

UPDATED 22 MARCH



SCIENCE ATLANTIC ENVIRONMENT VIRTUAL CONFERENCE 2023

SATURDAY, MARCH 25, 2023

Science Atlantic Environment Conference 2023

MARCH 25
HOSTED VIRTUALLY BY
GRENFELL CAMPUS, MEMORIAL UNIVERSITY

Conférences en environnement de Science Atlantique 2023

25 MARS
CONFÉRENCE VIRTUELLE ORGANISÉE PAR
CAMPUS GRENFELL, UNIVERSITÉ MEMORIAL

Dear Eminent Undergraduates, Graduate Students, and Colleagues,

Please accept my sincere welcome and appreciation for participating in the virtual 2023 Science Atlantic Environment Conference that is held at the Grenfell Campus of Memorial University which is in traditional Mi'kmaq territory. Acknowledged as well are the diverse histories and cultures of the Beothuk, Mi'kmaq, Innu, and Inuit of the province of Newfoundland and Labrador.

My colleagues in the Environmental Science Program have been working tremendously to organize this conference which will be a promising venue for all of you to share great research ideas, explore significant collaborations, expand networking opportunities, and develop excellent communication skills.

I wish you the best luck at the conference and with your presentations.

Yours truly,
Morteza Haghiri, PhD
Interim Dean and Professor
School of Science and the Environment
Memorial University – Grenfell Campus

Dear Conference Attendees,

Welcome to the 2023 Science Atlantic Environment Conference, held this year (virtually) at Memorial University's Grenfell Campus in beautiful western Newfoundland. This is a great opportunity for everyone to hear about some of the wonderful environmental research going on in universities all over Atlantic Canada. It is also an opportunity to connect with students and faculty who are passionate about research and knowledge in many fields. The diversity of research topics presented at the conference is impressive and covers a wide range of environmental issues.

I'd like to thank Science Atlantic and MUN-Grenfell Campus (School of Science and the Environment, Office of Associate Vice-President Research and Graduate Studies, and Information Technology Services) for financial and logistical support for this conference. Thank you to Grenfell SAEC organizing committee. Thanks also to all the faculty members at the regional universities who work with students and encourage them to come to events like these. The enthusiasm of student presenters and attendees is what makes these conferences work.

Have a great conference!

*Christine Campbell, Ph.D., Chair of SAEC 2023 Organizing Committee
Science Atlantic Environment Representative at Memorial University – Grenfell Campus.*

**Thank you to our Sponsors for helping to make
this conference a success!**



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CONFERENCE SCHEDULE (all times are listed in Newfoundland Time, so ½ hour ahead of AST!)

All virtual rooms should be accessed through Fourwaves Sessions on the Conference Site

Friday March 24th 9:00 am to 11:00 am Drop-in rehearsal for POSTER presentations.

Friday March 24th 11:00 to 1:00 pm Drop-in rehearsal for ORAL presentations

Check-in and drop-in rehearsal day – see instructions under Conference Logistics.

Saturday March 25th

9:00 -9:30 **Presenters** check into Fourwaves Oral Presentation Sessions for audio/visual check 15 mins before start of their session

9:30-9:50 **Welcome** and logistics
Welcome and Introduction Session

9:50-11:10 **Student Presentations** in two concurrent sessions
Undergraduate Oral Presentations Session 1;
Graduate Oral Presentations Session 1

11:10-11:30 **Coffee break** and Networking Session

11:30-12:30 **Student Presentations** in two concurrent sessions
Undergraduate Oral Presentations Session 2;
Graduate Oral Presentations Session 2

12:30-13:15 **Lunch break** and Networking Session

13:15-14:45 **Virtual Poster Presentations**
Poster Session

14:45-15:15 **Coffee break** and Networking Session
Separate Judges' meeting

15:15-16:15 **Plenary Speaker – Dr. Russell Wyeth**
Plenary Session and Student Awards Presentation

16:15-16:40 **Awards** presentation
Plenary Session and Student Awards Presentation

CONFERENCE LOGISTICS

This conference is being hosted using the online application Fourwaves, with all oral presentations occurring in virtual meetings hosted by MS Teams. For optimal engagement with this virtual conference, please take the following actions before the conference begins: make sure that your computer is updated; download MS Teams to your computer if it is not already loaded (although browser access is possible); and download and use Chrome as the best internet browser for running MS Teams meetings.

You may need to download the MS Teams app which can be accessed from the website: <https://www.microsoft.com/en-ca/microsoft-teams/download-app>

All conference **oral presentations** will occur in Sessions within Fourwaves, as listed on the Schedule Page in the conference website, and in the Conference Program. When you enter a session, you will automatically launch and enter the associated MS Teams virtual meeting.

If you have technical difficulties accessing any components of the virtual conference, please email avrequest@grenfell.mun.ca for help.

The **poster session** will also be hosted on the FourWaves conference website. Please visit the following website for instructions on attending the virtual poster session: <https://help.fourwaves.com/how-does-the-virtual-poster-session-platform-work-the-day-of-the-event>.

Drop-in Rehearsal for ALL PRESENTERS on Friday, March 24. Access practice rooms through Fourwaves at the assigned times. Poster presenters meet between 9 and 11 am and oral presenters meet between 11 am and 1 pm. Have your presentations ready to test!

All presenters need to access the MS Team set up for the conference during the drop-in hours listed above. This is critical for the presenters because we will test your screen-sharing and set-up to make sure your talks go smoothly.

After the check-in we ask that you send a copy of your presentation to ccampbell@grenfell.mun.ca so that we can have a back-up in case your screen-share capacity mysteriously disappears between Friday and Saturday.

Plenary Talk:

Foolish Goal or Foul-less Gold: Low Toxicity Antifouling in Marine Environments

Dr. Russell Wyeth
Centre for Biofouling Research and Dept of Biology
St. Francis Xavier University



Biofouling is the accretion of biological matter on surfaces exposed to aqueous environments. In the ocean, biofouling has numerous negative impacts for industry, society and the environment. Combatting marine biofouling in the past largely depended on toxic chemicals, most of which have now been regulated or banned. Although numerous alternative coatings have been explored, there remains widespread demand for effective, environmentally-friendly antifouling technologies. Antifouling coatings can incorporate biocides that deter settlement of organisms, or surface properties that reduce the attachment strength of foulers. Our research has focused on the possibility of combining both approaches. An initial serendipitous discovery found that a (toxic) surfactant incorporated into siloxane-based fouling release material could enhance antifouling effects. This led us to test the effectiveness of similar coatings incorporating biodegradable surfactants to minimize the potential for widespread environmental effects. However, to date, we have not found comparable effects with these hybrid coatings. In addition to chemical-based methods, approaches to generating conditions that deter the development of biofouling communities are also being explored. Our efforts have focused on testing ultraviolet-C light (UV-C) as an antifoulant. Field experiments have demonstrated periodic UV-C illumination could markedly reduce fouling by tunicates, bryozoans and mussels, and we continue to assess the relative effectiveness of different temporal patterns of UV-C illumination. Efficacy being equal, this method has a potential advantage over chemical antifoulants in that there is no possibility whatsoever of accumulation in the environment. The question still remains, however, whether the longer term goal of impeding problematic macrofouling without substantial environmental effects is actually possible.

Dr Russell C. Wyeth, Professor in the Department of Biology at St. Francis Xavier University. RCW is an invertebrate zoologist, animal behaviourist, and neurobiologist, so he's really interested in how the brains of marine invertebrates make them creep, crawl and scuttle in response to food or mates or predators. He earned his degrees at the University of Victoria (BSc, 1996) and University of Washington (PhD, 2004). Moving from that coast to this coast, he was a post-doctoral researcher at Dalhousie University before starting at StFX in 2007. He just likes hanging out in or near seawater, so that's where he does most of his science. Over the last 10 years, the realization that marine biofouling is the consequence of a behaviour (settlement) has underpinned a substantial new research theme exploring possible alternative technologies for reducing marine biofouling while avoiding broader environmental contamination.

DETAILED SCHEDULE 2023 – listed in Newfoundland time! (so ½ hour earlier in Atlantic time!)

All virtual rooms should be accessed through Fourwaves Sessions on the Conference Site

Saturday March 25th

9:00 – 9:30 am	Check in to respective Fourwaves Presentation Sessions 1 and 2 for Undergraduate and Graduate presenters	
9:30 – 9:50 am	Welcome and Introduction Session	
	Undergraduate Student Presentations Session 1	Graduate Student Presentations Session 1
9:50 – 10:10 am	BAHEN, GENEVA Telling the North American beaver tale: modelling <i>Castor canadensis</i> distribution in Mi'kma'ki (Nova Scotia, Canada)	ARMSTRONG, GABRIELLE The Occurrence and Preference of Anthropogenic Materials in European Starling (<i>Sturnus vulgaris</i>) Nests
10:10 – 10:30 am	BENNETT, SAMANTHA Effects of Jumping Worms on European Worms and Soil Properties	CUSAK, SARAH Predictive modelling of habitat suitability for Yellow Lampmussel (<i>Lampsilis cariosa</i>) in the lower Wolastoq Saint John River Watershed, New Brunswick
10:30 – 10:50 am	BRAKE, TIANNA Comparison of Copper Complexation with Natural Organic Matter in Standards, Leaf Leachate, and Oilsands Pit Lake Waters	
10:50 – 11:10 am	MARTIN, HAILEY Morphological and physiological adaptations of the parasitic lichen <i>Ochrolechia frigida</i> in coastal habitats of Newfoundland	
11:10 – 11:30 am	Coffee Break and Networking Session	

	Undergraduate Student Presentations Session 2	Graduate Student Presentations Session 2
11:30 – 11:50 am	PATTERSON, KATHRYN Variation in body condition within a population of bats that engage in differential migration	GREELEY, DARREN Thermal habitat selection and movement behaviour of Yellow Lampmussel (<i>Lampsilis cariosa</i>) in the Wolastoq Saint John River Watershed, New Brunswick
11:50 – 12:10 am	REYNOLDS-WHITE, CLARA Benefits of a mobile market: A case study of the Good Food Bus in Cape Breton, Nova Scotia	PATERSON, STEPHEN Factors affecting the spread of invasive earthworms in the Yukon
12:10 – 12:30 pm	HENNIFFENT, RILEY Plant growth parameters as affected by organic and inorganic amendments, and the influence of peat moss in metal and hydrocarbon contaminated soils.	SILVER, MADISON Meta-analysis of the impacts of chloride-based road salts on biodiversity and ecosystems
12:30 – 12:50 pm	LUNCH BREAK and Networking Session 12:30 TO 1:15 PM	
12:50 – 1:15 pm		
1:15 – 2:45 pm	Virtual Poster Presentations Session	
1	AKIYAMA, KAGAN The Great Dusty North?	
2	COLPITTS, LAUREN Interacting effects of light and temperature on the activity of terrestrial isopods	
3	FRANCOIS, JULIE ANNE Examination of Diurnal Activity Patterns, Social Behavior, Enclosure Use, and Impact of Visitor Density in Four Species of Penguins in Captivity.	
4	HOLLOWAY, TAYLOR Changes in feeding behavior of woodlice on lichen thalli after removal of protective secondary metabolites.	
5	JACOBS, KIANA Localized herbivory of woodlice on a foliose lichen	
6	LOWTHER, LAUREN An Analysis of Introductory Environmental Science Textbooks' Approaches to Commonly Held Climate Change Misconceptions	
7	MALLET, JOSIE Regional Marine Trends Following Cessation of CO ₂ Emissions: What Will Be the Future of Coral Reefs?	

8	O'NEILL, MEAGHAN The effect of lichen water content on foraging preferences of woodlouse
9	POIRIER, SAMUEL An Overview and Analysis of MMV Techniques at Two of Canada's Premier CCS Facilities
10	RADOMSKE, LEVYN Characterizing the Conifer Gradient from the Halifax Peninsula to the Hinterlands of the Halifax Regional Municipality
11	RYAN, LENAYA The Impact of Chain Pickerel Invasion on Yellow Lampmussel and Their Fish Host in Cape Breton, Nova Scotia
12	WALTERS, IZEK Woodlice feeding preferences between two species of lichens in western Newfoundland
13 (Grad)	POWER, CAMERON Current Status and Future Plans for the St. Mary's Atmospheric Observatory in Halifax
14 (Grad)	SUBRAMANIAM, DASINAA Could using earthworms be the potential ecofriendly approach on minimizing the impacts of improper disposal of food waste in Canada?
15 (Grad)	YU, NAIZHEN Cu-doped anatase TiO ₂ : An efficient visible-light photocatalyst for water treatment
2:45 – 3:15 pm	Coffee Break and Networking Session (Separate meeting for Judges)
3:15 – 4:15 pm	Plenary speaker – DR. RUSSELL WYETH Foolish Goal or Foul-less Gold: Low Toxicity Antifouling in Marine Environments Plenary Session and Student Awards
4:15– 4:40 pm	Award Presentations - Plenary Session and Student Awards

ONLINE CONFERENCE ETIQUETTE

- Please mute your microphones at all times except when asking a question.
- Use the “raise hand” button to ask questions, or type them into the chat window.
- We encourage keeping your camera on in smaller groups, you may need to turn it off when the groups are larger.
- Speakers should keep their cameras on when presenting.
- Poster presenters should keep their cameras when presenting their posters. Poster visitors are strongly encouraged to keep their cameras on while chatting to the presenters, this makes it a much more engaging experience.
- Each Presentation Session within the Fourwaves rooms will be moderated by hosts for that meeting. Please do not start your own “meeting” at any point, you will get lost!
- If in doubt, follow the links from Fourwaves into the channel or meeting you want to be in.
- When you are finished an MS Teams meeting, please click leave to leave the meeting.