGES
- 54 **Keysa Rosas, Checo Colon-Gaud, Alonso Ramirez, Tavis Anderson**
THE FOOD WEB OF A TROPICAL ISLAND STREAM
- 55 **Matthew Cashman, Francesca Pilotto, Gemma Harvey, Geraldene Wharton, Martin Pusch**
LARGE WOOD ENHANCES RESOURCE AVAILABILITY IN A LOWLAND RIVER AS DEMONSTRATED BY COMBINED STABLE ISOTOPE AND FATTY ACID ANALYSES
- 56 **Victoria Chraibi, Sherilyn Fritz**
RESILIENCE OF AQUATIC COMMUNITIES IN NATURALLY FISHLESS LAKES IN YELLOWSTONE NATIONAL PARK TO FISH STOCKING
- 57 **Autumn Smith, Scott Grubbs, Albert Meier**
CORBICULA FLUMINEA FOOD WEB ECOLOGY: AN EXPERIMENTAL TRANSPLANT APPROACH IN A KARST RIVERINE SYSTEM
- 58 **Christy Dolph, Amy Hansen, Jacques Finlay**
TROPIC DYNAMICS IN AGRICULTURAL STREAMS: LONGITUDINAL AND TEMPORAL PATTERNS IN ISOTOPE RATIOS OF BENTHIC MACROINVERTEBRATES FROM THE MINNESOTA RIVER BASIN, USA
- 59 **Oliver J Wilmot, Jonathan P Benstead, Alexander D Huryn**
TEMPERATURE DEPENDENCE OF LEAF LITTER BREAKDOWN IN NINE HEADWATER STREAMS LOCATED ALONG A REGIONAL THERMAL GRADIENT

T02: Biogeochemistry

- 60 **Denise Bruesewitz, Whitney King, Brenda Fekekete, Rebecca Chmiel, Emma Berger, Rebecca Forgrave, Dylan Plaskon, Timothy Hoellein, Chester Zarnoch**
A NOVEL METHOD FOR RAPID MEASUREMENT OF AMMONIUM ISOTOPE RATIOS WITH TIME-OF-FLIGHT MASS SPECTROSCOPY
- 61 **Joshua Brigham, Anne Hershey, Martin Tsui**
EXAMINING METHANE PROCESSES AND METHANE DERIVED CARBON IN FOOD WEBS IN NORTH CAROLINA PIEDMONT STREAMS

- 62 **Tori Goehrig, Eva Gallardo, Marcelo Ardon-Sayao**
DIRECT AND INDIRECT EFFECTS OF SALINITY ON AQUATIC METABOLISM IN A NORTH CAROLINA COASTAL WETLAND
- 63 **Molly Baker**
METABOLIC HETEROGENEITY AND OXYGEN DISTRIBUTIONS IN BIOFILMS
- 64 **Keeley MacNeill, Brady Kohler, Steven Thomas, Emma Rosi-Marshall, Alexander Flecker**
ECOSYSTEM STOICHIOMETRY: BASAL C:N:P RATIOS AND NUTRIENT CYCLING IN TROPICAL STREAMS
- 65 **Peter Blum, Martin Tsui, Anne Hershey**
POTENTIAL MICROBIAL METHYLMERCURY PRODUCTION IN NORTH CAROLINA PIEDMONT STREAM SEDIMENTS
- 66 **Eric Strauss, Carly Olson, Nathaniel Strauss, Robert Stelzer**
MODELING HYDROLOGIC PARAMETERS AND NITRATE UPTAKE IN EMMONS CREEK, A HIGH NITRATE COLD WATER STREAM IN EAST CENTRAL WISCONSIN
- 67 **Brady Kohler, Robert O. Hall, Matt Provart, Brad Carr**
SEEING THE UNSEEN - COMBINING SOLUTE TRACERS WITH GEOPHYSICAL IMAGING TO MAP HYPORHEIC FLOWPATHS
- 68 **Nicholas Gubbins, John Crawford, Emily Stanley**
USING PRECISION GRADIENT AND TURBULENCE MEASUREMENTS TO DETERMINE AQUATIC GAS FLUXES AND THE POTENTIAL SIGNIFICANCE OF NON-DISSOLVED GASES
- 69 **Allison Bullard, Anne Hershey**
A COMPARISON OF THE POTENTIAL RATES OF METHANOGENESIS AND METHANE OXIDATION IN SEDIMENT SLURRIES OF TWO URBAN AND TWO FORESTED STREAMS.
- 70 **Molly Plemel, Robert O. Hall, Hilary Madinger**
MEASURING NET DENITRIFICATION FLUX USING MEMBRANE INLET MASS SPECTROMETRY IN MOUNTAIN RIVERS
- 71 **Jessica R. Corman, Amisha Poret-Peterson, James Elser**
INSIGHTS INTO SULFUR BIOGEOCHEMISTRY IN ALKALINE, CARBONATE-DEPOSITING HEADWATER STREAMS
- 72 **Courtney Reijo, Matthew Cohen**
A CHAMBER-BASED APPROACH TO ASSESS CHANGES IN STREAM ECOSYSTEM METABOLISM AND NITRATE UTILIZATION AT REDUCED NITRATE LEVELS

- 73 **Jason Taylor, Matt Moore, Thad Scott**
VEGETATION EFFECTS ON NITRATE UPTAKE
AND REMOVAL VIA DENITRIFICATION IN DITCH
MESOCOSMS

T03: Climate Change

- 74 **Vincent Butitta, Emily Stanley, Andrew Rypel**
LINKING MUSSEL GROWTH DYNAMICS TO
TEMPERATURE REGIMES: PREDICTING HOW
FRESHWATER MUSSELS WILL RESPOND TO A
CHANGING CLIMATE
- 75 **Tamara Contador, James Kennedy**
LIVING IN EXTREMES: DISTRIBUTION AND
THERMAL TOLERANCES OF PAROCHLUS
STEINENII (CHIRONOMIDAE) IN THE SOUTH
SHETLAND ISLANDS, ANTARCTICA AND
SUBANTARCTIC REGION OF CHILE (55OS)
- 76 **Brianna Levenstein, Joseph Culp, Jennifer Lento, Krista
Chin, Steve Kokelj**
INVESTIGATING THE IMPACTS OF
RETROGRESSIVE THAW SLUMPS ON
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SOCIETY FOR
FRESHWATER SCIENCE
2016 ANNUAL MEETING



ANNUAL MEETING
Sacramento California

sfs2016
RUNNING ON EMPTY

SACRAMENTO CALIFORNIA, USA

MAY 21-26, 2016
Sacramento Convention Center

For more information visit freshwater-science.org or

sfsAnnualMeeting.org

Running on Empty: *Increasing Demands on Freshwater Resources in the face of a Changing Climate*

In many regions of the developed and developing world, large human populations live in arid environments that out of necessity depend on scarce or imported water. This is certainly true in California and the Western US where a complex infrastructure of dams, canals, and groundwater extraction provide freshwater for some of the world's most productive farms and some of the world's most opulent living conditions. Compounding this insatiable demand for freshwater is the effects that variable environmental conditions of a warming climate, changing precipitation, and increasing frequency and severity of droughts have on over-taxed water supplies.

While water resource managers contemplate these issues, the farms and cities keep consuming, despite dwindling supplies. The 2016 meeting of the Society for Freshwater Science will be held in Sacramento California at a time when the State is experiencing the worst drought in its modern history. Although droughts are not uncommon in the Western US and other semi-arid regions of the world, expanding human populations have accelerated the loss of freshwater resources and the impacts to aquatic organisms. The theme of the 2016 meeting of the Society for Freshwater Science will focus on declining freshwater availability and explore issues of freshwater depletion, the consequences for freshwater ecosystems, and potential solutions.



sfs2015

OUR FRESHWATER FUTURES

MILWAUKEE, WISCONSIN, USA

The 21st century will be a time of choices for the world's freshwater ecosystems. Human population and economic growth is on a path to greatly increase demands on freshwater resources, which are already unsustainably high in many parts of the world. Will we make good choices that satisfy human needs while sustaining high levels of biodiversity and ecosystem function? Or will we continue to degrade freshwater ecosystems while failing to provide adequate water to the world's poor? How will freshwater science contribute to the search for good solutions and their implementation?

As one of the world's leading groups of freshwater scientists, the Society for Freshwater Science has chosen "Our Freshwater Futures" as the theme for its 2015 annual meeting in Milwaukee. Plenary sessions will feature leading freshwater scientists giving their insights into the problems that freshwater ecosystems and human societies are facing, and every special session will include a talk that envisions future directions for the field covered by the special session. We invite you to join us on the shores of Lake Michigan as SFS considers the future of the world's fresh waters.



ABOUT THE 2015 MEETING LOGO

The 2015 SFS meeting logo features a Hine's Emerald dragonfly (*Somatochlora hineana*), a federally-endangered species whose largest breeding population is in Door County, Wisconsin. The "venation" patterns on three of the dragonfly's wings represent the three major freshwater habitats: riverine (a stream network), lacustrine (a bathymetric map), and palustrine (the USGS map symbol for wetlands). The final dragonfly wing contains the Milwaukee skyline, portraying both the location of the 2015 meeting and the potential future of increasing urbanized influences on freshwater systems. The meeting logo was designed by SFS member and Wisconsin resident Gina Laliberti.