



Joint Meeting of the
**Canadian Society for Ecology and Evolution
and the Canadian Botanical Association**
CSEE-CBA 2023 Winnipeg
11 - 14 June, 2023

Réunion conjointe de la
**Société canadienne d'écologie et d'évolution
et de l'Association botanique Canadienne**
SCEE-ABC 2023 Winnipeg
11 - 14 juin, 2023

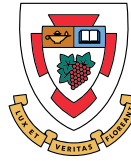
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Table of Contents

Table des matières

Welcome	5
Downtown Winnipeg Suggested Restaurants and Pubs	8
Schedule Overview	10
Plenary talks	17
Workshops and special sessions	23
Field trips	28
Symposia	30
Detailed Schedule: June 11	35
Detailed Schedule: June 12	36
Detailed Schedule: June 13	44
Detailed Schedule: June 14	53
Advertisements from Sponsors and other supporters of CSEE-CBA	58

Welcome. Boozhoo. Bonjour.



Sparky Stenaas

We are excited to welcome delegates, sponsors, and exhibitors from across Canada and elsewhere to Winnipeg for CSEE-CBA 2023, affectionately known as #BEEPEG2023 (BEE = Botany, Ecology and Evolution, PEG = Winnipeg). We are thrilled by the number of scientists coming from different workplaces, including scientists not only from universities but from agencies, large and small NGO's, and industry. We are heartened by the participation of Indigenous scientists and conservation professionals and encourage delegates who identify as western scientists to take advantage of this opportunity to learn how to “do better” in their interactions with their Indigenous colleagues, Indigenous Peoples more broadly, and in conserving the land we know as Canada.

The LOC worked hard on several equity initiatives to improve access to this meeting by a broad range of scientists. This includes the unusual-for-a-conference act of issuing a Request for Proposals and then establishing a child-minding service at the Convention Centre. This includes opportunities for Indigenous undergraduates from two local universities to participate in the conference, including presenting posters. This includes partnering with outstanding organizations such as the Canadian Black Scientists Network, an organization led by CSEE behavioural ecologist Dr. Maydianne Andrade to highlight and support the excellent science done by Black scientists in Canada. Our efforts to promote equity also included adopting a rigorous COVID policy, so that individuals who are vulnerable and not yet comfortable attending large gatherings would be more likely to participate. We were surprised and pleased to see the enthusiastic response of delegates to all of these initiatives. Who knew that a rigorous covid policy would spark a run of registrations and adoption of similar policies by other conferences?!

We now look forward to reuniting with old friends and meeting new ones as we embark on four days of amazing science interwoven with enjoyable events as you get to know our city.

LAND ACKNOWLEDGEMENT

This conference is taking place on Treaty One territory and is located on the traditional territory of the Anishinaabeg, Cree, Oji-Cree, Dakota and Dene Peoples and on the homeland of the Métis Nation. We acknowledge that our water is sourced from Shoal Lake 40 First Nation. The Local Organizing Committee recognizes the role of ecological, evolutionary, and botanical sciences in contributing to historical and ongoing acts and systems of colonization in Canada and around the world. We encourage all delegates to commit themselves, during this meeting and in the future, to questioning and challenging these systems in ways that support the decolonizing work being done by Indigenous Peoples throughout Canada and elsewhere.

Welcome. Boozhoo. Bonjour.

LOCAL ORGANIZING COMMITTEE

The CSEE-CBS 2023 Local Organizing Committee includes people from the University of Winnipeg, University of Manitoba, Assiniboine Park Zoo, Fisheries and Oceans Canada, and the Canadian Wildlife Service.

Local leads: Bruce Ford (CBA), Jim Hare (CSEE), John Markham (CBA), Sara Good (CSEE), Susan Lingle (CSEE)

Other LOC members: Alberto Civetta, Aleeza Gerstein, Anne Worley, Avery Keen, Az Klymiuk, Cassandra Debets, C-Jae Breiter, Colin Garroway, Craig Willis, Darren Gillis, Delezia Singh, Emily Runnells, Jacalyn Grey, Justine Hudson, Kevin Fraser, Laura Burns, Lynnae Martin, Megan Miller (aka, "WebTeam"), Miya Warrington, Paulson Des Brisay, Shayla Jackson, Stephen Petersen

Executive members: Jeannette Whitton, CSEE President; Mihai Costea, CBA President; Victoria Glynn, CSEE Student/Post-doc councillor

Other Volunteers: Amy Pitzel, Anouska Agarwal, Fiona McNicol, Janelle Laing, Mikala Epp, Misbah Khaliq, Pranav Sadana, Cam Rey-Dubois, Katrina Wilcox

We thank the following people for extensive assistance during conference planning: Anne-Sophie Caron, Lauren Krawchuk, Pam Delorme; organizers of past meetings including John Richardson (CSEE 2021), Andrew McDougall (CSEE 2018), Steve Heard and Emily Austen (CSEE 2019), and Nicole Fenton, Past-President CBA; and University of Winnipeg or UWinnipeg Foundation employees Melannie Soukhalom, Mark Bezanson, Teresa Murray and Hema Vyas. We are grateful to many individuals who screened abstracts for the CSEE student paper award competition and new volunteers who will help during the meeting itself. Last, we thank Minnesota naturalist Sparky Stensaas for permission to liberally use his beautiful photographs of Manitoba plants and animals on the conference website and in this program.

CODE OF CONDUCT AND COVID CODE OF CONDUCT

The Canadian Society for Ecology and Evolution (CSEE) and the Canadian Botanical Association (CBA) are committed to maintaining a safe, inclusive, and respectful environment, and to promoting lively and open discussion among participants in its 2023 meeting in Winnipeg. The code of conduct used at previous CSEE meetings was modified for the 2023 meeting. All conference participants (delegates, exhibitors and sponsors) indicate that they will uphold the code of conduct when registering for the meeting. Please take a minute to acquaint yourself with the CSEE-CBA 2023 Code of Conduct.

Several individuals have volunteered to act as Code of Conduct Advocates. If you are the subject of inappropriate or unacceptable behaviour of any sort or witness such behaviour, we encourage you to file a complaint to one of these advocates or to a member of the Local Organizing Committee. Their role is to listen and support you and to report the incident to a board comprised of executive members of one or both societies. You can also report a Code of Conduct violation by sending an email to beepeg2023@gmail.com.

You can identify Code of Conduct Advocates by the blue sticker on their name badge. Their names are listed here:

Ershiya Bagheri C-Jae Breiter
Daniel Dupont Aleeza Gerstein
Jacalyn Grey James Hare
Shayla Jackson Susan Lingle

CSEE-CBA 2023 COVID-19 POLICY

Following considerable demand from conference delegates, and an approach rooted in science, the Local Organizing Committee developed a rigorous COVID-19 policy, modifying the CSEE-ESA policy from 2022. This multi-faceted approach relies on developing floor plans that provide "mask always" areas where individuals can be assured that other individuals never remove their mask; monitoring air quality; spreading out seats in presentation venues when possible; providing rapid tests for each delegate to use daily; and requiring masks at all indoor venues, except for brief periods of eating or drinking. Please review the CSEE-CBA 2023 COVID-19 Policy and COVID Code of Conduct.

Welcome. Boozhoo. Bonjour.

The Code of Conduct Advocates listed above will monitor compliance with the COVID-19 Policy. If someone removes their mask other than for short periods of eating or drinking, they will request that the person replaces their mask and remind them of the policy, which all delegates will be required to sign when registering. Continued violation of the CSEE-CBA 2023 COVID Code of Conduct may result in removal from event activities without warning or refund.

If you have questions about the Conference: check at the Information Desk next to the Registration Desk, or at the Information Desk in the Exhibitor Hall.

To access free WIFI at RBC Convention Centre: network: Telus (unsecured; no password)

Discount information for Canadian Museum for Human Rights and the WAG / Qaumajuq.

For a discount (\$10 admission) to enter Canadian Museum for Human Rights between June 9-16, 2023: Ticketing | CMHR Ticketing (humanrights.ca)

Promo Code: CSEEWPG

For a discount (\$10 admission) to enter the WAG / Qaumajuq between June 9-16, 2023.

Show your lanyard or other evidence of attending CSEE-CBA when you enter.

Note: Both places offer free admission to Indigenous persons at all times.

SAFETY

We hope your participation in CSEE-CBA 2023 and time in Winnipeg proves professionally rewarding and thoroughly enjoyable. Particularly when exploring downtown Winnipeg at night, travel with friends, try to stay on well-traveled routes, and feel free to avail yourself of Safe Walk services, listed below, which are available to both visitors and residents. Also feel free to approach any member of The Local Organizing Committee for any assistance you may require during your stay in Winnipeg.

UWinnipeg Safe Walk: (204) 786-6666 (campus security), operates 24/7. The UWinnipeg Safe Walk service is especially useful for people staying at McFeetors Hall. The Safe Walk staff will accompany you on or within 1 block of the UW campus.

Downtown Community Safety Partnership (DCSP): 204-947-DCSP (3277); operates 24/7 unless they are unavailable due to an emergency. Call 30-60 minutes before you need the walk. The DCSP offers the largest geographic range of the Safe Walk options, and can accompany you from the Forks, Exchange District, Downtown, or to the west side of the UWinnipeg campus (up to Spence St).

Downtown BIZ Safe Walk: (204) 958-7233. operates from 0730-2330 hrs daily. The Downtown Biz Safe Walk provides a local walk in the downtown area.

Exchange District Patrol's BIZ Safe Walk: (204) 791-3161, operates from 0800 hrs-midnight Tuesday through Saturday and 0800-1600 hrs on Monday within the Exchange District.

Downtown Winnipeg Suggested Restaurants and Pubs

Resto 12 (12th floor Radisson Hotel) 288 Portage Ave. 24 Hrs 10 minute walk

(time represents average walking time from RBC Convention Centre)

BREAKFAST-LUNCH-DINNER

Hargrave St. Market 242 Hargrave St 0800-2000 (except Sunday, 0900-1800).

Gusto North (Pizza), Yard Burger, The Good Fight Taco, Saburo Ramen & Donburi, Fools & Horses (coffee, baked goods), Miss Browns Brunch Café & Smoked Meats, Rose Bar, Lake of the Woods Brewing Company. 5 minute walk.

Stella's 460 Portage Ave 0700-2200 (7 days a week). 10 minute walk.

BREAKFAST-LUNCH

Bagelsmith 185 Carlton St. 0800-1630 (Mon-Fri), 0900-1500 (Sat), Closed (Sun). *Great* Montreal-style bagels and sandwiches. 2 minute walk.

Oscar's Deli 175 Hargrave St 0700-1400 (Mon-Sat), Closed (Sun). A classic Winnipeg deli and breakfast place. Over 90 years in business. 3 minute walk.

The Don 120 Donald St 0730-1430 (Tues-Fri) 0730-1500 (Sat-Sun). Honest breakfast at a reasonable price. 4 minute walk.

C. Jay's Cafe 444 St Mary Ave 0700-1600 (Mon-Fri but closes 1400 on Tues), Closed (Sat-Sun). 5 minute walk.

Nick's On Broadway 287 Broadway 1100-1400 (Mon-Fri). 6 minute walk.

Modern Electric Lunch 232 Main St 0730-1400 (Mon-Fri), 0900-1500 (Sat-Sun). 10 minute walk.

Bronuts 100 King St 0800-1500 (Mon-Thurs), 0800-1600 (Fri), 0900-1600 (Sat), 0900-1400 (Sun). 17 minute walk

Clementine Cafe 123 Princess St 0900-1400 (7 days a week). Phenomenal brunch. 18 minute walk.

LUNCH-DINNER

East India Co. 349 York Ave 1130-2130 (Mon-Fri), 1630-2130 (Sat), 12:00-21:00 (Sun). Great buffet close to the Convention Centre. 1 minute walk.

Elephant & Castle Pub 350 St Mary Ave 1130-0000 (Sun-Wed), 1130-0100 (Thurs-Sat). 3 minute walk.

Shannon's Pub 175 Carlton St 1130-0200 (Fri), 1600-0200 (Tues-Thurs & Sat), Closed (Sun-Mon). 2 minute walk.

Ivory 141 Donald St 1130-1400 & 1630-2100 (Mon-Fri), 1700-2100 (Sat-Sun). Vegan friendly. Excellent buffet. 3 minute walk.

Thida's Thai Restaurant. 78 Donald St. Excellent and inexpensive Thai food. 3 minute walk.

Ming Court 236 Edmonton St 1130-1430 & 1700-0030 (Mon-Fri), 1700-0030 (Sat-Sun). 4 minute walk.

Honu Poke 190 Smith St 1130-2000 (Mon-Fri), 1200-2000 (Sat). 5 minute walk.

Taste of Mediterranean 244 Kennedy St 1100-2000 (Mon-Sat), Closed (Sun). 6 minute walk.

Capital Grill 275 Broadway 1100-2100 (Tues-Sat), Closed (Sun-Mon). 6 minute walk.

Tavern United 345 Graham Ave 1100-2300 (Mon-Tues), 1100-0000 (Wed-Fri), 1400-0000 (Sat), 1400-2300 (Sun). Standard bar, great wings, exceptional (for Winnipeg) rooftop patio. 6 minute walk.

White Star Diner 258 Kennedy St 1100-1600 (Mon-Wed), 1100-1900 (Thurs-Fri), Closed (Sat-Sun). 7 minute walk.

The Oval Room Brasserie The Fort Garry Hotel. 222 Broadway 0700-2300 (Mon-Fri), 0800-2300 (Sat), 0800-2200 (Sun). 10 minute walk.

Les Saj 480 Portage Ave 1100-2200 (Mon-Sat), 1200-1900 (Sun). Middle Eastern food. 10 minute walk.

Merchant Kitchen 314 Donald St. 1130-2200 (Mon-Wed), 1130-2300 (Thur-Fri), 1600-2200 (Sat), Closed (Sun). Globally-influenced and elevated street food. Vegan friendly. 10 minute walk.

Banh Mi King 510 Portage Ave 1100-2030 (Mon-Fri), 1200-2030 (Sat), Closed (Sun). 12 minute walk. A favorite for UWinnipeg'rs.

Downtown Winnipeg Suggested Dining and Drinking Venues

Famena's Famous Roti & Curry 295 Garry St 1100-1700 (Mon-Sat), Closed (Sun). Best roti in Winnipeg. Worth a visit. 12 minute walk.

Good Will Social Club 625 Portage Ave 1000-2000 (7 days a week). 15 minute walk.

Homers 520 Ellice Ave 1130-1500 (Mon-Wed), 1130-1930 (Thurs-Fri), 1400-1930 (Sat), Closed (Sun). Greek food. 16 minute walk.

Peasant Cookery 293 Bannatyne Ave 1130-2300 (Tues-Thurs), 1130-0000 (Fri), 1600-0000 (Sat), Closed (Sun-Mon). Good upscale dining. 17 minute walk.

Rosé Coffee and Wine Bar 474 Main St 1100-1500 & 1700-2200 (Mon-Fri), 1200-2300 (Sat), 1200-1700 (Sun). 17 minute walk

King's Head Pub 120 King Street 1100-0200 (Mon-Sat), 1200-0200 (Sun). A Winnipeg institution. Nice patio. 18 minute walk.

Little Brown Jug 336 William Ave 1200-2200 (Tues-Thurs), 1200-0000 (Fri-Sat), 1500-2100 (Sun). Taproom and Nice patio. 19 minute walk.

Amsterdam Tea Room 103-211 Bannatyne Ave 1200-0000 (Mon-Sat), Closed (Sun). Nice patio. 18 minute walk.

The Beer Can 1 Granite Way 1200-0000 (7 days a week, weather permitting) Nice patio. 14 minute walk.

Across the Board Game Café 211 Bannatyne Ave 1100-2200 (Sun-Thurs), 1100-0000 (Fri-Sat), Closed (Mon). Good food and hundreds of games for your pleasure. 18 minute walk.

Hy's Steakhouse 1 Lombard Ave 1130-2200 (Mon-Thurs), 1130-2300 (Fri), 1500-2300 (Sat), 1500-2100 (Sun). 17 minute walk.

DINNER

Ichiban Japanese Steakhouse 189 Carlton St 1700-2100 (Wed-Sun), Closed (Mon-Tues). 2 minute walk.

Affinity Vegetarian Garden 208 Edmonton St 1630-2100 (Mon-Sat), Closed (Sun). Vegan friendly. 3 minute walk.

La Roca 155 Smith St 1600-2230 (Tues-Wed), 1600-2300 (Thurs), 1600-0200 (Fri-Sat), Closed (Sun-Mon). Mexican food. 5 minute walk.

High & Lonesome 234 Main St 2030-0200 (Thurs-Sat), 1900-0100 (Sun & Tues), Closed (Mon & Wed). Best downtown music venue & excellent Mexican food. 10 minute walk.

Deer + Almond 85 Princess St 1700-2200 (Tues-Thurs), 1700-2300 (Fri-Sat), Closed (Sun-Mon). One of Aleeza's favourites. 16 minute walk.

Tipsy Cow 285 Portage Ave 1600-2130 (Mon-Sat), Closed (Sun). 10 minute walk.

Yellow Dog Tavern 386 Donald St 1600-0000 (Tues-Thurs), 1600-0100 (Fri), 1700-0100 (Sat), Closed (Sun-Mon). John's favorite pub in downtown. 13 minute walk.

MORNING-NIGHT TREATS

Fête Ice Cream & Coffee 300 Assiniboine Ave 1000-2200 (7 days a week). Ice cream, coffee and pastries next to a downtown dog park. Close to Fort Garry Hotel. 11 minute walk from Convention Centre.

Schedule Overview

Aperçu de l'horaire

Sunday, June 11, 2023

9:00 AM

WORKSHOP 1	An R Crash Course for Biologists: from Basic R to Advanced Visualizations, GLMs, GAMs, and Machine Learning Models	Meeting Room 7-8	Ends at 4:00 PM
WORKSHOP 2	Developing a reproducible workflow in R using functions, {targets} and {renv}	Meeting Room 9-10	Ends at 4:00 PM
WORKSHOP 3	GitHub for biologists: A painless introduction to a powerful collaboration tool	Meeting Room 3	Ends at 11:00 AM
WORKSHOP 4	The next steps in the establishment of a Long-Term Research network in Canada	Meeting Room 4	Ends at 11:00 AM
WORKSHOP 7	Communicating science on social media	Meeting Room 11-12	Ends at 10:50 AM
CSEE COUNCIL MEETING		Meeting Room 6	Ends at 4:00 PM

11:00 AM

WORKSHOP 9	A workshop on publishing in peer-reviewed journals for early-career researchers	Meeting Room 11-12	Ends at 12:30 PM
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1:00 PM

WORKSHOP 6	An Intro to RMarkdown for productive and reproducible science	Meeting Room 3	Ends at 3:00 PM
WORKSHOP 8	SWEEET: Funding and open science as avenues for improving accessibility and equity in science	Meeting Room 4	Ends at 5:00 PM

3:45 PM

CBA OUTGOING EXECUTIVE		Meeting Room 16	Ends at 5:15 PM
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7:00 PM

OPENING RECEPTION AT THE WAG / QAUMAJUQ		300 Memorial Blvd.	Ends at 9:30 PM
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COFFEE AVAILABLE

East Concourse – 8:30 AM - 9:00 AM, 10:30 AM - 11:00 AM, 2:45 PM - 3:15 PM

FIELD TRIPS TODAY

Other venues

Schedule Overview

Aperçu de l'horaire

Monday, June 12, 2023

8:30 AM

SYMPOSIUM 2	Invited Talks. Genetic Parallelism and Constraints on Evolution	Meeting Room 1	Ends at 11:30 AM
CONTRIBUTED TALKS	Population Dynamics	Meeting Room 2	Ends at 10:00 AM
SYMPOSIUM 5	Invited Talks. Welcome to the Future: How Technology can Help us Characterize Habitat and Ecological Relationships	Meeting Room 3	Ends at 10:00 AM
CONTRIBUTED TALKS	Community Ecology - Plants	Meeting Room 4	Ends at 11:15 AM
CONTRIBUTED TALKS	Conservation Biology and Species at Risk I	Meeting Room 7-8	Ends at 10:00 AM
CONTRIBUTED TALKS	Plant/Microbe Interactions	Meeting Room 9-10	Ends at 10:00 AM
SYMPOSIUM 7	Invited Talks. The science and art of cytogenetics: celebrating Canadian contributions to the field of plant cytotaxonomy	Meeting Room 11-12	Ends at 11:00 AM

10:15 AM

CONTRIBUTED TALKS	Spatial Ecology	Meeting Room 2	Ends at 11:30 AM
CONTRIBUTED TALKS	Plant-Insect Interactions	Meeting Room 3	Ends at 11:30 AM
CONTRIBUTED TALKS	Invasive Species I	Meeting Room 7-8	Ends at 11:30 AM

10:30 AM

CONTRIBUTED TALKS	Communication I	Meeting Room 9-10	Ends at 11:30 AM
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11:40 AM

LUNCH MEETING: WILDLIFE ACOUSTICS	Meeting Room 9-10	Ends at 12:40 PM
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12:00 PM

CBA ECOLOGY SECTION MEETING	Meeting Room 1	Ends at 12:45 PM
CBA SYSTEMATICS SECTION MEETING	Meeting Room 2	Ends at 12:45 PM
CBA MYCOLOGY SECTION MEETING	Meeting Room 3	Ends at 12:45 PM
CBA DEVELOPMENT	Meeting Room 4	Ends at 12:45 PM

Schedule Overview

Aperçu de l'horaire

Monday, June 12, 2023 (cont'd)

12:50 PM

OPENING PLENARY Welcoming remarks at 12:50 PM. Opening Plenary at 1:00 PM: York 2-4 Dr. Carly Ziter, Understanding biodiversity and ecosystem services across urban landscapes Ends at 2:00 PM

2:30 PM

LIGHTNING TALKS I Meeting Room 1 Ends at 3:00 PM

CONTRIBUTED TALKS Effects of Climate Change Meeting Room 2 Ends at 4:30 PM

CONTRIBUTED TALKS Species Level Genomics Meeting Room 3 Ends at 4:15 PM

SYMPOSIUM 9 Contributed Talks. The Science of Decision Support Systems in Conservation Ecology Meeting Room 4 Ends at 4:30 PM

CONTRIBUTED TALKS Ecology, Behaviour and Evolution of Disease Meeting Room 7-8 Ends at 4:30 PM

CONTRIBUTED TALKS Social Behaviour Meeting Room 9-10 Ends at 4:00 PM

CONTRIBUTED TALKS Trophic Interactions Meeting Room 11-12 Ends at 3:30PM

3:15 PM

LIGHTNING TALKS II Meeting Room 1 Ends at 3:50 PM

3:30PM

SYMPOSIUM 8 Contributed Talks. Integrating Equity into Urban Ecology and Evolution: Diverse and Interdisciplinary Perspectives for the Benefit of All Meeting Room 11-12 Ends at 4:30 PM

COFFEE BREAKS / EXHIBITOR HALL

10:00 AM - 10:30 AM, 2:00 PM - 2:30 PM

LUNCH

11:30 AM - 1:00 PM, brown bag lunch pickup in Exhibitor Hall (advance orders were required)

POSTER SESSION AND RECEPTION

Exhibitor Hall, 4:30 PM - 6:00 PM

PUBLIC PLENARY

Canadian Museum for Human Rights, 7:45 PM - 9:00 PM (doors open at 7:15 PM)
Dr. Allyson Menzies – Prioritizing Indigenous values in wildlife conservation

Schedule Overview

Aperçu de l'horaire

Tuesday, June 13, 2023

8:30 AM

SYMPOSIUM 1	Invited Talks. Ecological Dimensions of Hybridization	Meeting Room 1	Ends at 11:45 AM
SYMPOSIUM 3	Invited Talks. The Spatial-Social Interface: from Plants to Predators	Meeting Room 2	Ends at 10:00 AM
SYMPOSIUM 6	Invited Talks. The State of Plant Conservation in Canada	Meeting Room 3	Ends at 4:30 PM
CONTRIBUTED TALKS	Ecophysiology and Life History	Meeting Room 4	Ends at 9:45 AM
SYMPOSIUM 12	Invited Talks. Plant Development and Environmental Interactions	Meeting Room 7-8	Ends at 10:00 AM
CONTRIBUTED TALKS	Arctic Genomics	Meeting Room 9-10	Ends at 10:00 AM
SYMPOSIUM 11	Invited Talks. The Future of Herbarium Collections and Taxonomy in ecology and Evolutionary Studies	Meeting Room 11-12	Ends at 11:15 AM

10:30 AM

CONTRIBUTED TALKS	Plant Genomics	Meeting Room 2	Ends at 11:45 PM
CONTRIBUTED TALKS	Communication II	Meeting Room 4	Ends at 11:30 AM
CONTRIBUTED TALKS	Agroecosystems and Ecotoxicology	Meeting Room 7-8	Ends at 11:30 PM
CONTRIBUTED TALKS	Community Structure I	Meeting Room 9-10	Ends at 11:30PM

11:50 AM

NSERC DISCOVERY GRANT INFORMATION SESSION	Meeting Room 2	Ends at 12:35 PM
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12:15 PM

CBA-CSEE TEACHING SECTION MEETING	Meeting Room 4	Ends at 1:15 PM
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1:15 PM

CONTRIBUTED TALKS	Evolutionary Ecology of Vertebrates	Meeting Room 1	Ends at 2:45 PM
CONTRIBUTED TALKS	Population Genomics	Meeting Room 2	Ends at 2:45 PM
CONTRIBUTED TALKS	Reproductive Strategies I	Meeting Room 4	Ends at 2:15 PM
CONTRIBUTED TALKS	Population Ecology	Meeting Room 7-8	Ends at 2:45 PM

Schedule Overview

Aperçu de l'horaire

Tuesday, June 13, 2023 (cont'd)

1:15 PM

CONTRIBUTED TALKS	Community Structure II	Meeting Room 9-10	Ends at 2:00 PM
CONTRIBUTED TALKS	Conservation Biology and Species at Risk II	Meeting Room 11-12	Ends at 2:45 PM
LIGHTNING TALKS III		Meeting Room 1	Ends at 11:30 AM

2:15 PM

SYMPOSIUM 10	Contributed Talks. Microbial Ecology and Evolution	Meeting Room 4	Ends at 4:30 PM
CONTRIBUTED TALKS	Plant/Soil Microbe Interactions	Meeting Room 11-12	Ends at 4:00PM

3:00 PM

CONTRIBUTED TALKS	eDNA and Barcoding	Meeting Room 7-8	Ends at 4:30 PM
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3:15 PM

PANEL DISCUSSION	Bridging Western Science and Indigenous Approaches to Education, Research, and Conservation	Meeting Room 1	Ends at 4:15 PM
LIGHTNING TALKS IV		Meeting Room 2	Ends at 4:00 PM
CONTRIBUTED TALKS	Species Range Distribution	Meeting Room 9-10	Ends at 4:30 PM
WORKSHOP 5	Saving Data: A film screening and reflection by the Living Data Project participants	York 2-4 Plenary	Ends at 4:30 PM

COFFEE BREAKS / EXHIBITOR HALL

10:00 AM - 10:30 AM, 2:45 PM - 3:15 PM

LUNCH

11:45 AM - 1:15 PM, brown bag lunch pickup in Exhibitor Hall (advance orders were required)

POSTER SESSION AND RECEPTION 2

Exhibitor Hall, 4:30 PM - 6:00 PM

CBA WERESUB LECTURE

York 2-4, RBC Convention Centre, 7:30 PM - 8:30 PM

Dr. Wendy Untereiner – Animal-associated Ascomycota: the genus *Capronia*, Onygenales from snake hibernacula, and the xerophilic taxa inhabiting ant mounds

CSEE-CBA GS/PDF MIXER

The Good Will Social Club, 8:00 PM - 10:30 PM, Students and postdocs only

Schedule Overview

Aperçu de l'horaire

Wednesday, June 14, 2023

8:30 AM

SYMPOSIUM 8	Invited Talks. Integrating Equity into Urban Ecology and Evolution: Diverse and Interdisciplinary Perspectives for the Benefit of All	Meeting Room 1	Ends at 10:00 AM
SYMPOSIUM 9	Invited Talks. The Science of Decision Support Systems in Conservation Ecology	Meeting Room 2	Ends at 10:00 AM
SYMPOSIUM 10	Invited Talks. Microbial Ecology and Evolution	Meeting Room 3	Ends at 11:45 AM
SYMPOSIUM 1	Contributed Talks. Ecological Dimensions of Hybridization	Meeting Room 4	Ends at 10:00 AM
SYMPOSIUM 4	Invited Talks. The Evolution of Gene Expression and Regulation	Meeting Room 7-8	Ends at 10:00 AM
SYMPOSIUM 6	Contributed Talks. The State of Plant Conservation in Canada	Meeting Room 9-10	Ends at 10:00 AM
CONTRIBUTED TALKS	Plants 1: Evolution, structure, and development	Meeting Room 11-12	Ends at 10:00 AM
CSEE EXCELLENCE IN DOCTORAL RESEARCH SYMPOSIUM		York 2-4 Plenary	Ends at 11:30 AM

10:00 AM

SYMPOSIUM 4	Contributed Talks. The Evolution of Gene Expression and Regulation	Meeting Room 7-8	Ends at 11:45 AM
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10:30 AM

CONTRIBUTED TALKS	Conservation Biology and Species at Risk III	Meeting Room 1	Ends at 11:30 AM
CONTRIBUTED TALKS	Invasive Species II	Meeting Room 2	Ends at 11:45 AM
CONTRIBUTED TALKS	Reproductive Strategies II	Meeting Room 4	Ends at 11:15 AM
CONTRIBUTED TALKS	Wildlife Management	Meeting Room 9-10	Ends at 11:30 AM

1:00 PM

CONTRIBUTED TALKS	Forest Ecology	Meeting Room 1	Ends at 2:30 PM
CONTRIBUTED TALKS	Plant Diversity	Meeting Room 2	Ends at 2:30 PM
CSEE ECR PLENARIES		York 2-4 Plenary	Ends at 2:20 PM

Schedule Overview

Aperçu de l'horaire

Wednesday, June 14, 2023 (cont'd)

2:45 PM

CBA AGM AND AWARDS

Meeting Room 1

Ends at 4:45 PM

CSEE President's Award Plenary: Dr. Stephen Wright, Adaptation and maladaptation in plant genomes

York 2-4 Plenary

Ends at 3:45 PM

3:45 PM

CSEE STUDENT PAPER AWARDS

York 2-4 Plenary

Ends at 4:00 PM

4:00 PM

CSEE AGM

York 2-4 Plenary

Ends at 5:30 PM

4:45 PM

CBA INCOMING EXECUTIVE MEETING

Meeting Room 1

Ends at 5:15 PM

5:30 PM

**CLOSING
SOIRÉE**

LE PATIO 340, ST. BONIFACE

340 Provencher Blvd.

Ends at 10:30 PM

COFFEE BREAKS / EXHIBITOR HALL

10:00 AM - 10:30 AM, 2:15 PM - 2:45 PM

LUNCH

11:45 AM - 1:00 PM, brown bag lunch pickup in Exhibitor Hall (advance orders were required)

Plenary Speakers

Conférencier.e.s des plénières

OPENING PLENARY

Dr. Carly Ziter

Department of Biology
Concordia University

Title: Understanding biodiversity and ecosystem services across urban landscapes

Schedule: June 12, 1:00 – 2:00 pm

Location: York 2-4 Plenary



Biography & Summary: Dr. Carly Ziter is an Assistant Professor in the Department of Biology at Concordia University, where she holds a University Research Chair in Urban Ecology and Sustainability. As a landscape and urban ecologist, her research asks how landscape structure, land-use history, and biodiversity impact multiple ecosystem services – the benefits we receive from nature – and their relationships in urban and urbanizing areas. Carly Ziter and her students combine field-based studies, sensor and satellite data, community science, and synthesis approaches to understand the ways urban green spaces contribute to safer, healthier cities. Her research is interdisciplinary, including active collaborations with colleagues from urban studies, engineering, fine arts, communications, and political science, and benefits from non-academic partnerships spanning grassroots organizations to federal government. Carly Ziter is also committed to integrating public engagement and science communication into her scientific work, and was recently awarded Concordia’s National Research Communicator of the Year.

PUBLIC PLENARY

Dr. Allyson Menzies

School of Environmental Sciences
University of Guelph

Title: Prioritizing Indigenous values in wildlife conservation

Schedule: June 12, 7:45 – 9:00 pm (including opening comments)

Location: Canadian Museum for Human Rights (CMHR)



Biography & Summary: Dr. Allyson (Ally) Menzies is of mixed Red River Métis and Settler descent, born and raised in Treaty 1 & 2 territory and the homeland of the Métis Nation (a.k.a Manitoba). She studied hibernation physiology of cave-dwelling little brown bats in central Manitoba for her MSc, and winter physiology and behaviour of red squirrels, snowshoe hares, and Canada lynx in the Yukon for her PhD.

Dr. Menzies currently works with a team of researchers, conservation practitioners, community members and Indigenous Knowledge holders to summarize perspectives on the best practices and on-the-ground examples of interweaving knowledge systems in natural sciences, to identify the Indigenous values that need to be prioritized in environmental monitoring and research, and to determine which methodologies are most effective at doing so. Developing approaches to environmental research, monitoring, and management that truly respect Indigenous rights and knowledge systems ensure that important decisions are made with all of the tools and knowledge available, and will create a path forward for conservation science that is rooted in mutual respect, reciprocity, and reconciliation.

Plenary Speakers

Conférencier.e.s des plénières

CANADIAN BOTANICAL ASSOCIATION

LUELLA K. WERESUB MEMORIAL MYCOLOGY LECTURE

Dr. Wendy Untereiner

Department of Biology
Brandon University



Title: Animal-associated Ascomycota: the genus *Capronia*, Onygenales from snake hibernacula, and the xerophilic taxa inhabiting ant mounds

Schedule: June 13, 7:30 – 8:30 pm

Location: York 2-4 Plenary

Biography & Summary: Wendy Untereiner is a Professor of Biology at Brandon University. She has twice served as Associate Editor for *Mycologia* and the *Canadian Journal of Botany*, participated as a member and chair of committees for the Mycological Society of America, and served as a member of a NSERC Discovery Grant Evaluation Group. Wendy and her partner, Gary McNeely, live with their son on a beautiful tree-lined street in the city of Brandon where - weather and the local invertebrate fauna, permitting - they enjoy walks to local brew pubs, gardening, and listening to music on the deck in their backyard.

Dr. Untereiner's research focuses on the ecology and systematics of selected lineages of animal-associated Ascomycota. The first of these is the Herpotrichiellaceae, a family of slow-growing Fungi encompassing species capable of causing opportunistic infections in vertebrates. Ongoing investigations of this group are aimed at understanding the distribution, life-histories, and phylogeny of *Capronia*, a member of this family found on decaying plant material and the fruit-bodies of other Fungi. A second lineage is the Onygenales, an order that includes keratin-degrading ascomycetes and some of the most important pathogens of mammals. Dr. Untereiner is particularly interested in the distribution and diversity of keratinolytic Onygenales in animal-dominated environments such as the hibernacula of overwintering snakes. More recently, she has explored the mycota of the mound nests of thatching ants, an animal-modified environment dominated by Ascomycota adapted to environments with low water activities.

CSEE PRESIDENT'S AWARD PLENARY

Stephen Wright

Department of Ecology and Evolutionary Biology
University of Toronto



Title: Adaptation and maladaptation in plant genomes

Schedule: June 14, 2:45 – 3:45 pm

Location: York 2-4 Plenary

Stephen Wright is Professor and Canada Research Chair in the Department of Ecology and Evolutionary Biology at the University of Toronto. Research in his lab focuses on plant evolution at the genome level. His research team of graduate students, undergraduates and postdoctoral fellows investigates the evolutionary processes driving genome evolution, and in turn uses genomic data to test long-standing evolutionary questions. Key questions of interest include the causes and consequences of mating system evolution, the genome-wide extent and rate of adaptive evolution, and the evolutionary forces affecting the fate of transposable elements.

Stephen is President-elect of the Society for Molecular Biology and Evolution, is on the editorial board for *Evolution Letters*, *Molecular Biology and Evolution*, and *Genetics*, and is the past chair of the Department of Ecology and Evolutionary Biology at

Plenary Speakers

Conférencier.e.s des plénières

the University of Toronto. His administrative and society activities have included a priority on fostering allyship at conferences and on campus.

In current work, the group has been studying two quite similar plant species that exemplify on the one hand extremely rapid adaptation on contemporary timescales in the case of herbicide resistance and agricultural adaptation, and longer-term maladaptation associated with the evolution of sex chromosomes. This work highlights both the factors that enable and constrain adaptive evolution, and motivates future comparative work to better understand the limits of adaptation.

CSEE EARLY CAREER RESEARCH AWARDS

Quinn Webber

Department of Integrative Biology
University of Guelph

Title: Is it social or spatial? Challenging adaptationist thinking at the spatial-social interface

Schedule: June 14, 1:00 – 1:40 pm

Location: York 2-4 Plenary



For gregarious animals, sociality is a key driver of fitness. The adaptationist paradigm posits that phenotypes (e.g. sociality) emerge as the result of natural selection driven by the fitness benefits of those phenotypes. For example, in the case of sociality, the fitness benefits of sociality can include improved energy saving through social thermoregulation, reduced per capita predation risk, or conspecific information transfer during foraging. While this paradigm often holds, there are cases where fitness benefits attributed to one phenotype emerge due to confounding fitness-related processes associated with another phenotype. The result is misattribution of causality. Gould and Lewontin (1979) termed these emergent phenotypes that are correlated with, but not causal of fitness 'spandrels' in reference to tapered spaces between archways supporting the domed roof of St. Mark's Basilica in Venice. Here, I extend the 'spandrels' concept to spotlight the confounding fitness processes that underpin social and spatial phenotypes. I will present an overview of my work, including findings for bats, elk, and caribou that suggest that to be social, individuals must share space; but, at the same time, sharing space often requires some social interaction. I will extend my work to highlight next steps in our understanding of how social and spatial phenotypes affect fitness and conclude by discussing scenarios where social phenotypes are perceived to be the driver of fitness, but spatial phenotypes could in fact be a misattributed driver of fitness.

CSEE EARLY CAREER RESEARCH AWARDS

Rebekah Oomen

Department of Biological Sciences
University of New Brunswick

Title: Towards genomic forecasting of species responses to environmental change

Schedule: June 14, 1:40 – 2:20 pm

Location: York 2-4 Plenary



A fundamental aim of biology is to understand the dynamic interactions between organisms and their environment that generate and maintain biodiversity over ecological and evolutionary timescales. The responses of organisms to environmental change are structured across heterogeneous environments and within the genome itself. This is because adaptation to local environments in the past influences contemporary plastic responses and future environmental adaptation, and because the genome itself is a heterogeneous landscape of selection, drift, recombination, and mutation. This talk will focus on the spatial

Plenary Speakers

Conférencier.e.s des plénières

and genomic structure of fish responses to environmental change through three lenses: 1) phenotypic plasticity and reaction norm evolution, 2) the genomic basis of local adaptation with gene flow, and 3) mechanisms of reproductive isolation and speciation. Through common-garden experiments on Atlantic cod, I demonstrate genetic variation in responses to temperature at microgeographic scales and show that chromosomal inversions can have disproportionate impacts on fitness at these scales. I show that such genetic architectures are common in fishes and affect their evolutionary responses to environmental change. Next, I probe behavioural and genomic mechanisms maintaining distinct cod ecotypes in a hybrid zone. Collectively, this work is aimed at creating genomic forecasts for responses to environmental change in species with structured populations and genomes. Forecasts provide tangible predictions for policy makers to develop effective biodiversity management strategies. Their development can also reveal fundamental truths about the predictability of ecology and evolution.

2023 CSEE DOCTORAL EXCELLENCE AWARDS WINNERS

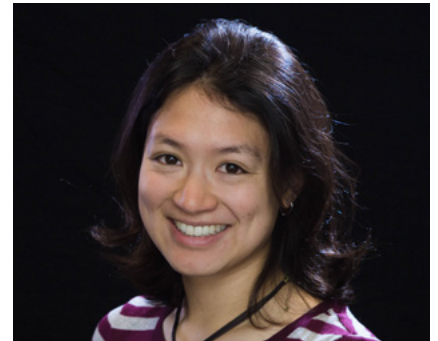
Jillian Dunic

Department of Biological Sciences
Simon Fraser University

Title: Seagrass as a model system: understanding multiple stressors

Schedule: June 14, 8:30 – 9:00 am

Location: York 2-4 Plenary



Seagrasses are valuable foundation species that provide services such as carbon sequestration and improved water quality. Unfortunately, as a coastal ecosystem, they are heavily impacted by human activities. With an eye toward management, I used seagrass meadows as a model system to understand the effects of multiple stressors across scales. First, I reconstructed area trends for 547 meadows. I found that one-fifth of the world's observed seagrass meadow area has been lost since the 1880s. However, losses were variable across time and space, suggesting that local studies are important for informing relevant management actions. I then focused on one species, eelgrass (*Zostera marina*), to identify critical growth-related values that are pragmatic management targets and test whether these values change when stressors co-occur. I quantitatively reviewed studies of the effects of temperature and light on eelgrass performance. I found that two critical performance values, zero-growth rate and maximum growth rate, shifted across combinations of light and temperature values, suggesting that fixed thresholds are inappropriate targets. My research shows that although local context is important for seagrass management, there are generalisable patterns in how multiple stressors affect seagrass performance, which can be used to guide interventions.

2023 CSEE DOCTORAL EXCELLENCE AWARDS WINNERS

Takuji Usui

Biodiversity Research Centre and Department of Botany
University of British Columbia

Title: On the origins of coexisting species (and the curious paradox of the duckweed)

Schedule: June 14, 9:00 – 9:30 am

Location: York 2-4 Plenary



Biodiversity is the outcome of two processes: the creation of new lineages by speciation, and the persistence of these lineages by ecological coexistence. To understand the origins of species diversity, evolutionary biology has primarily focused on the

Plenary Speakers

Conférencier.e.s des plénières

causes of speciation and mechanisms of genetic isolation. However, whether coexistence evolves with lineage divergence, and the mechanisms by which lineage persistence is achieved, remains unclear. In this talk, I focus on a recent experiment in which we quantified the evolutionary trajectory of coexistence among diverging lineages to the species boundary. Specifically, we parameterized coexistence by quantifying the mutual invasion criteria in ~3000 invasion experiments and across 127 unique lineages of the duckweed *Spirodela polyrhiza* and its sister-species *Spirodela intermedia*. Our results shed light on whether evolutionary relatedness among divergent lineages predicts the likelihood of coexistence, but in doing so, also uncovers a curious paradox in patterns of natural duckweed communities. By considering how persistence evolves within species, we begin to unravel how coexistence mechanisms themselves can operate as a route for speciation and the origin of coexisting species.

2023 CSEE DOCTORAL EXCELLENCE AWARDS WINNERS

Alexander Hare

Department of Integrative Biology
University of Guelph

Title: What does the squirrel say: understanding the role of individual physiology in social information

Schedule: June 14, 9:30 – 10:00 am

Location: York 2-4 Plenary



My thesis aims to understand the ways in which physiology regulates the exchange of social information, shaping individual behaviour. In order to do this, I have used an integrative approach to examine the effects of hormones on territorial vocalizations in North American red squirrels (*Tamiasciurus hudsonicus*). First, I tested a previously posited hypothesis that the vocal cues used for kin discrimination in red squirrels are accentuated by increases in acute stress hormones. I found no evidence to support this hypothesis yet found evidence that kin discrimination may be dependent upon yearly fluctuations in food resources. Second, I examined whether female vocalizations contained cues reflecting changes in reproductive hormones associated with estrus. I found that both the pitch and entropy of female vocalizations significantly increased during pregnancy, but there were no distinct estrus cues. Finally, I examined how cortisol concentrations of conspecifics within an acoustic neighbourhood can influence each other. I found that neighbouring squirrels' cortisol interacted in a density dependent manner to influence an individual's own cortisol, with a close positive association existing at low conspecific densities, and a negative association between neighbours at higher densities. My research advances our understanding of how, even in what is traditionally viewed as an asocial species, social interactions play a significant role in driving an organism's physiological response to the environment.

2023 CSEE DOCTORAL EXCELLENCE AWARDS WINNERS

Andrea Wishart

Department of Biology
University of Saskatchewan

Title: Oh look, a squirrel! Studying variation in resource acquisition by red squirrels, and other doctoral distractions

Schedule: June 14, 10:30 – 11:00 am

Location: York 2-4 Plenary



Why do organisms vary so much in acquiring energy, when energy is critical for survival and reproductive success? For my

Plenary Speakers

Conférencier.e.s des plénières

doctoral thesis research, I set out to better understand the contributions of genetic, physiological, ecological, behavioural, and energetic components of resource acquisition in the context of food caching by the North American red squirrel (*Tamiasciurus hudsonicus*). Leveraging data collected by collaborators and field technicians across more than three decades by the Kluane Red Squirrel Project and implementing additional field studies, I investigated evolutionary, physiological, behavioural, and ecological facets of caching by squirrels in their natural, dynamic environment. I estimated the heritability of food-caching, and determined whether high interannual variation in food abundance (cones of white spruce *Picea glauca*) leads to fluctuating selection on caching. I examined the interaction between local food abundance and energetic constraints on foraging effort imposed by lactation. Finally, I explored the influence of currently available energy levels (in the form of current cached cones, supplemental peanut butter, and body fat levels) on future caching activity. My thesis research provides evidence that resource acquisition is dynamic within individuals and can be largely dependent on the resources made available to individuals, further implicating environmental stochasticity in the fitness of organisms. In this award talk, I will weave in additional projects I have undertaken as a doctoral student, from squirrel sex ratios to championing graduate student issues, finally drawing attention to the critical role of resources in scientific research in Canada.

2023 CSEE DOCTORAL EXCELLENCE AWARDS WINNERS

Laurence Feyten

Quebec Centre for Biodiversity Science
Concordia University



Title: Uncertainty of risk and information limitations shape neophobic responses in prey

Schedule: June 14, 11:00 – 11:30 am

Location: York 2-4 Plenary

The combined effects of changing climates, anthropogenic disturbances, and invasive species lead to short and long-term ecosystem changes. As a result, prey populations may be faced with increased uncertainty of risk (i.e., inability to predict predation events due to limitations on the quantity or quality of information). This uncertainty impacts decision-making and risk-assessment abilities among prey. Therefore, it is critical to understand the ecological factors driving uncertainty, and how prey deal with information limitations. Recently, phenotypically plastic neophobic predator avoidance (NPA, increased vigilance towards novel stimuli) has been suggested as a response of prey to uncertainty, without the costs associated with learning specific predator cues. Trinidadian guppies (*Poecilia reticulata*) from high-predation populations exhibit NPA, and NPA can be induced in predator-naïve populations after increasing mean predation risk. However, it remains unclear what specific factors drive uncertainty and the resulting NPA. Using Trinidadian guppies as a model system, I conducted a combination of laboratory and field experiments to identify potential drivers of uncertainty of risk within prey populations. I have proposed a framework based on information theory, which suggests uncertainty of risk may arise from the information source (i.e., predators and/or conspecifics), the environment through which information must travel, and prey experience during risk information detection. I assess potential effects of predator density and diversity, the presence of social cues with novelty, the mean and variance of microhabitat variables (e.g., water velocity, habitat complexity, and habitat heterogeneity), the presentation of simultaneous cues of mixed reliability (i.e., known and/or novel), and the spatial predictability and diversity of novel cues presented over time. Uncertainty of risk may have deleterious impacts on the distribution and abundance of predator and prey species. My research identifies factors contributing to uncertainty, enables prediction of prey responses to such conditions, and can contribute to conservation and management efforts of socio-economically important, endangered, or invasive species.

Workshop Description and Special Sessions

Descriptions des ateliers et sessions spéciales

WORKSHOP 1

An R Crash Course for Biologists: from Basic R to Advance Visualizations, GLMs, GAMs, and Machine Learning Models

Organizers: Robert Colautti and Mia Akbar, Damian Bourne and Maria Jose Gomez Quijano

Schedule: June 11, 9 am – 4 pm

Location: Meeting Room 7-8

Description: The goal of this workshop is to democratize coding and quantitative skills for biologists, particularly those who have not received university-level training in mathematics or computer science. Intended for any member of the academic, public, and private sectors who has little to no prior experience in computer science or the R programming language. The content for this course is based on the recently released R Crash Course for Biologists and the forthcoming R STATS Crash Course for Biologists, which are available online to course participants at no cost.

What to bring: A laptop with fully charged battery and internet access. (Free WiFi will be available.) Participants should install the free versions R and R Studio Desktop. Download the software from the following links:

R: <https://cran.r-project.org/mirrors.html> (choose a link that is geographically close to you)

R Studio: <https://posit.co/download/rstudio-desktop/>

WORKSHOP 2

Developing a reproducible workflow in R using functions, {targets} and {renv}

Organizers: Alec Robitaille and Isabella Richmond

Schedule: June 11, 9 am – 4 pm

Location: Meeting Room 9-10

Description: This workshop will cover key elements of reproducible workflows targeted at users with familiarity with the R programming language. First, project management including directory structure and tracking dependencies with {renv} and {conflicted}. Next, writing independent steps of analyses as functions that are flexible and testable. Finally, combining those functions along with input data to build a reproducible workflow with {targets}. Many ecology and evolution analyses have modifications throughout the scientific process, which results in analytical steps that need to be rerun. {targets} tracks dependencies between input files, analysis steps and outputs and as you modify your project, it only reruns the relevant pieces. {targets} is an effective way to produce and manage a reproducible workflow, and is one of the first pipeline tools designed specifically for R, the main coding language of many CSEE attendees. Workshop attendees will gain fundamental project management and reproducible workflow skills that they can apply to their own projects and take back to their labs and collaborators.

What to bring: A laptop with fully charged battery and internet access. (Free WiFi will be available.) A recent version of R, and your favorite IDE (e.g. RStudio or Visual Studio). A full list of R packages will be provided closer to the date of the workshop.

WORKSHOP 3

GitHub for biologists: A painless introduction to a powerful collaboration tool

Organizers: Samantha Straus and Mike Lavender

Schedule: June 11, 9 am – 11 am

Location: Meeting Room 3

Description: GitHub is a powerful tool for collaboration and reproducibility, but the learning curve can be steep. This workshop aims to lower the barrier to entry as much as possible by sharing tools and resources that take GitHub out of the command line and into everyday use. We will introduce beginner GitHub users to the importance of version control, best practices for daily use and with collaborators, and get them set up and using GitHub by the end of the workshop. Through

Workshop Description and Special Sessions

Descriptions des ateliers et sessions spéciales

a series of short partner activities, we will help the participants through each step of setting up GitHub and teach them basic functions that can (and should) be used everyday, such as pushes, pulls, branching, and merging. By the end of the workshop, participants should feel comfortable and motivated to incorporate GitHub into their current and future projects. This workshop is sponsored by the CIEE-ICEE Living Data Project.

What to bring: Participants should bring their own fully charged laptop with R, RStudio, and git installed prior to the workshop. The organizers will provide participants with materials for how to do this ahead of the workshop.

WORKSHOP 4

The next steps in the establishment of a Long-Term Research network in Canada

Organizers: Melanie Boudreau, Andrea Wishart, Quinn Webber, Jeff Bowman, and Colin Garroway

Schedule: June 11, 9 am – 12 pm

Location: Meeting Room 4

Description: The value of long-term ecological research projects is undeniable. Since 2017, the development of a long-term network has been in planning. The LTR-CSEE section was formed in 2019, and since that time, several symposia have been held on how to develop, fund, and maintain an LTR network in Canada. This year, our objectives are to host an ‘unconference’ event, fostering a creative space for peer-to-peer learning, collaboration and creativity. Unconferences are unstructured and emphasize the exchange of information among participants. During this session, all participants will have the opportunity to suggest discussion topics (e.g., funding solutions, ideas for empirical or review papers, etc.), sub-groups will work on the ideas presented, and then progress will be briefly summarized before topics are continued to be developed or rotated through until the end of the workshop. In this way, we will produce a road map of action items the LTR Section can take to establish an LTR network.

WORKSHOP 5

Saving Data: A film screening and reflection by Living Data Project participants

See below for June 12 to June 14 workshops and special sessions

WORKSHOP 6

An Intro to RMarkdown for productive and reproducible science

Organizers: Mike Lavender and Samantha Strauss

Schedule: June 11, 1 pm – 3 pm

Location: Meeting Room 3

Description: This workshop introduces the fundamentals of RMarkdown with a focus on a reproducible collaborative workflow to produce manuscripts with tables, figures, and citations, formatted for a target journal. Recent years have seen a push for open, reproducible, and collaborative science. Platforms such as R/RStudio have improved our ability to do this, but many still struggle to collaborate effectively. The back-and-forth exchange of documents by email is one solution; however, this often leads to myriad versions of documents, and the risk of outdated or miss-matched results in the manuscript.

In this workshop we will present one workflow that allows for versioning of written documents while keeping a direct link to the statistical analyses. We will do this by using Google Drive, and RStudio and RMarkdown for collaboration and writing. This course will help anyone interested in collaborating with others using an open and reproducible workflow. This workshop is sponsored by the CIEE-ICEE Living Data Project.

What to bring: A fully charged laptop with internet (Wi-Fi) access and a recent version of R and RStudio loaded. Free WiFi will be available. Download the software from the following links:

R: <https://cran.r-project.org/mirrors.html> (choose a link that is geographically close to you)

R Studio: <https://posit.co/download/rstudio-desktop/>

Workshop Description and Special Sessions

Descriptions des ateliers et sessions spéciales

WORKSHOP 7

Communicating Science on Social Media

Organizer: Bruno Eleres Soares

Schedule: June 11, 9 am – 10:45 am

Location: Meeting Room 11-12

Description: This workshop is designed to teach you how to create and manage a science communication (SciComm) program using social media. You will learn how to identify the target audience and an adequate editorial strategy to reach them, but also how to create a program that can adapt into your life. We will discuss techniques for creating effective science communication messages to specific audiences, how to choose the best venue for your program (e.g., YouTube, Twitter, TikTok, etc.) and be invited to think on the opportunities and strengths we currently have to reach our SciComm goals. Our workshop will foster an inclusive learning environment that recognizes our particularities as scientists and the different ways we can tackle science communication to reach different people. By planning effective science communication programs in groups, we are able to create a landscape that effectively communicates science to everyone.

Don't miss out on this opportunity to enhance your science communication skills and promote a more inclusive scientific education. This workshop is sponsored by CIEE-ICEE.

What to bring: A fully charged laptop with internet access. Free WiFi will be available. We will use Google Docs and Jamboard using web browsers.

WORKSHOP 8

SWEET - Funding and open science as avenues for improving accessibility and equity in science

Organizers: Carling Bieg, Nicole Fenton, Maddie Jarvis-Cross, Megan Brownlee and Sian Kou-Giesbrecht

Schedule: June 11, 1 pm – 5 pm

Location: Meeting Room 4

Description: The Symposium for Women and Equity-Seekers in Ecology and Evolution Today (SWEET) aims to address the challenges faced by marginalised folks in academic, government, and industry positions within the fields of ecology and evolution. We hope to increase awareness, promote strategies, and inspire action that cultivates inclusive, communal, and accountable workplace cultures and relationships. This year we are joining up with the Canadian Botanical Association's (CBA) IDEA (Inclusion, Diversity, Equity and Accessibility) Committee to host a joint workshop at the CSEE-CBA meeting. This year's event will engage with conversations regarding science funding (e.g., the Support Our Science Initiative) and discuss the need for open and accessible science for addressing global issues. We will specifically highlight these topics as EDI issues throughout our workshop. We will host expert panellists and lead a discussion about science funding (i.e., to whom, where and how much public funding is distributed), an interactive activity to help participants become more equipped to get funding (e.g., what do selection committees look for, how EDI issues are considered), as well as a discussion on open science and science accessibility (e.g., access to work funded by public money; open science/access to knowledge; communication; and how access to science affects public knowledge). We will also leave time for open discussion among workshop participants. Coffee and light snacks will be provided.

WORKSHOP 9

A workshop on publishing in peer-reviewed journals for early-career researchers

Organizers: Josephine, Sciortino, Fanie Pelletier, Andrea Wishart, and Christian Lacroix

Schedule: June 11, 11 am – 12:30 pm

Location: Meeting Room 11-12

Description: Early-career researchers (ECRs) are navigating a publishing landscape that is complex and constantly evolving. Most ECRs do not receive formal training on scholarly communication and face challenges when publishing. This workshop aims to pull back the curtain and answer questions on the publishing process. We will offer insights into the things you should

Workshop Description and Special Sessions

Descriptions des ateliers et sessions spéciales

consider when planning your manuscript: preprint sharing, publishing models, and journal metrics and the peer-review process after submission. You will learn how you can maximize the impact of your work, how Canadian Science Publishing (CSP) journals are working to showcase and support Indigenous-led and community-engaged research, how you can benefit from our read and publish agreements. We will also highlight the ways ECRs can get involved with CSP journals beyond submitting papers as authors. This workshop will be presented by the editors of FACETS (Fanie Pelletier), Botany (Christian Lacroix), and the Director of Environmental Sciences Journals at CSP (Sherestha Saini).

June 12 to June 14 workshops or special sessions

12 juin au 14 juin ateliers ou sessions spéciales

WORKSHOP 10

Turning sound into discovery: Using wildlife audio recorders as a valuable research tool

Organizer: Alexandra Donargo, Wildlife Acoustics

Schedule: June 12, 11:40 am – 12:40 pm

Location: Meeting Room 11-12

Description: Bioacoustics and soundscape analysis are increasingly becoming valuable tools for biologists, environmental scientists, and managers to survey and monitor wildlife populations and changing habitats. Wildlife audio recorders, specifically the Song Meter recorder, is a non-invasive, cost-effective and an unbiased method used to aid in resource management, habitat health assessment, regulatory compliance goals, animal behavior studies and even documenting the effects of climate change. Biologists all over the world have made the Song Meter platform the standard for bioacoustics recording with over 100,000 recorders deployed in over 100 countries. This hands-on workshop will teach participants the features and set up of the Song Meter SM4, Song Meter Mini and Song Meter Micro bioacoustics recorders. Several case studies will also be presented and discussed. Time permitting, we will also review the free and paid versions of our Kaleidoscope software for efficient analysis of acoustic data. Limited space available. Lunch will be provided.

Note: Advance registration is required for this event

NSERC Discovery Grant Information Session

Schedule: June 13, 11:50 am – 12:35 pm

Organizers: Gail Devoren, Brenda MacMurray

Location: Meeting Room 2

Description: This session will present an overview of the application process for NSERC Discovery Grant funding, and address common misperceptions surrounding the evaluation of applications for grant funding. Details of how the assessment of grant applications by Evaluation Group (EG) members is supported by the “Conference Model” and subsequent grouping of applications into funding bins, will be of particular interest to Early Career Researchers, but there will also be ample time for participants, including Established Researchers, to ask questions of experienced former members of NSERC EG 1503 (Evolution and Ecology) and NSERC Senior Program Officer Brenda MacMurray.

In that this session will occur within the 90-minute lunch break, participants can order a boxed lunch provided by the RBC Convention Centre to eat during the session for \$35 (taxes and gratuities included; e-mail us at: beepeg2023@gmail.com to reserve a boxed lunch), or forage opportunistically, from a nearby food truck or restaurant in the 40 minutes between the end of this session and the start of the afternoon plenary presentations.

Note: No registration is necessary for this event.

Workshop Description and Special Sessions

Descriptions des ateliers et sessions spéciales

WORKSHOP 5

Saving Data: A film screening and reflection by Living Data Project participants

Organizers: Diane Srivastava, Gracielle Higino, Samantha Straus, Mike Lavender

Schedule: June 12, 3:15 pm – 4:30 pm

Location: York 2-4 Plenary

Description: This one-hour event centers on the process of data rescue, as experienced by participants in the Living Data Project (LDP). The LDP is a Canada-wide initiative to save legacy data in ecology, evolution and the environmental sciences. We start with some examples of environmental data rescue projects. LDP graduate students who conducted internships to rescue data talk us through the process and the outcome, and reflect on what rescuing the data meant to them.

There will then be a screening of LDP postdoc Dr. Gracielle Higino's documentary, *Saving Data*. This 15-minute documentary film is an ode to intergenerational memory and ecological data. It discusses the process of rescuing legacy datasets as a way to raise interest and awareness about open ecological data. We invite audience members to discuss the film and presentations and share their own journeys in data loss and data recovery. This workshop is sponsored by the CIEE-ICEE Living Data Project.

Note: No registration is necessary for this event.

Indigenous Values and Conservation, panel discussion

Panel: Az Klymiuk, Warren Cardinal-McTeague, Shianne McKay, Allyson Menzies, Gabriel Nemoga

Organizers: Az Klymiuk, Susan Lingle

Moderator: Aerin Jacob

Organizing Assistance: Susan Lingle

Schedule: June 13, 3:15 pm – 4:15 pm

Location: Meeting Room 1

Description: This panel, consisting of five Indigenous scientists and conservation professionals, will reflect on their personal journeys in science and conservation while highlighting fundamental principles and addressing questions related to Indigenous approaches to knowledge and conservation. One goal will be to assist the research community do a better job collaborating with Indigenous colleagues and communities and bridging western and Indigenous approaches to education, knowledge, and conservation. The panel will reach out to solicit questions from conference delegates prior to the conference and will incorporate these questions into the discussion.

Note: No registration is necessary for this event.

Field Trips, June 11

Excursions, 11 juin



Orchid, Bruce Ford

BROKENHEAD WETLAND INTERPRETIVE TRAIL

The Brokenhead Wetland Interpretive trail is located about 90 km north of Winnipeg. This wheelchair accessible boardwalk is 2 km in length, and winds through a calcareous fen and cedar swamp. The boardwalk was created by the Brokenhead Nation and Native Orchid Conservation Inc. The area is a provincial Ecological Reserve and is part of the Brokenhead Ojibway Nation. There are 28 species of native orchid species in the area, many of which should be in flower at the time of the trip. There are numerous species indicative of nutrient-poor wetlands, including eight species of carnivorous plants. We will meet with Knowledge Keepers from the Brokenhead Nation, who will provide us with male, female, and 2S teachings on the importance of the land. Field trip participants will be broken into groups and we will conduct a bio-blitz of the plants in the area, compiling a species list, including Anishinaabemowin names and uses of the species. Data from the field trip will be archived on iNaturalist.

To make your excursion as enjoyable as possible, remember to bring proper walking shoes (be prepared for damp conditions), hat, and a small daypack with sunscreen and water. Also, note that spring is tick and mosquito season, and poison ivy occurs along some trail sections. Please make sure that you protect yourself accordingly. A box lunch will be provided.

Time: 9 am – 5 pm

MANITOBA TALL GRASS PRAIRIE PRESERVE

The Manitoba Tall Grass Prairie Preserve (TGPP) is one of Manitoba's most significant natural areas protecting over 5,000 hectares of tallgrass prairie, aspen woodland, oak savannah, and sedge and shrub wetlands. Over 1,000 species have been recorded within this area including a number of species at risk. We will begin our trip at the Weston Family Tallgrass Prairie Interpretive Centre, where we will receive an overview of the ecological significance of the region that is now the TGPP, as well as the organizations that help protect and manage this unique natural area. From there, we will head to the Prairie Shore and Agassiz interpretive trails where we will experience the Preserve's many diverse habitats. Small white lady's slippers should be in full flower at this time of year. Sedge Wren, LeConte's Sparrow, Bobolink, and Sandhill Crane, amongst a number of bird species, are also possibilities to see on this trip.

To make your excursion as enjoyable as possible, remember to bring proper walking shoes (be prepared for damp conditions), hat, and a small daypack with sunscreen and water. Also, note that spring is tick and mosquito season, and poison ivy occurs along some trail sections. Please make sure that you protect yourself accordingly. A box lunch will be provided.

Time: 8:30 am – 5 pm



Spruce Woods Dunes, Colin Garroway

SPRUCE WOODS PROVINCIAL PARK AND THE SPIRIT SANDS TRAIL

Located ca. 200km SW of Winnipeg, Spruce Woods Provincial Park is one of Manitoba's most spectacular and eclectic landscapes, characterized by open and stabilized sand dunes, mixed grass prairies, wetlands, and spruce and deciduous forests. We will begin our trip by walking a scenic portion of the Spirit Sands trail. Dune ladders will help us traverse the steepest sections of the trail and will lead us to an observation platform offering spectacular views of the desert-like landscape. The rolling dunes along the trail are home to a unique assemblage of plants and animals, including species at risk such as hairy prairie clover, pincushion cactus, blowout tiger beetle, and northern prairie skink. A diverse late spring flora, and a variety of breeding birds, will be seen along the trail. If time permits, we will explore the varied landscape along the Isputinaw Trail. Over its short distance, this trail passes through wetlands, deciduous forest, and mixed grass prairie and offers great views of the Park's rolling landscape.

Field Trips, June 11

Excursions, 11 juin

To make your trip as enjoyable as possible, remember to bring proper walking shoes, hat, and a daypack with sunscreen, water, and dust and sand protective cases/lens covers for your camera and binoculars. Also, note that spring is tick season, and poison ivy occurs along some trail sections. Make sure that you protect yourself accordingly. A box lunch will be provided. Finally, please keep in mind that this is a full day trip so we may not be back in Winnipeg until after 6:00PM.

Time: 8:30 am – 6 pm

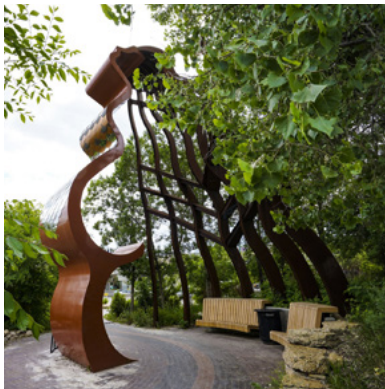
HISTORY OF THE FORKS

Participants will learn about the rich history of The Forks through a Parks Canada Interpretive Tour “Where Our Stories Meet” that recounts the histories of the First Nations who traded at The Forks for millennia, details the arrival of outsiders who charted this territory for Europe, and tells the story of the Métis Nation, which shaped what would ultimately become Manitoba during the fur trade era. Participants will then engage in a Parks Canada-led “Stories and Legends” workshop, designed to provide insight into Indigenous worldviews, history and community values.

Designed to offer a low-cost, local and flexible alternative to our other field-trip offerings, registrants will be expected to make their own way to The Forks and back to their place of accommodation by walking, cycling or using transit, and will be responsible for providing their own lunch and snacks. Our meeting place is within 800 m of The Fort Garry Hotel and the Humphry Inn, where many delegates will stay.

Time: 10 am – 12 pm

Meeting Place: A Parks Canada guide will meet you at Travel Manitoba, which is easy to find because it has a door facing the parking lot North of Johnston Terminal in the cluster of buildings at the Forks market. The guide will meet you outside, but there will be staff inside if you need assistance.



Niimaamaa-The Forks, Maddy Reico

LUNCH AT THE FORKS: EVERYONE INVITED TO DROP IN!

Time: 12 – 2 pm

People who take the morning Forks field trip and other interested conference attendees are invited to meet at The Common at The Forks, a relaxing venue at the Junction of the Red and Assiniboine Rivers, where you can find many inexpensive and tasty food options to purchase for lunch (many beverage options too). This is a great place to meet other people attending the conference.

A few CSEE-CBA volunteers will be waiting for you by 12 noon at tables that will be readily identifiable (e.g., a CSEE-CBA 2023 or #beepeg2023 sign or random biological paraphernalia). We will try to save tables outdoors on the Market Plaza (west) side of the Forks, weather permitting, indoors if not.

Following lunch, you may want to explore the Forks including a visit to the Manitoba Children’s Museum, shopping in the boutique retail stores or the antique market that populate The Forks Market and Johnston Terminal, taking a Parks Canada self-guided tour that focuses further on Indigenous connections to The Forks, visiting the Canadian Museum for Human Rights, or the nearby Saint Boniface Museum, or simply enjoying a Manitoba summer’s day at the junction of the Red and Assiniboine rivers the way Winnipeggers do! Alternatively, you can mosey over to the Historic Exchange District or to the Winnipeg Art Gallery / Quamajuq Inuit Gallery, which has a “free second Sunday” admission on June 11.

Symposia

Symposiums

SYMPOSIUM 1

Title: Ecological dimensions of hybridization

Organizer(s): Ken Thompson, Silu Wang

Schedule: June 13, 8:30 am to 11:45 am

Location: Meeting Room 1

Description: Hybrids between diverging lineages, when they form, find themselves amidst a tangled bank of close relatives, members of other species, and abiotic stresses. In spite of this critical ecological context, evolutionary biologists have tended to focus on how non-ecological processes mediate the outcome of hybridization. As a result, little is known about how complex natural habitats shape the performance of hybrids. In this symposium, speakers will discuss their contributions toward understanding of how ecological factors mediate the outcome of hybridization.

Speakers will approach the topic from a variety of perspectives using diverse systems. Most speakers will discuss ecological mechanisms of selection against hybrids. Dan Bock will discuss how ecology mediates selection against hybrids during biological invasion. Dolph Schluter, Scott Taylor, and Jenn Coughlan will primarily discuss hybrid incompatibilities that are undetectable in the lab, using fish, birds, and plants, respectively. Juliette de Meaux and Aly van Natto will both use plant systems to discuss how hybridization influences patterns of genetic variation in hybridizing populations, and Catherine Cullingham and Liz Mandeville will use trees and fish to discuss how ecological factors mediate the extent of adaptive introgression. Cathy Rushworth, Else Mikkelsen, and Loren Rieseberg will discuss how ecology mediates the evolution of stable hybrid lineages.

In sum, this symposium will bridge systems and research questions to advance our understanding about hybridization as an avenue towards understanding dynamic species boundaries and how hybridization can create new ecological and evolutionary potential.

SYMPOSIUM 2

Title: Genetic parallelism and constraints on evolution.

Organizer: Jonathan Mee

Schedule: June 12, 8:30 am to 11:15 am

Location: Meeting Room 1

Description: Studying the genetic basis of parallel evolution is key to understanding the extent to which adaptation is repeatable or constrained. A phenotype that can be produced via many alternative biological pathways is less constrained than a phenotype that can only be produced via one pathway. Similarly, a phenotype that can be produced via mutations at many alternative loci is less constrained than a phenotype that can only be produced by a mutation at one locus. Alternative biological pathways may have different pleiotropic effects, and different mutations might have different expressivity, penetrance, or dominance relationships. As a result, natural selection may impose constraints based on which of the functionally equivalent genetic changes that produce the same phenotype result in the highest fitness. In small and isolated populations, genetic drift may also limit the diversity of alternative genetic pathways available for the evolution of an adaptive phenotype. If genetic drift is strong, the genetic basis of a polymorphism may be contingent on the availability of mutation at one of several functionally equivalent genetic loci. We might expect less genetic parallelism if any combination of the following is true: the phenotype has a highly redundant genetic basis, the fitness differences between alternative biological pathways are small, or genetic drift affects the availability of adaptive alleles in replicate populations. This symposium will explore whether we have reached a consensus on when and how often to expect genetic parallelism. It will include specific cases where parallelism has been examined at the genetic level, and it will include broader surveys of genetic parallelism across multiple species from different kingdoms.

Symposia

Symposiums

SYMPOSIUM 3

Title: The spatial-social interface: from plants to predators

Organizers: Quinn Webber, Eric Vander Wal

Schedule: June 13, 8:30 am to 10:00 am

Location: Meeting Room 2

Description: Animal social behaviour and space use are inherently linked through processes and interactions that inform how individuals navigate their environment. The integration of social and spatial processes is termed the spatial-social interface, which we define as the proximate and ultimate interactions between social and spatial phenotypes and environments, such that the interface comprises four interconnected components: spatial phenotypes (e.g. habitat selection), social phenotypes (e.g. aggression), spatial environments (e.g. habitat openness), and social environments (e.g. group size).

The proposed CSEE session is the latest in a series of conversation our research groups have been facilitating on the topic of integrating spatial ecology and sociobiology. In recent years we have organized virtual sessions at the Ecological Society of America (2021) and the Association for the Study of Animal Behaviour (2020), keystone publication in Biological Reviews (Webber et al. 2023) and a recently accepted Theme Issue in Philosophical Transactions of the Royal Society B. Given the international nature of our conversation, we are excited to organize a session at CSEE. Our goals are threefold: 1) spotlight work at the spatial-social interface already being done in Canada and the Western US; 2) respectfully acknowledge and reflect on other ways of knowing the spatial-social interface; 3) develop conceptual integration across empirical systems where contributors present hypotheses specific to the spatial-social interface.

SYMPOSIUM 4

Title: The evolution of gene expression and regulation

Organizers: Alberto Civetta, Sara Good

Schedule: June 14, 8:30 am to 10:00 am

Location: Meeting Room 7-8

Description: A long-standing challenge in evolutionary genetics is bridging connections between genotypes and phenotypes. Advances in molecular, particularly sequencing, technologies have greatly improved our ability to test such associations. Moreover, these technical advances have helped us improve our understanding of the mode of evolution of genes and genomes. However, evolutionary studies have mainly focused on assays that explore associations involving nucleotide variants or that infer the mode of evolution from sequence data. We have known for some time that differences in the expression of genes and gene networks can shape traits and therefore impact fitness components. Since we now have the means to measure expression genome-wide, we are entering a whole new era in which it will be possible to measure the impact of multi-locus expression changes on fitness. With the vast majority of eukaryotic genomes being composed of non-protein coding DNA, our understanding of the regulation of gene expression, molecular signaling and interactions therein are posed to reshape our understanding of how genomes have evolved. Equally important, the field of epigenomics gives us a window into the interplay between genes and the environment and epigenetic changes that modify regulation and genome expression are appearing more as the norm than the exception. This symposium will bring together scientist working on issues relating to the broad topic of gene regulation across invertebrates, vertebrates and plants. Among other topics, presenters will address the role of selection and other mechanisms driving differences in gene expression, how genome-wide modifications in expression can trigger evolutionary changes, and how the plasticity of such changes can influence evolutionary trajectories.

SYMPOSIUM 5

Title: Welcome to the future: how technology can help us characterize habitat and ecological relationships

Organizers: Martin Leclerc, Fanie Pelletier

Schedule: June 12, 8:30 am to 9:45 am

Location: Meeting Room 3

Description: Climate change and other human driven-environmental changes are affecting all ecosystems around the globe.

Symposia

Symposiums

Recent changes in climate have already affected natural ecosystems and wild organisms. While the effect of environment on wild species has of interest for evolutionary biologist for and ecologists for centuries, recent developments in technology have allowed us to characterize environment at much finer spatial and temporal scales. Data accessibility, new promising instruments and the launch of new satellites will provide even further opportunities for researchers trying to assess relationships between wildlife and their environment. This symposium aims to present recent methodological developments use to better characterize environments in several ecosystems (see Excel file) and provide examples of their applications in ecological research. Our symposium will bring together six scientists that work on these questions. First, Dr. M Leclerc will introduce the symposium and present how new spaceborne LiDAR (GEDI) and a thermal imagery instrument (Ecostress) on the International Space Station help predict the response of wildlife to environmental change in the American West. Ms. V. Crozier will then show how vegetation indices, extracted from the MODIS on the NASA Terra and Aqua satellites can be used to track phenological shift and evaluate their consequence on reproductive strategy of large herbivore. Then, Ms. H. Leigh Crofts will present data from the CABO to illustrate how spectranomics can improve our understanding changes in plant biodiversity across Canada. We are hoping to have researchers working in tropical, marine and arctic environments.

SYMPOSIUM 6

Title: The state of plant conservation in Canada

Organizers: Jenny McCune, Jana Vamosi, Jeannette Whitton

Schedule: June 13, 8:30 am to 4:30 pm

Location: Meeting Room 3

Description: Vascular plants make up the largest group of species currently listed as “at-risk” by the Committee on the Status of Endangered Wildlife in Canada (COSEWIC). Their recovery is important to conserve Canada’s biodiversity. However, for many of these species basic information needed to design recovery actions is lacking. For example, we often do not have precise population estimates, knowledge of genetic diversity, or detailed habitat requirements for these species.

Few academic researchers are pursuing research on endangered plant conservation in Canada, which likely contributes to knowledge gaps. In addition, Canada lacks a national strategy to promote plant conservation nationally, and to work towards the goals outlined in the Global Strategy for Plant Conservation, developed at the Convention on Biological Diversity meeting in 2010. This is in contrast to the United States, where the Plant Conservation Alliance, a consortium of ten federal government agencies and over 300 non-federal cooperators, was formed in 1995.

This symposium will bring together botanical practitioners from governmental agencies, non-governmental organizations, and academic institutions to discuss the current state of plant conservation across the country, highlight initiatives that are working to enhance conservation and recovery of plant species, and identify the main gaps in plant conservation research in Canada. As far as we know, such an account-taking of plant conservation in this country has not been done before.

SYMPOSIUM 7

Title: The science and art of cytogenetics: celebrating Canadian contributions to the field of plant cytotaxonomy

Organizers: Kathleen Pryer and Amanda Grusz

Schedule: June 12, 8:30 am to 11:15 am

Location: Meeting Room 11-12

Description: Plant chromosome number is highly variable, ranging from as few as 4 per somatic cell (*Xanthisma gracile*, Asteraceae) to as many as 1440 (*Ophioglossum reticulatum*, Ophioglossaceae). Chromosome data relevant to plant systematics and evolution range from simply determining the number of chromosomes present to visualizing the exquisite details of modern molecular cytogenetics. Changes in chromosome number and the genomic rearrangements that usually accompany this transition have profound effects on plant phenotypes. These can result in rapid reproductive isolation and aid in the establishment of lineages with novel genomes and morphological traits.

This year’s CBA meeting marks the one-year anniversary of the passing of Gerald A. (Gerry) Mulligan, who had a prolific career of 60+ years in the Canada Department of Agriculture in Ottawa as a scientist and research director. Gerry determined and published a wealth of chromosome numbers for species from numerous plant families across Canada and the United States.

Symposia

Symposiums

The aim of this symposium is to acknowledge and highlight his fundamental contributions, as well as the works of several other Canadian plant cytogeneticists, and to demonstrate how they continue to inform our understanding of plant taxonomy and evolutionary biology.

SYMPOSIUM 8

Title: Integrating equity into urban ecology and evolution: Diverse and interdisciplinary perspectives for the benefit of all

Organizers: Riikka Kinnunen, Isabella Richmond

Schedule: June 14, 8:30 am to 10:00 am

Location: Meeting Room 1

Description: Human social and political decision-making creates varied environments across cities, where the uneven distribution of wealth and resources reflect the injustice and inequity intertwined in our society. This heterogeneity influences urban biodiversity patterns in complex ways also affecting the well-being of humans. For example, higher-income neighbourhoods often have more diverse plant communities and higher tree cover than lower-income neighbourhoods. Temperature and air pollution in cities also vary with socioeconomic, with low-income, minority residents more exposed to higher levels of air temperature and pollution. Human decisions and biases thus shape the urban environment in ways that influence the quality of habitat available for people, plants, and animals. As the design of our Canadian cities reflects the influences of settler-colonialism violence that started them, the uneven environmental variation across neighbourhoods raises concerns about inequity within our cities. If we as urban ecologists and evolutionary biologists want to contribute to reversing these social injustices, we must integrate equity into our research.

This symposium will highlight equity-driven urban ecology and evolution research, where socioeconomic and sociopolitical variables contribute to understanding variation in biodiversity and ecosystem services across and within cities. We want the symposium to encourage networking and sharing of ideas across interdisciplinary fields. Our aim is to particularly highlight the work of early-career researchers. This topic is timely and important, identified as one of the top future research questions in urban evolutionary ecology in a recent global horizon scan, and will be of interest to both CBA and CSEE members.

SYMPOSIUM 9

Title: The science of Decision Support Systems in conservation ecology

Organizer: James Paterson

Schedule: June 14, 8:30 am to 10:00 am

Location: Meeting Room 2

Description: Decision Support Systems provide a framework for assisting individuals or organizations make transparent, consistent, and data-driven choices about action. In conservation ecology, decision support systems can assist in choices to prioritize conserving natural resources. In the last 25 years, increases in the volume of available data and in computing resources have resulted in an explosion of DSS tools for estimating the costs and benefits of conservation. In this symposium, we bring together leaders in Canadian conservation ecology to share advances and applications in the science of these tools.

SYMPOSIUM 10

Title: Microbial ecology and evolution

Organizers: Leanne Grieves, Aleeza Gerstein

Schedule: June 14, 8:30 am to 11:45 am

Location: Meeting Room 3

Description: Although microbes have long been acknowledged as an integral part of all communities, they have been vastly underrepresented at ecology and evolution meetings. Given the inherent limitations in studies that require counting and observing, they have historically been predominantly represented as model systems, where they offer an exceptional framework to test ecological and evolutionary theories. The recent years have, however, seen a profusion of ecological and

Symposia

Symposiums

evolutionary microbial studies that look at microorganisms for their own sake. This has been driven largely by technological advances that have made genomics tools increasingly accessible and affordable. Given this, the interdisciplinary nature of the field, and the predominance of work on microorganisms in both fundamental and applied research, we believe a symposium on microbial ecology and evolution will create exciting opportunities for diverse researchers to connect and share their work. We would like to welcome research from multiple taxa, disciplines, and research questions - united under the broad theme of microbial ecology and evolution. We envision this symposium being open to any research involving microorganisms, provided there is an ecological and/or evolutionary component to the work. Researchers who work on ecological and evolutionary questions in microorganisms are often "siloed", being somewhat isolated in departments (e.g., Biology, Microbiology & Immunology/Molecular Biology, Plant Science/Agriculture) where crosstalk among (sub)disciplines is not always promoted or accessible. Our goal is for this symposium to provide an opportunity for diverse researchers to connect over the common theme, creating opportunities for networking and collaboration that may otherwise be limited.

SYMPOSIUM 11

Title: The future of herbarium collections and taxonomy in ecology and evolutionary studies

Organizer: Anne Bruneau

Schedule: June 13, 8:30 am to 11:15 am

Location: Meeting Room 11-12

Description: Natural History Collections, here specifically herbaria, are a rich source of long-term data about the morphology, physiology, ecology and geographical distribution of plant species over time. Increasingly data from collections, and information garnered from the specimens themselves, are being used by researchers addressing ecological and evolutionary questions. This symposium will highlight three key examples of innovative use of herbarium collections in ecological and evolutionary studies. We will also discuss the important role that herbaria and natural history collections can play in repatriation of specimens and their associated data. In addition, we will examine the consequences of the wide access to observation data, some of the challenges inherent to these data, and how best to integrate observation and specimen data to improve our knowledge of biodiversity. We end the symposium with a broad perspective on the future and role of herbaria and other natural history collections as we embrace the post COP15 objectives of better protecting biodiversity. Thirteen years after the publication of the 2010 Council of Canadian Academies report on the state of taxonomy in Canada, this symposium will provide an update and discussion of the progress achieved and challenges that lie ahead for university collections and taxonomic research.

SYMPOSIUM 12

Title: Plant development and environmental interactions

Organizers: Elizabeth Schultz, Shelley Hepworth

Schedule: June 13, 8:30 am to 10:00 am

Location: Meeting Room 7-8

Description: Plant Development is extraordinarily plastic, and its ability to respond to the environment allows plants to acclimate or adapt to changing conditions. This symposium will bring together 3 different perspectives on plant developmental responses to the environment. Linda Gorim will talk about how incorporating the response of root systems into breeding and selection programs may provide crops with improved abiotic stress resilience; Joceyln Hall will consider the evolution of nectary development and how it affects pollination success; Marco Todesco will discuss the genetic mechanism underlying adaptive diversity in sunflower.

Detailed Schedule: June 11-12

Horaire détaillé : 11-12 juin

Sunday, June 11	
Room. Workshop or Meeting Title	
9:00 - 11:00	MR3. Workshop 3. GitHub for biologists: A painless introduction to a powerful collaboration tool.
9:00 - 11:00	MR4. Workshop 4. The next steps in the establishment of a Long-Term Research network in Canada
9:00 - 16:00	MR6. CSEE Council Meeting
9:00 - 16:00	MR7-8. Workshop 1. An R Crash Course for Biologists: from Basic R to Advanced Visualizations, GLMs, GAMs, and Machine Learning Models
9:00 - 16:00	MR9-10. Workshop 2. Developing a reproducible workflow in R using functions, {targets} and {renv}
9:00 - 10:50	MR11-12. Workshop 7: Communicating Science on Social Media
11:00 - 12:30	MR11-12. Workshop 9. A workshop on publishing in peer-reviewed journals for early-career researchers
13:00 - 15:00	MR3. Workshop 6. An Intro to RMarkdown for productive and reproducible science
13:00 - 17:00	MR4. Workshop 8. SWEET: Funding and open science as avenues improving accessibility and equity in science
15:45 - 17:15	MR16. CBA Outgoing executive meeting
19:00 - 21:30	Opening Reception at WAG / Qaumajuq Inuit Art Gallery. 19:00 to 21:30

Monday, June 12	
Room. Session Title	
	MR1. Symposium 2. Invited Talks. Genetic Parallelism and Constraints on Evolution.
8:30	Genetic parallelism and constraints on evolution: an introduction to the symposium. Mee, J.
8:45	A meta-analysis of genetic parallelism in microbial experimental evolution studies. Gerstein, A.
9:00	It's not as parallel as you think — evidence of widespread genetic non-parallelism. Hendry, A.
9:15	Rapid parallel adaptation and the role of structural variants. Hodgins, K.
9:30	Parallelism across biological levels of organisation between replicated Arctic charr ecotypes. Jacobs, A.
9:45	Uncovering the genetic architecture of parallel evolution in <i>Senecio</i> . James, M.
	MR2. Population Dynamics
8:30	An ecological dipole in North American small mammal data from NEON. Barton, J.B., Widick, I.V., Zuckerberg, B., Strong, C., Jarzyna, M.A., LaMontagne, J.M.
8:45	Using kinship to explore narwhal social structure. Stone, M., Garroway, C., Ferguson, S.
9:00	Metapopulation dynamics change toward and maybe contribute to a species range limit. Gillies, G.J., Dungey, M.P., Eckert, C.G.
9:15	Using genetic mark-recapture analyses to estimate abundance of a widely distributed cetacean. Biddlecombe, B., Ferguson, S.H., Heide-Jørgensen, M.P., Gillis, D.G., Watt, C.A.
9:45	Population viability of the endangered Copper redhorse – implications for conservation stocking. Bannester-Marchand, N., Vachon, N., Mandrak, N.E., Blanchet, F.G.
	MR3. Symposium 5. Invited Talks. Welcome to the Future: How Technology can Help us Characterize Habitat and Ecological relationships
8:30	How remote sensing tools can help us better predict wildlife behavior. Leclerc, M., Ditmer, M., Stoner, D., Sexton, J., Wang, P., Carter, N.
8:45	Seeing spring from space: how spring advancement alters bighorn sheep energy allocation. Crozier, V., Pelletier, F.

Detailed Schedule: June 12

Horaire détaillé : 12 juin

- 9:00 Using hyperspectral imagery to characterize plant communities and ecosystem properties: the Canadian Airborne Biodiversity Observatory. Crofts, A., Inamdar, D., Jantzen, J., Kothari, S., Miraglio, T., Wallis, C. I.B., Arroyo-Mora, J.P., Bruneau, A., Coops, N., Kalacska, M., Laliberté, É., Vellend, M.
- 9:15 Detecting vertebrate carrion from space. Situnayake, M., Sombekke S., Kooistra, L., Pedersen Ås. Ø., Selva, N., Blaaid, R., Steyaert, S.M.J.G.
- 9:30 Scaling up drone-resolution remote sensing to practical extents for wildlife and wildland conservation. McLoughlin, P., Neufeld, B. Arnyek, A., Lyimo, E., Chandramouli, P., Stavness, I.
- 9:45 Closing remarks and discussion. Leclerc, M.

MR4. Community Ecology - Plants

- 8:30 The influence of grazing on moth communities in Manitoba alvars. Dearborn, K., and Westwood, R.
- 8:45 Plant rooting patterns in carbon-rich arctic frost boils. Standen, K.M., Muller, A., Siciliano, S.D., Lamb, E.G.
- 9:00 Grassland productivity and diversity response to fire. Vera-Velez, R., Minocher, D., Grilz, R., and Lamb, E.
- 9:15 Flowering time overlap is higher where competition is more important in an old-field community. Schamp B.S., Jensen A.M., Gridzak R.
- 9:30 Unraveling root and shoot trait integration in 44 wetland monocot species: a multi-trait network approach. Ye, Z. and Ryser, P.

MR7&8. Conservation Biology and Species at Risk I

- 8:30 Predicting bird extinction risk using threat vulnerability, traits and popularity. Serrano, J., Iversen, L., Pollock, L.
- 8:45 Home is where the healing is: summer roost sites of endangered bats recovering from white-nose syndrome. Bagheri, E., Brown, S., Fletcher, Q., Willis, C.K.R.
- 9:00 Building an initial priority conservation list of Arctic marine fish selected through an integrative approach. Sanchez Schacht, J., Roy, D.
- 9:15 Factors affecting habitat use by little brown bats during the fall swarming period. McNicol, F.J., Brown, S.R., Sadana, P., Fletcher, Q.E., Norquay, K.J.O., Willis, C.K.R.
- 9:30 How deadly was the mass mortality of sunflower sea stars in Canada? Watkins, H.V., Brownlee, S.F., Oishi, E.M., Côté, I.M.
- 9:45 Bryomonitoring: monitoring atmospheric pollution with mosses in New Brunswick. Todorov, M., Clarisse, O., Jean, M.

MR9&10. Plant/Microbe Interactions

- 8:30 Root endophytes in ovules of *Cycas revoluta* suggests vertical transmission of symbionts. von Aderkas, P., Little, S.A., Lane, S., Takaso, T.
- 8:45 Variations in leaf microbiomes can be detected in leaf spectra of *Betula populifolia* and *Populus tremuloides*. Wilson-Morrison, J., Moroenyane, I., Beauchamp-Rioux, R., Mechanda, S., Laliberté, E., Starr, J., Cardinal-McTeague, W.
- 9:00 Plant tissues as a habitat for microorganisms: a case study with barley and *Fusarium*. Bakker, M.G., Pascual, D., Patel, D., Tucker, J., Badea, A.
- 9:15 Mycobiome profiling of intermediate wheatgrass. Farhana, T., Cattani, D., Walkowiak, S., Bakker, M.
- 9:30 Beyond mountain pine beetle: the influence of root-associated fungi on soil carbon sequestration. Lau, N., Karst, J.
- 9:45 Do controlled environments provide relevant estimates of symbioses? A case study with plants and mycorrhizal fungi. Herlin, O., Maherali, H.

Detailed Schedule: June 12

Horaire détaillé : 12 juin

MR11&12. Symposium 7. Invited Talks. The Science and Art of Cytogenetics: Celebrating Canadian Contributions to the Field of Plant Cytotaxonomy

- 8:30** Building on Canadian contributions to plant cytogenetics: the future looks bright! Pryer, K.
8:45 Gerry Mulligan and the curious case of the dysploid *Drabas*. Winham, M., Picard, K.T., Pryer, K.M.
9:00 From geographical cytogenetics to polyploid evolution in *Epilobium (Chamerion)*: standing on the shoulders of Ted Mosquin et al. Husband, B.
9:15 Investigating the origin of polyploidy and apomixis in ferns: clues from Don Britton's work on *Pellaea*. Grusz, A., Windham, M.D.
9:30 A true golden-boy: John Semple and the cytology of *Solidago*. Beck, J.
9:45 Clarifying confounding chromosome numbers in *Carex*: contributions by Jacques Cayouette and other Canadian caricologists. Poindexter, D., Windham, M.D.

10:00 - 10:30 **Exhibitor Hall. Coffee Break**

MR1. Symposium 2. Invited Talks. Genetic Parallelism and Constraints on Evolution. Continued

- 10:30** Effect size and recombination rate shape parallel evolution in a long-term experimental hybrid sunflower population. Owens, G.
10:45 Interacting evolutionary processes shape the genomic consistency of repeated Arctic charr morph differentiation. Salisbury, S.
11:00 Temporal dynamics of genetic parallelism in experimentally evolved bacteria. Turner, C.
11:15 Repeated adaptation to climate in 25 plant species. Yeaman, S.

MR2. Spatial Ecology

- 10:15** Towards a mechanistic understanding of green wave surfing. Laforge, M.P., and Merkle, J.A.
10:30 Hanging out with ewe: predictors of female bighorn sheep (*Ovis canadensis*) social networks. Storkova, M., Ruckstuhl, K. E., Sosa, S., and Neuhaus, P.
10:45 Should I stay or should I go? Fitness consequences of burrow fidelity in Eastern chipmunks (*Tamias striatus*). Brownlee, M., Bergeron, P., Réale, D., Garant, D.
11:00 The influence of a novel stimulus (ALAN) on the nocturnal migratory behaviour of Eastern Whip-poor-will. Thompson, S., Korpach, A., Davy, C., Fraser, K.
11:15 Social and spatial site fidelity of woodland caribou during calving. Hendrix, J.G., Webber, Q.M.W., Vander Wal, E.

MR3. Plants II: Plant-Insect Interactions

- 10:15** Pollinator decline alters selection on floral traits in *Mimulus guttatus*. Brazeau, H.A., Caruso, C.M.
10:30 Beauty in the eye of the pollinator? Floral asymmetry in fireweed. Parachnowitsch, A.L., Dow, B.S., Vézina, L., Rathnayake, M.K., Garcia, Y.
10:45 Low fruit set despite frequent visitation by specialist bee in an oil-reward plant (*Lysimachia terrestris*). Brooks, J., Deadman-Wylie, G., Ripley, J., Traylor, A., Austen, E.
11:00 Creativity and its consequences in the naming, and study, of plant-feeding insects. Heard, S.B., Cull, C., Parachnowitsch, A.L., Vickruck, J.L., Mlynarek, J.J.
11:15 Insect visitation and pollination of a culturally significant plant, Hopi tobacco (*Nicotiana rustica*). Gibson, S.D., Halvorson, K., Myers, L., Colla, S.R.

MR4. Community Ecology - Plants. Continued

- 10:30** From lake-effect to logs: The drivers of bryophyte diversity. Holt-Schmitt, D., Fenton, N.

Detailed Schedule: June 12

Horaire détaillé : 12 juin

- 10:45** Can forest canopy composition influence forest-floor bryophyte biomass, and their carbon and nitrogen storage? Cemin, L.G., Jean, M.
- 11:00** Leaf phenology & growing season length at high latitudes. Bonner, C., Schon, C.E., Berendt, E., MacDougall, A.S.
- MR7&8. Invasive Species I**
- 10:15** Early efficacy of *Phragmites australis* biological control in Canada. Schon, C., McTavish, M., Bourchier, R., Rooney, R.
- 10:30** Are high elevation habitats a refuge from biological control for invasive spotted knapweed (*Centaurea stoebe*)? Bacon, E.S., Ensing, D., Eckert, C.G.
- 10:45** Factors affecting the spread of invasive earthworms in the Yukon. Paterson, S.M.A., Cameron, E.K.
- 11:00** Functional trait analysis demonstrates genetic variation for traits of flowering phenology in an invasive plant. Akbar, M., Colautti, R.I.
- 11:15** Interactions between sex phase and flower colour in the invasive weed *Saponaria officinalis*. Lewis, I., Friedman, J.
- MR9&10. Communication I**
- 10:30** Ambassador animals welfare: impact of education programs on behavioural and physiological wellbeing. Doyon-Degroote, S., Weladji, R., Paré, P., and Lazure, L.
- 10:45** Hug the one you're with: Domestic dogs are aroused but not stressed by human hugging. Brook, B., Anderson, W.G., Vasylyk, V., Keesom, S.M., Mullen, E., Schoen, A., and Hare, J.F.
- 11:00** Information gathering in black-capped chickadees is associated with higher annual survival. Mathot, K.J., Martin, J.G.A., Wijmenga, J.J. and Haave Audet, E.
- 11:15** At-sea vocalisations of the Common Murre. Wilcox, K., and Davoren, G.
- MR11&12. Symposium 7. Invited Talks. The Science and Art of Cytogenetics: Celebrating Canadian Contributions to the Field of Plant Cytotaxonomy. Continued**
- 10:30** Don Britton and Laima Kott: the cytological foundations of next generation fern systematics in the genus *Polypodium*. Sigel, E., Mendez-Reneau, J.
- 10:45** On the enigmatic supernumerary chromosomes of *Boechera*: inspired by the discoveries of Gerry Mulligan. Mandáková, T., Windham, M.D., Lysak, M.A.
- 11:30 - 12:50** Lunch
- 11:40-12:40** **MR9&10. Wildlife Acoustics Meeting**
- 12:50 - 14:00** York 2-4. Welcoming Remarks and Opening Plenary. Understanding biodiversity and ecosystem services across urban landscapes, Dr. Carly Ziter
- 12:00-12:45** CBA Section Meetings
- 14:00 - 14:30** **Exhibitor Hall. Coffee Break**
- MR1. Lightning Talks I**
- 14:30 - 14:45** How do roads and buildings act as barriers to pollinator movement and affect pollen dispersal in urban areas? Naik, N., Johnson M.T.J.
- Nature's clean-up crew: diet and behaviour of coyotes in southwestern Saskatchewan. Jackson, S.M., Miller, M.P., Good, S.V., Lingle, S.
- Obligatory grassland birds in the foothills parkland. Moore, Z.M., Koper, N., Norris, R.

Detailed Schedule: June 12

Horaire détaillé : 12 juin

- 14:45 - 15:00** The role of microRNAs in the pathogenesis of white-nose syndrome in *Myotis lucifugus*. Agarwal, A., Willis C.K.R., Shrivastav, A.
Decadal trends in the social structure of an endangered population of bottlenose whales. Walmsley, S.F., Feyrer, L.J., Whitehead, H.
The evidence for rapid evolution in response to warming, predation and competition. Grainger, T.G., Levine, J.M.
- MR1. Lighting Talks II**
- 15:15 - 15:30** Conservation of a rare plant in British Columbia must begin with learning how to identify it. Pawluk, M., Whitton, J., Jennings, L.
Bridging biodiversity and ecosystem services: the distribution of useful plants in Canada. Obiar, N., Eckert, I., Pollock, L.J., Moerman, D.
Investigating the correlation among nitrogen fixation, plant health, and biofilm formation. Shivnauth V., Burrows L., Coles V., Batstone R.
- 15:30 - 15:45** Findings on synergistic epistasis in *D. melanogaster* and its implications on the mutation deterministic hypothesis. Sayyed, I., Chippindale, A., Day, T.
Aboveground carbon storage dynamics in mid-elevational wet evergreen forests in Western Ghats, India. Medigeshe, H., Ganesan, R., Dayanandan, S.
MicroRNAs mediated environmental stress responses and toxicity signs in teleost fish species. Raza, S.H.A., and Hongtao, L.
- MR2. Effects of Climate Change**
- 14:30** Global change and their environmental stressors have a significant impact on soil biodiversity: a meta-analysis. Phillips, H., Cameron, E. K., Putten W. vd., Beaumelle, L.
- 14:45** Understanding eelgrass decline and possibilities for recovery in Eeyou Istchee (Eastern James Bay). O'Connor, M. Kuzyk, Z. Z., Leblanc, M-L., Noisette, F., Davis, K., Rabbitskin, E., Sam, L-L., Babb, D., Belanger, S., Clyne, K., Costanzo, R., Ehn, J., Fink-Mercier, C., del Giorgio, P., Gosselin, M., Idrobo, J., La Rocque, A., Leblon, B., de Melo, M., Neumeier, U., Humphries, M.M.
- 15:00** The effects of climate change on lakes and zooplankton communities at the IISD-Experimental Lakes Area. Paterson, M.J., Higgins, S.N., Havens, S.M.
- 15:15** Patterns of body size change in response to climate change vary across terrestrial vertebrates. Watson, M.J., Kerr, J.T.
- 15:30** Thermal position strongly predicts bumblebee diversity at local scales. Koppel, O., Kerr, J.
- 15:45** Plant community thermophilization over just two decades of warming in the Canadian Rocky Mountains. McFadyen, K., Lloren, J.I., McCune, J.L.
- 16:00** The effects of warming on floral traits. Lee, K., Way, D.A., McNeil, J.N.
- 16:15** Seedling recruitment patterns suggest lagged climate-driven range shifts in the North Cascades. Goodwin, K., Chardon, N., Pradhan, K., Hille Ris Lambers, J., Angert, A.
- MR3. Species Level Genomics**
- 14:30** Sex determination in sea lamprey: nature or nurture? Docker, M.F., Garroway, C.J., Grayson, P.D., Wright, A.E.
- 14:45** A whole-genome phylogeny and macroevolutionary assessment of hybridization in a live-bearing fish family (Poeciliidae). Lehmborg, E.S., Travis, J.A., Reznick, D.N., Blackmon, H., Rosenthal, G.G.
- 15:00** Pre- and post-zygotic reproductive barriers to inter-species hybrid sterility in *Caenorhabditis* nematodes. Dall'Acqua, M.N., Viswanath, A., Peake, A., Bielaska de Silva, J., Issakova, D., Cutter, A.D.
- 15:15** Is the atypical latitudinal diversity gradient in parasitoid wasps real? Castellanos-Labarcena, J., Steinke, D., Adamowicz, S.J.

Detailed Schedule: June 12

Horaire détaillé : 12 juin

- 15:30** Comparative genomics of shrews. Cossette, M.-L. Stewart, D.T., Shafer, A.B.A.
- 15:45** The evolutionary history of Pachyceriform sheep (*Ovis* spp.). Santos, S.H.D., Coltman, D.W.
- 16:00** Demographic history of the Pacific nudibranch genus *Hermisenda*. Dennis, M., Williams, K., Hart, M.W., Mooers, A.O.
- MR4. Symposium 9. Contributed Talks. The Science of Decision Support Systems in Conservation Ecology**
- 14:30** Duration of drought events affects annual ecosystem carbon sequestration in a temperate semiarid shrubland. Mu, Y., Xin Jia; Tianshan Zha
- 14:45** Genomic data to inform conservation translocations of salamanders in Alberta. Lee-Yaw, J.A., Kuhn, A.L., Weisrock, D.W.
- 15:00** The Conservation Exchange: measuring biodiversity benefits of conservation actions in Canada. Lalla, K., Lesbarrères, D., Camaclang, A., Smith, P.
- 15:15** Biodiversity conservation in working landscapes: tools for conservation planning and assessment. Paterson, J., Bortolotti, L., Kowal, P., Devries, J.
- 15:30** 30x30 biodiversity gains for Canada rely on national coordination. Eckert, I., Brown, A., Caron, D., Riva, F., Pollock, L.
- 15:45** Modelling long-toed salamander habitat in Alberta to prioritize sites for reintroductions. Finn, K.J., Bergman, J.C., Lee-Yaw, J.A.
- 16:00** Using whole-genome sequencing to inform conservation efforts for the critically endangered Poweshiek skipperling. Papineau, A., Burns, L. D., Petersen, S.D.
- 16:15** Do genome-wide SNPs and putatively adaptive SNPs identify the same set of distinct populations? Chhina, A., Fernandez-Fournier, P., Lewthwaite, J., and Mooers, A.O.
- MR7&8. Ecology, Behaviour and Evolution of Disease**
- 14:30** Age and space drive variation in parasitic Strongyle communities in feral horses. Ahn, S., Redman, E.M., Bellaw, J., Nielsen, M.K., Gilleard, J.S., McLoughlin, P.D., Poissant, J.
- 14:45** Rate of within-host fitness valley crossing is affected by transmission bottleneck size and infection lengths. Williamson, M.W., and Yeaman, S
- 15:00** Classification and identification of disease vectors using genomic signatures. Harrison, T.M.R., Rudar, J., Ogden, N., Steeves, R., Lapen, D., Baird, D., Gagné, N., Lung, O.
- 15:15** In vitro antifungal drug dosing regime influences adaptation and extinction in the human fungal pathogen *Candida albicans*. Sethi, P., Gerstein, A
- 15:30** Scent glands, social behaviour, and the potential for CWD prion transmission in deer. Ness, A., Saboraki, K., Jacob, S., Aiken, J., Gilch, S., McKenzie, D., Lingle, S.
- 15:45** Spatiotemporal dynamics of ticks and tick-borne disease at NEON sites across a sub-continental scale. Rivera, S., Barton, J., Strong, C., Zuckerberg, B., LaMontagne, J.
- 16:00** Community phylogenetic structure shapes pathogen outbreak potential in an epidemiological multi-host model. Toorians, M.E.M. Smallegange, M.I.M. Davies, T.J.
- 16:15** Using viral-induced flower colour change to study turnip mosaic virus prevalence in *Hesperis matronalis*. Dawson, K. T., Eckert, C.G.
- MR9&10. Social Behaviour**
- 14:30** The nocturnal gliders: exploring ultrasonic vocalizations and ultraviolet fluorescence. Newar, S., Bowman, J.
- 14:45** Promiscuity and kinship in a cooperative breeding African ground squirrel. Waterman, J.M., Lem, R.H.
- 15:00** The effects of combination of multiple environmental stressors on learning capacities in Trinidadian guppies. Brusseau, A.J.P., Brown, G.E.

Detailed Schedule: June 12

Horaire détaillé : 12 juin

- 15:15** A look inside the net: Feeding aggregations provide insight into social structure of freshwater turtles. Menzies, C., Dakin, R., Davy, C.
- 15:30** Increasing group size decreases per capita reproductive success in joint-laying smooth-billed ani. Mann, Q., Grieves, L.A., Quinn, J.S.
- 15:45** Non-kin communal group size and territory quality in smooth-billed anis. Quinn, J.S., Lentz, C., Bolker, B.
- MR11&12. Trophic Interactions**
- 14:30** Dietary metabarcoding reveals patterns of grazing ecology in an island population of mammalian herbivores. Greuel, R., Poissant, J., and McLoughlin, P.
- 14:45** Changes in peatland soil fauna biomass alter food web structure and function under warming and hydrological changes. Pettit, T., Faulkner, K.J., Buchkowski, R.W., Kamath, D., Lindo, Z.
- 15:00** Dispersal mediates trophic interactions and habitat connectivity to alter metacommunity composition. Gordon, S.C.C., Martin, J.G.A., Kerr, J.T.
- 15:15** Investigating the mechanisms of Arctic fox (*Vulpes lagopus*) ecosystem engineering in tundra heath communities. Baron-Preston, L., Markham, J., Roth, J.D.
- MR11&12. Symposium 8. Contributed Talks. Integrating Equity into Urban Ecology and Evolution: Diverse and Interdisciplinary Perspectives for the Benefit of All**
- 15:30** Assessing justice in the spatial pattern of urban forests and heat in mid- and large-sized cities. Masoudi, M., Drescher, M., and Mahdianpari, M.
- 15:45** Urban socioeconomic variation influences the ecology and evolution of goldenrod gall flies and their predators. Martin, E., El Galmady, S., Johnson, M.T.J.
- 16:00** Science and the art of making a difference: perspectives on policy change. Kerr, J.T.
- 16:15** Global Urban Evolution 2.0: Adaptive and nonadaptive evolution to cities and climatic gradients in a cosmopolitan plant. Johnson, M., Caizergues, A., Santangelo, J. S., Battlay, P., Jonas, M.R., Hendrickson, B.T., Kooyers N.J., Hodgins K.A., Ness R.W.
- 16:30 - 18:00** **Exhibition Hall. Poster Session 1.** Note: all posters will be on display on June 12 and 13.
- 19:45 - 21:00** **Public Plenary at the Canadian Museum for Human Rights.** Prioritizing Indigenous values in wildlife conservation. Dr. Allyson Menzies

Detailed Schedule: June 12

Horaire détaillé : 12 juin

Monday, June 12	
Poster Location	Title. Author(s)
1	Fertility defects and seed set reduction in <i>Arabidopsis</i> auxin transport mutants. Reiter, J.W., Schultz, E.
3	Strong autocorrelation in temperatures and performance of duckweed populations. Andrade Pereira, D.
5	Afforestation of abandoned agricultural land by hybrid poplar and its repercussion on plant communities. Zanin, G., DesRochers, A., Fenton, N.J.
7	The diversity of the vaginal mycobiome in the context of recurrent vulvovaginal candidiasis. San Juan, J.
9	Root responses to phosphorus assessed on nutrient media and lightweight expanded clay aggregates (LECA). Hasan, M., Schultz, E.
11	Demographic consequences of environmental variability in a rare cacti. Fernández, T, del Carmen Mandujano Sánchez, M.
13	Genetic impacts on the recovery of two endangered whale species. Salinger, A.L., Frasier, T.R.
15	Trait genomics of white-tailed deer: A focus on pigmentation, jaw deformity, and body size. Cars, B.S., Kessler, C., Shafer, A.B.A.
17	The role of sexual selection and immigration in rapid adaptation to novel environments in <i>Drosophila suzukii</i> . Alvi, S., Sztepanacz, J.
19	Locating critical polar bear denning areas in Manitoba for wildfire management. Grottole A., Owwoeye O., Petersen S.D.
21	Spread of non-native plants from roadsides in the Northwest Territories, Canada. Singer, C.L.
23	Investigating personality in razorbills (<i>Alca torda</i>). Legard, M.
25	Hibernation energetics and cues for emergence in <i>Myotis lucifugus</i> . Reimer, M.H.R., Sadana, P., Norquay, K.J.O, Fletcher, Q.E., Willis, C.K.R.
27	Do producer-scrouter dynamics influence resource availability during habitat selection? Robitaille, A.L., Vander Wal, E.
29	Can migratory birds catch-up after an experimental delay? Fraser, K.C., Bani Assadi, S., Turcotte van de Rydt, C., Smith, K.
31	Predator preference as a prey shield: do preferred prey hide amongst their competitors? Carswell, B.M., Prokopenko, C.M., Avgar, T., Street, G., Vander Wal, E
33	Using metabarcoding as to examine collembola and mite community composition in Atlantic Canada. Vickruck, J., MacKinley, P., Mitterboeck, F., MacKinley, K., Comeau, L.-P.
35	Move-aside: diet of co-occurring invasive marine crabs (Asian shore crab vs. European green crab). Mader, L., Bharti, A., Dejaegher E., and Ramey-Balci, P.A.
37	Ducks and submersed aquatic vegetation respond positively after invasive carp exclusion. Bortolotti, L.E., Emery, R.B., Kowal, P.D., Armstrong, L.M., Harriman, V.B., Singer, H.V., Anteau, M.J., Baldwin, F.B., Meuckon, C., Wrubleski, D.A.
39	Measuring plant diversity changes in urban ecological corridors: a pilot project. Zgurzynski, K., Cavallin, N., Wiercioch, T., Galbraith, D.
41	Interdisciplinary approach to non-invasively monitoring a northern marine ecosystem. Westphal A.M., Breiter, C.C., Falconer, S., Saffar, N., Ashraf, A.B., McCall, A.G., Mclvor, K. Petersen, S.D.
43	Plant responses to mycorrhizal fungi along a nutrient gradient. Yuan, R.L., White, S.R., Cahill, J.F., Bennett J.A.
45	The nature of non-linear selection on repeated floral traits. Traylor, A., Austen, E.
47	Snail-fur symbionts: ectosymbiotic ciliates of freshwater snails in Alberta. Stormer, H., Proctor, H.
49	Genetic neighbourhood and competitive dominance intensify response to selection for earlier flowering time. DesRoches, A.R., Weis, A. E.
51	Habits, habitats, and host specificity of burying beetle-associated mites (Mesostigmata: <i>Poecilochirus</i>) in Alberta. Grappone, B.A., Proctor, H.
53	Examining the correlation between spatial distance and phenotypic similarity in the clonal plant <i>Lysimachia terrestris</i> . Deadman-Wylie, G., Austen, E.

Detailed Schedule: June 12

Horaire détaillé : 12 juin

- 55 Understanding the origin of the HPG axis in vertebrates: a molecular comparative approach using sea lamprey. Keen, A., Yasmin, T., Docker, M., Good, S.V.
- 57 The genetic determinants of host range evolution in the plant pathogen *Xanthomonas campestris*. Bull, E.M., Dillon, M.M.
- 59 Could evo-devo be more than gene switches? Reimer Epp E., Unger E., Trump, E., Aguilar E., Doerksen A., Doucet, D., Friesen N., Ignagni J., Kilbreri, Kroeker T., Neufeldt H., Scott T., Van Benthem N., Werbiski J., Malagon JN.
- 61 Interaction between salinity tolerance and insect herbivory resistance in hybrid poplar. Moran C, Bandara S, Pandey D, Renault S, Avila-Sakar G
- 63 Morphometric analysis of polar bear and ringed seal teeth as an indicator of environmental change in the Arctic. Church, C., Richardson, E., Ferguson, S., Young, B., Matthews, C. Desforges, J.-P.
- 65 Exploration of epigenetic control of candidate genes involved in sex determination of sea lamprey. Pitzel, A., Kisselev, I., Good, S.V.
- 67 Effect of acute exposure to elevated carbon dioxide concentrations on *Oryzias latipes* eggs and larvae. Wallace, G.E., Hasler, C.T.
- 69 Characterizing species niche space across the *Caenorhabditis* nematode genus. Wong, A. R., Cutter, A. D.
- 71 The role of interspecific competition in the dispersal and spread of an annual plant. McHugh, E., Urquhart, C., Williams, J.L.
- 73 Investigating how ecological factors shape natural genetic variation and population structure of *Lythrum salicaria*. Gomez Quijano, M.J., Colautti R.I.
- 75 Got nifH? An exploration of Ectomycorrhizal associated diazotrophs. Duke, B., Kernaghan, G.
- 77 Common drivers of urban forest ecosystem services across Canadian cities. Richmond, I.C., Yu, N., Robitaille, A., Hutt-Taylor, K., Ziter, C.D.
- 79 What do Arctic char (*Salvelinus alpinus*) populations in Nunavik and Nunavut eat? Picard, M-H., Wiley, S., Harris, L., Falardeau, M., Archambault, P., Moore, J.S.
- 81 Demographic history of leuciscid minnow species in anthropogenically disturbed environments. Pitura, A.R., Meuser, A.V., Mandeville, E.G.
- 83 Conservation, climate change, and interdisciplinary collaborations. Van Benthem, N., Malagon, J.N.
- 85 A range-wide genomic assessment of inbreeding levels in Western Canada caribou. Bourbon C., Michalak A., Cavedon M., Neufeld L., Pelletier A., Polfus J., Schwantje H., Steenweg R., Thacker C., Musiani M., Poissant J.
- 87 Weather and emergence date as drivers of hibernation initiation in Columbian ground squirrels. Miller, M.P., Lane J.E.
- 89 Testing the accuracy of fish phylogenetic trees built by placing DNA barcode sequences. Fernando, M. A. T. M., Adamowicz, S. J., Fu, J.
- 91 Climate and land-use gradients influence functional traits and community structure of arthropods in agroecosystems. Guezen, J.M., Anand, M.
- 93 Using nematode communities to evaluate the effects of topography and grazing on the function of grassland soils. Elkins, K., Otfinowski, R
- 95 Quantifying the effect of administrative approval reforms on SO₂ emissions: a quasi-experiment in Chinese cities. Fahad, S.

Virtual Posters: not being shown in person

The bryophyte flora of Manitoba's Great Lakes forest. Caners, R.T.

Why the pelagic community has a greater predator-prey body size ratio: from the perspective of 3D foraging. Chen, X.

Diversity and dynamics of host ranges in *Cuscuta gronovii* species complex (sect. *Oxycarpae*, subg. *Grammica*). Fleet, C., Costea, M.

Needle and bud scale production in Norway spruce. Wenzel, C., Xia, A., Saunders, R., Ly, H., Holloway, D.

Detailed Schedule: June 13

Horaire détaillé : 13 juin

Tuesday, June 13	
Room. Session Title	
MR1. Symposium 1. Invited Talks. Ecological Dimensions of Hybridization.	
8:30	The evolution of sex is tempered by costly hybridization in <i>Boechea</i> . Rushworth, C.
8:45	Ancient and contemporary hybridization in endangered <i>Arabis</i> floodplain species. de Meaux, J.
9:00	Differential introgression of putative adaptive loci across the mosaic lodgepole x jack pine hybrid zone. Cullingham, C.
9:15	Ecology and genomics of <i>Catostomus</i> fish hybridization. Mandeville, L.
9:30	Predictability and causes of trait mismatch in hybrids between divergent monkeyflower species. Coughlan, J.
9:45	Mechanisms underlying hybrid fitness in songbirds. Taylor, S.
MR2. Symposium 3. Invited Talks. The Spatial-Social Interface: from Plants to Predators.	
8:30	Sociality and utility in social and spatial environments: how sparse resources shape bighorn sheep movements at multiple scales. Kezia Manlove
8:45	Emergent properties from fine scale movement behavior in Yellowstone bison: an empirical test of the spatial-social interface. Anne Scholle
9:00	Memory keeps you at home and within a social group: a mechanistic movement model of social network emergence. Tyler Bonnell
9:15	Friends because of foes: the interplay between space use and sociality in mediating predation risk. Christina Prokopenko
9:30	Integrating social dynamics into movement ecology with socially informed step selection. Julie Turner
9:45	Interunit dominance predicts core unit social network position in a Rwenzori colobus multilevel society. Julie Teichroeb
MR3. Symposium 6. Invited talks. The State of Plant Conservation in Canada.	
8:30	What are the major gaps in plant conservation in Canada? — a survey of plant practitioners. McCune, J., Vamosi, J., Whitton, J.
9:00	The impact of taxonomic uncertainty on plant conservation in Canada. Whitton, J.
9:30	Prairie-made conservation: plant conservation initiatives in Saskatchewan. Vinge-Mazer, S., Neufeld, C., Vass, A.
MR4. Ecophysiology and Life History	
8:30	Differential resting metabolism between rainbow trout growth forms supports pace of life hypothesis. Rennie, M.D., Greenaway, B., Veneruzzo, C.
8:45	Sensory ecology of fishes: Trade-offs and synergies between vision, audition and olfaction. Proulx, R., Mazzei, R.
9:00	Morphology of Arctic cod (<i>Boreogadus saida</i>) assessed according to habitat preference and age in the Beaufort Sea. Malizia, J., Launay, M., Bruvold, I., Quintela, M., Johansen, T., Reist, J., Majewski, A., Roy, D.
9:15	Early allocation to growth and reproduction affects asymptotic size and growth in eastern grey kangaroos. Forrester, K., Festa-Bianchet, M., Macdonald, A.A.M.
9:30	Testing for environmental dependence of genetic covariation on life-history trait correlations for red squirrels. Baloun, D.E., Delaney D.M., McAdam A.G., Dantzer B., Boutin S., Lane J.E.
MR7&8. Symposium 12. Invited talks. Plant Development and Environmental Interactions	
8:30	Crop roots and stresses — the story underground. Gorim, L.

Detailed Schedule: June 13

Horaire détaillé : 13 juin

- 9:00** Now you see me, now you don't: adaptive colour variation in wild sunflowers. Todesco, M., Bercovich, N., Kim, A., Heredia, S., Owens, G., Rosas, U., Colautti, R., Takayuki, T., Moroldo, M., Bock, D., Grassa, C., Imerovski, I., Dorado-Ruiz, O., Holalu, S., Madilao, L., Jahani, M., Légaré, J.-S., Fernie, A., Blackman, B., Langlade, N., Rieseberg, L.
- 9:30** Comparative nectary development in Cleomaceae. Hall, J., Zenchyzen, B., Carey, S.
- MR9&10. Arctic Genomics**
- 8:30** Two sympatric killer whale populations in Eastern Canadian Arctic waters: secondary contact and signatures of selection. de Greef, E., Garroway, C.J.
- 8:45** Circumpolar analysis of spatial and environmental variation in polar bear genetic structure. Rivkin, L. R., Richardson, E., Garroway, C.J.
- 9:00** Genome-wide patterns of genetic load and purging in Balaenidae whales. Orton, R.W. , Crossman, C.A., Frasier, T.
- 9:15**
- 9:30** Using whole genome re-sequencing to uncover population structure in anadromous sea lamprey across its native range. Karachaliou, E., Suurväli, J., Evanno, G., Castro-Santos, T., Wilkie, M., Jóhannsson, M., Jónsson, B., Baer, J., Bracken, F., Mateus, C., Svensson, M., Thysell, E., Evans, T., Fisk, M., Hogue, G.M., Garroway, C.J., and Docker M.F.
- 9:45** The complex population structure of Canada's Belugas. Müller, C., de Greeve, E., Ferguson, S., Garroway, C.J.
- MR11&12. Symposium 11. Invited Talks. The Future of Herbarium Collections and Taxonomy in Ecology and Evolutionary Studies**
- 8:30** Thinking outside the cabinet: a bright future for Canadian herbaria. Bruneau, A., Ford, B.
- 8:45** Broadening field collection to three dimensions. Leménager, M., Simon, J.
- 9:00** Has butterfly wing colour lightness changed over recent decades in eastern Canada? Dolson, S.J., Kharouba, H.M.
- 9:15** Modelling the Canadian flora into the future and into the unknown. Pollock, L., Eckert, I.
- 9:30** Self-governance of Indigenous data within biological collections and ecology research. Cardinal-McTeague, W., Klymiuk, A.
- 9:45** Sequencing high-quality plant genomes with the Canada BioGenome project, and what to do with them. Graham, S.W., Jones, S.J.M., Jones, S. J.
- 10:00 - 1030** **Exhibitor Hall. Coffee Break**
- MR1. Symposium 1. Invited Talks. Ecological Dimensions of Hybridization. Continued**
- 10:30** Evolution of hybrid stickleback genomes. Schluter, D.
- 10:45** Predicting heterosis in early generation hybrids. Rieseberg, L.
- 11:00** The biology of homoploid hybrid speciation in *Lepidothrix* manakins. Mikkelsen, E.
- 11:15** Mating system and hybridization combine to effect range-wide genetic structure in a coastal endemic plant. Van Natto, A.
- 11:30** Hybridization and adaptation during biological invasions of anoles. Bock, D.
- MR2. Plant Genomics**
- 10:30** Genome-wide signatures of selection associated with urbanization in a cosmopolitan plant. Santangelo, J., Johnson, M., Ness, R., Nielsen, R.
- 10:45** Lingonberry genome evolution and diversity. Hirabayashi, K., Owens, G.L.

Detailed Schedule: June 13

Horaire détaillé : 13 juin

- 11:00** Circumscription of species in *Cuscuta* subgenus *Monogynella* (Convolvulaceae). Albal, A., Costea, M., Stefanovic, S.
- 11:15** Phylogenetic reconstruction and species circumscription of the hemiparasitic genus *Cassytha* (Lauraceae). Majumder, F.K., Mathews, S., Stefanovi, S.
- 11:30** Divergent patterns of presence/absence variation in pathogen resistance genes in wild tomato during the colonisation of novel habitats. Gagnon, E., Silva Arias, G.A., Hembrom, S., Fastner, A., Ramzan Khan, M., Stam, R., Tellier, A.
- MR3. Symposium 6.** The State of Plant Conservation in Canada. Continued
- 10:30** The state of plant conservation in Ontario. Brinker, S.
- 11:00** Ontario bryophyte diversity and abundance: data sources, challenges and opportunities. Doubt, J., Robillard, C.
- 11:30** Review of recovery progress for SARA-listed plants of Garry oak ecosystems. Miskelly, J.
- MR4. Communication II**
- 10:30** The effect of abiotic stimuli on the predation efficiency of water tigers (*Dytiscus alaskanus*). Ulrich, J. C., Chivers, D. P., Ferrari, M. C.O.
- 10:45** Dinner or dismay? Behavioural response of crayfish to alarm cues when fed a cannibalistic diet. Achtymichuk, G.H., Fish, K.M., and Ferrari, M.C.O.
- 11:00** Evidence for variance-sensitive provisioning in Peregrine Falcons in response to increased nestling demand. McKinnon, R.A., Hawkshaw, K., Hedlin, E., Nakagawa, S., and Mathot, K.J.
- 11:15** Fool me twice: Personality-related recapture bias in black-capped chickadees, *Poecile atricapillus*. LaRocque, M., Arteaga-Torres, J.D., Sridharan, S., Wijmenga, J.J., Audet, E.H., and Mathot, K.J.
- MR7&8. Agroecosystems and Ecotoxicology**
- 10:30** Perpetuating Périgords: The effect of irrigation on soil mycelia in a Canadian English oak – black truffle orchard. Loverock, B., Mezzini, S., Berch, S., Jones, M., Hannam, K., Durall, D.
- 10:45** Meta-analysis of the impacts of chloride-based road salts on biodiversity and ecosystems. Silver, M., Cameron, E., Medeiros, A.
- 11:00** The fate of 17 β -estradiol in snowmelt from a field with a history of manure application. Soto, H.S.J.S., Amarakoon, I.D., Casson, N.J., Kumaragamage, D., and Wilson, H.F.
- 11:15** Testing native plants as cover crops in vineyards. Zgurzynski, K., Vasseur, L.
- MR9&10. Community Structure I**
- 10:30** Effects of urbanization on the latitudinal diversity gradient in birds. Griffith, J., Sunday, J.M. and Hargreaves, A.L.
- 10:45** Changes in the soundscape during capelin spawning in coastal Newfoundland. Epp, M. V., Davoren, G. K.
- 11:00** Historical dispersal and the maintenance of biodiversity in fluctuating environments. Kowalski, J.K., Gilbert, B., Straus, S.E., and Germain, R.M.
- 11:15** Factors structuring Caribbean coral reef communities. Pauli, B., McCann, K., Vallès, H., O'Connor, R., Ward, C.
- MR11&12. Symposium 11.** Invited talks. The Future of Herbarium Collections and Taxonomy in Ecology and Evolutionary Studies. Continued
- 10:30** Using herbarium records in estimating the threat of extinction to plants in Canada. Vamosi, J.
- 10:45** Discussion panel. Bruneau, A.
- 11:50 - 12:35** **MR2.** NSERC Discovery Grant Information Session

Detailed Schedule: June 13

Horaire détaillé : 13 juin

- 11:45-13:15** Lunch
- 12:15-13:15** **MR4. CBA-CSEE Teaching Section Meeting**
- MR1. Evolutionary Ecology of Vertebrates**
- 13:15** The effect of hunting-induced selection on coat colour and horn characteristics in Yukon thinhorn sheep (*Ovis dalli*). Balsara, M., Sherbourne, A., Santos, S., Coltman, D.
- 13:30** Intraspecific variation in postweaning growth rates in Columbian ground squirrels. Guerrero-Chacón, A. L., Lane, J. E.
- 13:45** Elevated predation risks lead to rapid plastic changes in brain morphology in teleost fishes. Brown, G.E., Joyce, B.J., Donaldson, B.
- 14:00** A disease-mediated shift in personality of little brown bats following the emergence of white-nose syndrome. Nash, L.M., Quinn, F., Webber, Q.M.R., and Willis, C.K.R.
- 14:15** Population growth rates and size of diverse species is predicted by nonlinear averaging of temperature. Oshinubi, K., Wittmann, M.
- MR2. Population Genomics**
- 13:15** Movement behaviour links genetic diversity to the environment. Newediuk, L., Garroway, C.
- 13:30** The genomic consequences of genetic rescue events on traits associated with phenology and disease survival. Galfano, T., Miller, J.M., Hogg, J.T., Coltman, D.W.
- 13:45** Demographic decline and lineage-specific adaptations in kiwi: conservation genomics of a flightless bird. Bemmels, J.B., Mikkelsen, E.K., Haddrath, O., Colbourne, R.M., Robertson, H.A., Weir, J.T.
- 14:00** Range-wide genomic variation in the irruptive forest pest, mountain pine beetle (Curculionidae, *Dendroctonus ponderosae*). Balzer, Z., Grela, C., Peery, R., Cullingham, C., Coltman, D.
- 14:15** Evolutionary history and diversity of human-specific FAM72A paralogs: insights from population genetics. Kisselev, I., Good, S.V.
- 14:30** Determinants of success in introduced admixed populations of threespine stickleback. Eckert, L., Bell, G., Hendry, A., Barrett, R.
- MR3. Symposium 6. Invited talks. The State of Plant Conservation in Canada. What are the Major Gaps in Plant Conservation in Canada? Continued**
- 13:15** Preserving endangered plant species: the role of in vitro technology in biodiversity conservation. Shukla, M., Saxena, P.
- 13:45** Traditional Ecological Knowledge systems and plant conservation in Canada. Turner, N.
- 14:15** Predicting the impacts of climate change on rare plants in Nova Scotia: a plant element approach. Hill, N., Boates, J.S., Garbary, D.J., Blaney, C.S.
- MR4. Reproductive Strategies I**
- 13:15** Species coexistence promotes alternative pace-of-life strategies. Hughes, B., Bowman, J., Mastro Monaco, G., Schulte-Hostedde, A.
- 13:30** Clutch synchrony increases hatching success and survival in a joint-laying bird. Benjamin, J., Landsborough, B., Quinn, J.
- 13:45** Intense cougar predation induces non-lethal effects on bighorn sheep population dynamics. Cloutier, Z., Festa-Bianchet, M., and Pelletier F.
- 14:00** Differences in multi-male and one-male core unit social networks reveal spatial and time constraints in Rwenzori colobus. Adams, F.V., Mujjuzi, E., and Teichroeb, J.A.

Detailed Schedule: June 13

Horaire détaillé : 13 juin

MR4. Symposium 10. Contributed Talks. Microbial Ecology and Evolution.

- 14:15** Origins and maintenance of host specialization in plant leaf bacteria symbioses. Wang, Z., He, F., Kembel, S.W.
- 14:30** Stability and host specificity in the seaweed microbiome. Schenk, S.S., Davis, K.D., Park, J.

14:45 - 15:15 **Exhibitor hall.** Coffee Break

MR7&8. Population Ecology

- 13:15** Effects of local breeding environmental conditions on Tree swallow (*Tachycineta bicolor*) population dynamics. Le Vaillant, J., Pigeon G., Garant D., Pelletier F.
- 13:30** Estimating Arctic killer whale age class structure using epigenetic aging. Kucheravy, C.E., Garroway, C.J., Ferguson, S.H., Jones, M.J., Matthews, C.J.D.
- 13:45** Temporal scaling and temporal shifting in temperature-dependent senescence of an aquatic plant. Paiha, A.P., Luzardo, A., Chmilar, S.L., Laird, R.A.
- 14:00** The interactive nature of temperature and nutrients on population dynamics and extinction risk. Bieg, C., Vasseur, D.
- 14:15** Forest management alternatives to prescribed burning for black spruce regeneration in Terra Nova National Park, NL. Proctor, E.L., Brown, C.D.
- 14:30** Drivers of change in the temperate-boreal forest refugium of Cape Breton Highlands National Park. Kosick, H., Brown, C. D.

MR9&10. Community Structure II

- 13:15** Clade-specific phylogenetic structure of boreal habitats suggests non-uniform assembly processes. Armijos Carrion, A.
- 13:30** Spatial distributions of symbiotic fish-sponge partners along a heterogeneous coral reef. Naaykens, T., Fahim, H., D'Aloia, C.C
- 13:45** Is there a peak here? Quantifying extrema in ecological data and time series with GAMs. Pedersen, E., Dupont, N., Irvine, F.

MR9&10. Conservation Biology and Species at Risk II

- 14:00** What drives uncertainty in conservation decision-making? Robichaud, C., Beaudoin, C., Cooke, S., Young, N., Nguyen, V., Vincent, J., Bennett, J.
- 14:15** Monitoring success of Critically Endangered butterfly releases in Manitoba through distance sampling transects. Burns, L.D., Westphal, A.M., and Petersen, S.D.
- 14:30** Mercury concentrations decline with age in the fur of an insectivorous terrestrial mammal (*Myotis lucifugus*). Grottoli, A., Swanson H.K., Broders H.G.

MR11&12. Lightning Talks III

- 13:15 - 13:30** How open is climate change research? Granados, M., Green, C.
Biodiversity Atlas: wetlands of Abitibi and Eeyou Istchee James-Bay. Morarin, J., Fenton, N.
Meta-analysis of the cooling effects of green roofs. Dayanandan, N., Ziter, C.
- 13:30 - 13:45** Natural and anthropogenic determinants of the structure of freshwater food webs. Soares, B. E.
Delineating management units for invasive sea lamprey populations in the Great Lakes. Ogden, J.L., Docker, M.F., Mahoney, M.L., Grayson, P., Suurväli, J., Garroway, C.J.
Growing beyond colonial herbaria. Doubt, J., Cavallin, N.

Detailed Schedule: June 13

Horaire détaillé : 13 juin

- 13:45 - 14:00** Mentorship and community building support Indigenous undergraduate STEM students. Casson, N., Martin, M., Anderson, M.
Revitalising the potato patch: skwenkwinem (western spring beauty, *Claytonia lanceolata*) agro-ecology for Skeetchestn. Ensing, D.J., Ignace, L., Pilat, H.E., Draney, S., Allan, M., Marshall, V., Pither, J., Freeman, S
New estimates indicate that males are not larger than females in most mammals. Tombak, K.J., Hex, S.B.S.W., Rubenstein, D.I.
- MR11&12. Plant/Soil Microbe Interactions**
- 14:15** Effect of ecological restoration on the resources and services that mycorrhizal networks provide to plants. MacColl, K. Maherali, H.
- 14:30** Edge influences & effects of fragmentation on ectomycorrhizal fungal communities in & around 26-year-old clearcuts. Rianhard, O., Kranabetter, M., Durall, D., Pither, J., Jones, M.D.
- 15:15 - 16:15** **MR1. Panel Discussion.**
Bridging western science and Indigenous approaches to education, research, and conservation.
Panel: Az Klymiuk, Warren Cardinal-McTeague, Shianne McKay, Allyson Menzies, Gabriel Nemoga.
Moderator: Aerin Jacob
- 15:15 - 16:00** **MR2. Lightning Talks IV**
- 15:15 - 15:30** Macrofungal conservation in Canada and target species for assessment: a starting point. Bazzicalupo, A., Gonçalves, S.C., Hébert, R., Jakob, S., Justo, A., Kernaghan, G., Lebeuf, R., Malloch, B., Thorn, R.G., Walker, A.K.
Genetic, environmental, and social effects on human-polar bear conflicts. Kathan, L., Richardson, E., Nicholas, L., Trim, V., Derocher, A., Garroway, C.
Efficacy of prescribed fire and grazing for Kentucky bluegrass control. Lamb, E.G.
- 15:30 - 15:45** Narwhal displacement in response to increased Arctic shipping. Marcoux, M., Garde, E., Hansen, R.G., Heide-Jørgensen, M. P., Hobbs, R.C., Tervo, O.M., Watt, C., Witting, L.
Intra-individual variation in seed size and leaf morphology. Ávila Sákar, G.
Eco-evolutionary consequences of climate change for polar bears. Richardson, E.S., Lunn, N.J. McGeachy, D.
- MR3. Symposium 6. Invited Talks. The State of Plant Conservation in Canada. What are the Major Gaps in Plant Conservation in Canada? Continued**
- 15:00** Are range edge populations important for the conservation of species at risk? Eckert, C., Cross, R., Gillies, G., Hargreaves, A.
- 15:30** The role of botanical gardens in plant conservation: a Canadian perspective. Galbraith, D.
- 16:00** Panel Discussion: What are the priorities for advancing plant conservation in Canada?
- MR4. Symposium 10. Contributed Talks. Microbial Ecology and Evolution. Continued**
- 15:15** Testing the outcomes of host-microbiome interactions across 1000 environments. Wang, J., Kose, T., Lins, T.F., Pogoutse, O., Sinton, D., Frederickson, M.E.
- 15:30** Predicting fitness in different environments using fundamental trade-offs for cell growth. Meghrazi, M., Otto S.P
- 15:45** Yeast community composition in Nova Scotia vineyards: from broad patterns to case study. Bunbury-Blanchette, A.L., Fan, L., and Kernaghan, G.
- 16:00** Does temperature-dependent nitrogen supply set the pace of photosynthesis with warming? Davis, K.E., O'Connor, M.I.

Detailed Schedule: June 13

Horaire détaillé : 13 juin

- 16:15** Diversity and community structure of nitrogen-fixing nodule endophytes in mining-disturbed and intact tundra. Li, A., Stewart, K., Standen, K., Lamb, E.
- MR7&8. eDNA and barcoding**
- 15:00** Concealed in plain sight: the hidden vault of global biodiversity data. Clare, E.L., Littlefair, J.E., Allerton, J.J., Brown, A.S., Butterfield, D.M., Robins, C., Economou, C.K., Garrett, N.R.
- 15:15** Assessing fish biogeography across the Pacific North American coast using eDNA. Sheridan, K., Lemay, M., Morien, E., Duffy, E., Hessing-Lewis, M., Sunday, J.
- 15:30** Processes driving individual variation in environmental DNA production rates in *Daphnia magna*. Wang, X., Hanner, R., Fryxell, J.
- 15:45** Using DNA barcoding to assess biodiversity of freshwater invertebrates and biting insects on Inuinnait Nuna. Nowosad, D., Hogg, I., Cottenie, K., Lear, C., Adamowicz, S.
- 16:00** Out of thin air: surveying tropical bat roosts through air sampling of eDNA. Garrett, N.R., Watkins, J. Francis, Simmons, N.B., Ivanova, Naaum, Briscoe, Drinkwater, R., Clare, E.C.
- 16:15** A comparison of specimen- vs soil-based metabarcoding for mesofaunal communities. Sahdra, S., Young, M., Phillips, L., Schwarzfeld, M.
- MR9&10. Species Range Distribution**
- 15:15** Does habitat quantity decline towards a species range edge? Rahn, O., Hargreaves, A.
- 15:30** Effects of coral reef characteristics on the distribution and abundance of a microhabitat specialist fish. Fahim, H., Naaykens, T., D'Aloia, C.C.
- 15:45** Harbour Seal (*Phoca vitulina*) use of freshwater habitats in the Churchill River, Manitoba. Petersen, S.D., Breiter, C.B, and Florko, K.R.N.
- 16:00** Biotic agents and abiotic factors create a mosaic of local adaptations in lodgepole pine. Peery, R. M., Cullingham, C. I., Miller, J. M., Cooke, J. E. K., Coltman, D. W.
- 16:15** Relative importance of positive vs. negative biotic interactions across a species' elevational range. Meadley Dunphy, S. A., Hargreaves, A. L.
- MR11&12. Plant/Soil Microbe Interactions. Continued**
- 15:15** Microbial drivers of inter and intraspecific variation in plant-soil feedback. Bennett, J.A., Awodele, S.A., Bainard, L., Tremblay, J.
- 15:30** Plant diversity drives plant-soil feedback under a perennial forage system. Huang, Y., Bennett, J.A.
- 15:45** Soil fungal pathogens coincide with presence of non-native plant species in partially restored montane grasslands. Bermúdez-Contreras A. I., Yakiwchuk, B., Karst, J.
- 15:15 - 14:30** **York 2-4.** Saving Data: A film screening and reflection by the Living Data Project participants. Higino, G., Straus, S., Mike Lavender, M., Srivastava, D.
- 16:30 - 18:00** **Exhibitor Hall.** Poster Session 2.

Detailed Schedule: June 13

Horaire détaillé : 13 juin

Poster Location	Title. Author(s)
2	Energetics of fat accumulation by endangered little brown bats during pre-hibernation. Sadana, P., McNicol, F., Willis, C.
4	Turnover of pine ectomycorrhizae. Kernaghan, G., LeFait, B., Hussain, A.
6	Macrofungal diversity in threatened old-growth eastern hemlock stands of Kejimikujik National Park, Nova Scotia, Canada. Mader, R. M., Crooks, O., Egger, K. N., Smith, M. J., Walker, A. K.
8	Cortisol level in moose killed by wolves: a comparison of two populations in Manitoba. Kingdon, K.A., Prokopenko, C.M., Turner, J.W., Zabihi-Seissan, S., Vander Wal, E.
10	Is self-incompatibility system a reproductive barrier for hybridization in sympatric species? Martínez-Ramos, L., Vázquez-Santana, S., García-Franco, J., Mandujano M.C.
12	Fine-scale stock structure of the whelk <i>Buccinum undatum</i> in NAFO subdivision 3Ps. Baker, K.D., D'Aloia, C.C.
14	Susceptibility of black ash stands around Lake Duparquet (North QC.) to changes in water levels and spring flood regimes. Nolin, A.F., Tardif, J.C., Bergeron, Y.
16	Investigating freshwater insect biodiversity in urban stormwater ponds in the Greater Toronto Area. Ferzoco, I.M.C, McCauley, S.J.
18	Plasticity of ideal free and ideal despotic distribution strategies within individual animals. Kusch, J.M., Vander Wal, E.
20	Investigating the influence of parasitism on dispersal and cannibalism behaviors of backswimmers. Regimbal, N. L., Baines, C .B.
22	Using geolocator data to quantify behaviour in Atlantic puffins and razorbills on the northeast Newfoundland coast. Runnells, E.S., Legard, M.J., Davoren, G.K.
24	A metacommunity approach to investigating the influence of hydrological connectivity on fish communities composition. Beach, W.
26	Are shorter species in herbaceous vegetation more shade-tolerant? Balfour, K.C., Schamp, B.S., Aarssen, L.W.
28	Impacts of invasive spiny water flea on mercury accumulation and growth rates of adult walleye. Wood J.B., Rennie M.
30	Leafy spurge (<i>Euphorbia esula</i> L. – Euphorbiaceae) invasion control by suppression of arbuscular mycorrhizal fungi. Teixeira, R.R.C., Awodele, S.O., Helgason, B.L., Bennett, J.A.
32	Mapping and modelling summer and winter range use of the migratory eastern Cape Churchill caribou: Bridging trail cameras and community-based approaches. Brook, R.K., Turner, R.R., Staub, C., Bartel, R., Lagimodiere, J.
34	Accurate early prediction of leafy spurge invasion using species distribution models (SDM) in Alberta. Zardecki, N., Vamosi, J
36	A comparative analysis of two non-invasive methods of measuring Polar bear (<i>Ursus maritimus</i>) body condition. Waterman, J., Ajibola, M., Ashegh, A., Attazada, A., Caracas le-Fort, L., Chuang, S., Dalope, J., Frost, N., Fuith, A., Gies, G., Halili, C., Rodelas, R., Smith, L., Thai, S., Zaluski, J., Forslund, J., Speiser, G., Temesvari, S.
38	Impact of snow cover duration on survival and mass change in bighorn sheep (<i>Ovis canadensis</i>). Crémel, K., Festa-Bianchet, M., Langlois, A., Pelletier, F.
40	When and where are habitats most productive for juvenile coho salmon (<i>Oncorhynchus kisutch</i>)? Parsons, S., Naman, S., Little, C.
42	Exploring an undergraduate teaching & mentorship section for CSEE. Austen, E.
44	The search for mate selection in a hummingbird-pollinated plant. Kotlyar, F., Torres-Vanegas, F., Kormann, U., Jones, A., Betts, M., Leimberger, K., Atencio, M., Wagner, H.
46	No evidence of frequency-dependent selection by pollinators on the anther colour of <i>Erythronium americanum</i> . Ripley, J., Brooks, J., Deadman-Wylie, G.A., Traylor, A.L., Austen, E.
48	How does trichome quantity (a trait rewarding to oil bees) affect the pollination ecology of <i>Lysimachia terrestris</i> ? Brooks, J.R., Ripley, J.A., Traylor, A.L., Austen, E.A.

Detailed Schedule: June 13

Horaire détaillé : 13 juin

- 50 Adjustments to sex allocation track mate availability and enhance siring success in hermaphroditic *Sagittaria latifolia*. Kwok, A., Dorken, M.E.
- 52 Reproductive consequences of interspecific pollen transfer in a subalpine plant community. Grey, J.
- 54 Diversity of genetic sex determination mechanisms in brook stickleback (*Culaea inconstans*). Pigott, G., Mee, J. A., Smith, S.
- 56 A look into the past: an analysis of the origins of EPSPS gene copy number variation in *Amaranthus palmeri*. Ngo, C.X.
- 58 Machine learning and genomics: using neural networks for population assignment of a threatened seabird species. Lounder, H., Birchard, K., Boccia, C., Ronconi, R., Friesen, V.
- 60 Canadian Freshwater Fish Detection with Genetics. Alrefaee, L., Yates, M, Heath. D.
- 62 Using claws to examine total mercury burden (THg) and diet in ringed and bearded seals in the Canadian Arctic. Laing, R.J., Ferguson, S.H., Yurkowski, D.J., and Desforges, J.-P.W.
- 64 Come make your labels! Downloadable resources for botanical collectors and collections. Sokoloff, P.C., Doubt, J.
- 66 Longterm research on wolves in Riding Mountain National Park demonstrates recent switch to more dangerous prey. Prokopenko, C.M., Zabihi-Seissan S., Dupont, D.L.J., Kingdon, K.A., Turner, J.W., Vander Wal, E.
- 68 Atlantic salmon in the Miramichi River, New Brunswick — biological changes over seven decades. Mercer, K.L., Weir, L.K., Breau, C.
- 70 Genome-wide investigation of the central-marginal hypothesis in the American pika (*Ochotona princeps*). Boven, O., Schmidt, D., Russello, M.
- 72 The art of plant cytogenetics. Windham, E.
- 74 Visually display morphological data online with MorphoBank. Dickinson, T.A.
- 76 Utilization of fluorescent microscopic imaging to investigate the competitive fitness in fungi. Sumanarathne, A.S., Gerstein, A.
- 78 Distribution patterns of rough fescue (*Festuca hallii*) in response to climate change and land use scenarios. Home, J., Lamb, E.G.
- 80 Quantifying the heritability of migration behaviours in a wide ranging ungulate. Bonar, M., Wootton, E., Anderson Jr., C. R., Wittemyer, G., Northrup, J. M., Shafer, A.B.A.
- 82 Tracking the diel partitioning of flight and refueling in a long-distance migratory songbird. Olson-Brissaud, C., Ray, J.D., Fraser, K.C.
- 84 Plenty of fish in the sea or a bird-eat-bird world? Rieger, G.M., Davoren, G.K.
- 86 A food web perspective on behavioural variation in a mobile top predator. Kotsopoulos, C., McCann, K.S., Gutgesell, M., Tunney, T.D.
- 88 Genomic analysis of *Dendroctonus* beetle species to identify genetic signatures of range expansion in North America. Grela, C., Cullingham, C.
- 90 Impacts of an annelid cleaning-symbiont on crayfish fitness and reproduction. Grams, C.S., Proctor, H.C.
- 92 A story worth 1000 pictures: Can iNaturalist help us explore the drivers of moss phenology? Jean, M., Thériault, A., Hansen, W.
- 94 Were rare plants on Vancouver Island dispersed there by humans? Batten, R.W., Allen, G.A.
- 19:30 - 20:30** **York 2-4.** CBA Weresub Lecture. Animal-associated Ascomycota: the genus *Capronia*, Onygenales from snake hibernacula, and the xerophilic taxa inhabiting ant mounds. Dr. Wendy Untereiner
- 20:00 - 22:30** **The Good Will Social Club.** CSEE-CBA Student / Post-Doc mixer

Detailed Schedule: June 14

Horaire détaillé : 14 juin

Wednesday, June 14

Room. Session Title

MR1. Symposium 8. Invited Talks. Integrating Equity into Urban Ecology and Evolution: Diverse and Interdisciplinary Perspectives for the Benefit of All

- 8:30 Diverse views of urban natures. Nesbitt, L.
- 8:45 Assessing justice in the spatial pattern of urban forests and heat in mid- and large-sized cities. Masoudi, M., Drescher, M., Mahdianpari, M.
- 9:00 Narratives blending science, environmentalism, education, and racial justice. Ellis Soto, D.
- 9:15 Environmental and human social drivers of urban evolution. Schmidt, C.
- 9:30 Leveraging cellular mobility data for sustainable park management to support people and nature. Xie, G.
- 9:45 Investigating the effects of human socioeconomics on biodiversity in cities. Kinnunen, R.

MR2. Symposium 9. Invited Talks. The Science of Decision Support Systems in Conservation Ecology

- 8:30 Maximizing co-benefits of conservation: a wetland ecosystem services tool for Prairie Canada. Bortolotti, L., Kowal, P., Armstrong, L., Badiou, P., van Ardenne, L., Page, B., Paterson, J., Devries, J.
- 8:45 A cost tool for waterfowl productivity and conservation delivery in Prairie Canada. Devries, J., Howerter, D., Thoroughgood, P., Edwards, C.
- 9:00 Forecasting cumulative effects of disturbance on wildlife to inform decisions: adventures in reusability, reliability and flexibility. Hughes, J., Weeber, R., Venier, L., Turner, J., Stewart, F., McIntire, E., Johnson, C., Dyson, M., Avery-Gomm, S., Endicott, S.
- 9:15 Where to Work: interactive systematic conservation planning application. Schuster, R., Hanson, J., Wismer, D., Vincent, J., Schoenrock, A., Bennett, J.
- 9:30 What to Do: a tool for systematic conservation stewardship decisions. Bennett, J., Schuster, R., Hanson, J., Vincent, J., Bennett, J.
- 9:45 Identifying Key Biodiversity Areas to inform effective conservation in Canada. Soroye, P., Raudsepp-Hearne, C.

MR3. Symposium 10. Invited Talks. Microbial Ecology and Evolution

- 8:30 Experimental evolution reveals the selective drivers and genetic mechanisms associated with the breakdown of a keystone host-microbe nutritional symbiosis. Batstone, R., Lau, J., Heath, K.
- 9:00 Captivity, but not dietary treatments, affect songbird uropygial gland microbiota. Grieves, L., Bottini, C., Gloor, G., MacDougall-Shackleton, E.
- 9:15 Pangenome insights into diversification and disease specificity in plant pathogenic Xanthomonads. Agarwal, V., Stubits, R., Nasrullah, Z., Dillon, M.
- 9:30 Interkingdom horizontal gene transfer leads to fast evolution of polyubiquitin genes in mosquito gut-dwelling fungi. Wang, Y., Xia, Y., Yang, H.

MR4. Symposium 1. Contributed Talks. Ecological Dimensions of Hybridization

- 8:30 The hy (-brid) road to success in Rosaceae tribe Maleae: siring, damming, and morphology in hawthorns. Dickinson, T.
- 8:45 Hybridization and evolution of invasive and agricultural weeds. Hernandez, F., Vercellino R.B., Presotto, A., Rieseberg, L.H.
- 9:00 Character displacement of egg colors during tinamou speciation. Li, Q., Chen, D., Wang, S.
- 9:15 Detecting selection on hybrids using experimental crosses. Thompson, K.A, Schumer, M.
- 9:30 Does genetic ancestry play a role in the eastern spread risk of mountain pine beetle? Duffy, J., Jayne, A., Cullingham, C.I.

Detailed Schedule: June 14

Horaire détaillé : 14 juin

- 9:45 The Eye of Sauron: a re-evaluation of the new world *Junonia* butterfly ring species. Marcus, J.M., Lalonde, M.M.L.
- MR7&8. Symposium 4. Invited Talks. The Evolution of Gene Expression and Regulation**
- 8:30 The evolution of plasticity in *Drosophila*. Signor, S.
- 8:45 Tipping point: transcriptional regulation of a plastic phenotype in seedlings. Song, L.
- 9:00 Epitranscriptomic regulation of behaviour: Individual differences and gene-environment interplay. Anreiter, I.
- 9:15 Genes, brain and behaviour of small carpenter bees (*Ceratina*). Rehan, S.
- 9:30 Ancestral recombination graphs reveal shared patterns of evolution in Arctic cetaceans. Thorstensen, M., de Greef, E., Garroway, C.J.
- 9:45 Closing remarks and further discussion. Civetta, A., Good, S.
- 10:00 Contributed Talks. Genomic exploration of *Lythrum salicaria* to study rapid adaptation and invasion genetics. Fuentes Vergara, M. Colautti, R.
- MR9&10. Symposium 6. Contributed Talks. The State of Plant Conservation in Canada**
- 8:30 Pollination and reproductive success toward the range edge of an at-risk plant. Blondeau, M., Hargreaves, A.
- 8:45 Modeling management strategies for the recovery of American chestnut. Stoltz, S.S., Griswold, C.K., Husband, B.C.
- 9:00 Mapping nationally- and globally-threatened species in Canada: conservation gaps and opportunities. Hardouin, M., Hargreaves, A.L.
- 9:15 Evidence of hope: the attributes of recovery for endangered species in Canada. Kraus, D., Murphy, S.D.
- 9:30 Lessons in change: 30 years of listening, learning, and managing northern tall-grass prairie. Olynyk, M., Gietz, S., Grantham, M., Neufeld, R., Sveinson Pelc, J., Teetaert, T., Hamel, C.,
- 9:45 A slow burn: incorporating prescribed fire as a conservation management tool. Minocher, D
- MR11&12. Plants I: Evolution, Structure, and Development**
- 8:30 Does urbanization affect the flower shape of the jewelweed. Joly, S., Burkiewicz, J., Faure, J., Carvalho, J.
- 8:45 Characterization and selection on compound subindividual floral variation in *Vicia americana* (Fabaceae). Arteaga, G., and Kulbaba, M. W.
- 9:00 Apomixis on trial in *Amaranthus palmeri*: assessing the potential for asexual reproduction. Brackenridge, H., Konstantinov, N., Han, L. H., Yakimowski, S. B.
- 9:15 A hair out of place: Understanding the maintenance of a trichome polymorphism in *Camissoniopsis cheiranthifolia*. Williamson, K.B., Eckert, C.G.
- 9:30 Adaptation to climatic variation in the native and introduced ranges of a cosmopolitan plant. Albano, L.J., Innes, S.G., King, N., Patterson, C., Puentes, A., Vasseur, F., Violle, C., Kooyers, N.J., Johnson, M.T.J.
- 9:45 Variation in root morphology and consequence for plant fitness in contrasting drought and mycorrhizal conditions. Shao, J., Maherali, H.
- York 2-4. CSEE Excellence in Doctoral Research**
- 8:30 Seagrass as a model system: understanding multiple stressors. Jillian Dunic
- 9:00 On the origins of coexisting species (and the curious paradox of the duckweed). Takuji Usui
- 9:30 What does the squirrel say? Understanding the role of individual physiology in social information. Alexander Hare
- 10:00 - 10:30 **Exhibitor Hall.** Coffee break

Detailed Schedule: June 14

Horaire détaillé : 14 juin

MR1. Conservation Biology and Species at Risk III

- 10:45** Optimally managing threats to biodiversity across large scales. Hanson, J.O., Delsen, D.M., Binley, A., Allan, J., Jung, M., Visconti, P., Hermoso, V., Schuster, R., Chapman, M., Bennett, J.R.
- 11:00** Spread of networked populations is determined by the interplay between dispersal behavior and habitat configuration. Baines, C. B., Rayfield, B., Gilarranz, J.L., Gonzalez, A.
- 11:15** Genetic assessment and monitoring of at-risk northern leopard frog (*Lithobates pipiens*) populations. Khalilzadeh, P., Randall, L., Lesbarreres, D.

MR2. Invasive Species II

- 10:30** Invasive vampires or charming natives? Rethinking the history of sea lamprey in freshwater lakes. Suurväli, J., Karachaliou, E., Ogden, J.L., Mahoney, M.L., Grayson, P., Jeffries, K.M., Docker, M.F., Garroway, C.J.
- 10:45** Effects of jumping worms on European worms and soil properties. Bennett, S., Cameron, E., Phillips, H.
- 11:00** Genetic diversity and fitness variation among populations of a clonal invasive plant. Dean-Moore, C.E., Eckert, C.G.
- 11:15** Conservation assessments of native and invasive earthworms in Canada. Cameron, E. K., Phillips, H. R. P.
- 11:30** Genome traits behind invasiveness, rarity, and extinction risk in the Canadian flora. Albor, C., Vamosi, J.

MR3. Symposium 10. Invited Talks. Microbial Ecology and Evolution. Continued

- 10:30** *Candida albicans* clinical isolates from Manitoba reveal extensive phylogenetic diversity with limited regional clustering in a global context. Adamu Bukari, A.-R., Gerstein, A.
- 10:45** Using a novel sample type to measure correlates of temporal variation in wild lemur (*Eulemur rubriventer*) microbiomes. Grieniesen, L., Hays, A., Cook, E., Blekhman, R., Tecot, S.
- 11:00** Global analyses of the human pathogenic *Cryptococcus* (HPC). Hitchcock, M., Xu, J.
- 11:15** Resolving the systematics of *Hericium* spp. in North America with multigene phylogenetic analysis and its implications for mushroom cultivation programs. Koga, J., Thorn, R.G., Bernards, M.
- 11:30** Inclusive inheritance of gut microbiome variation in the wild. Stothart, M., McLoughlin, P., Wilson, A., Poissant, J.

MR4. Reproductive Strategies II

- 10:30** Mating tactic influences body condition degradation in Rocky Mountain bighorn rams. Li, R., Henry, T.C., Neuhaus, P., and Ruckstuhl, K.E.
- 10:45** Factors affecting annual reproductive investment and success in female Columbian ground squirrels. Emmanuel, P., Neuhaus, P., Ruckstuhl, K., and Martinig, A.R.
- 11:00** How does sexual selection depend on the sex ratio? An experimental test in fruit flies. Perry, J. C.

MR7&8. Symposium 4. Contributed Talks. The Evolution of Gene Expression and Regulation. Continued

- 10:30** Early lineage reproductive transcriptome differentiation between two subspecies of *Drosophila willistoni*. Civetta, A., Go, A.C., and Ranz, J.M.
- 10:45** The function of germline restricted chromosomes in sea lamprey gonad development. Yasmin, T., Grayson, P.D., Docker, M.F.Good, S.V.
- 11:00** Epigenetic prediction of age in three harvested large mammals. Czajka, N., Northrup, J.M., Shafer, A.A.
- 11:15** Post mating isolating barriers between *Drosophila* species and the role of seminal fluid genes expression. Flacchi, C. Civetta, A.
- 11:30** Imbalanced balance: genomic asymmetry of the *Brassica napus* seed. Ziegler, D.J., Khan, D., Pulgar-Vidal, N., Parkin, I.A.P., Robinson, S.J.Belmonte, M.F.

Detailed Schedule: June 14

Horaire détaillé : 14 juin

MR9&10. Wildlife Management

- 10:30** Long-term ecosystem change from pesticide use in forestry; Birds, Bees, and Trees. Edge C., Brown, M., Hertz, S., and Parachnowitsch, A.
- 10:45** The importance of spring staging areas of Cackling geese (*Branta hutchinsii*) in a rapidly changing arctic. Bani Assadi, S., Baldwin, F., Neufeld, N., Fraser K.C.
- 11:00** Linear feature effects on settling and productivity of ducks in the western boreal forest. Dyson, M., Singer, H.S., Armstrong, L.M., Witherly, S., Harriman, V., Slattery, S.M.
- 11:15** Do linear features facilitate wolves hunting moose? Kingdon, K., Prokopenko, C., Dupont, D., Zabihi-Seissan S., Turner J., Vander Wal E.

York 2-4. CSEE Excellence in Doctoral Research. Continued

- 10:30** Oh look, a squirrel! Studying variation in resource acquisition by red squirrels, and other doctoral distractions. Andrea Wishart
- 11:00** Uncertainty of risk and information limitations shape neophobic responses in prey. Laurence Feyten

11:30 - 13:00 Lunch

MR1. Forest Ecology

- 13:00** Dynamics of understory vegetation in boreal mixedwood forests in eastern Quebec, Canada. Carboni, M. Fenton, N., Bergeron, Y.
- 13:15** How does understory vegetation diversity and composition differ between mixed plantations and monocultures? Randriamananjara, M.A., Fenton, N., Cavard, X., Jean, M., DesRochers, A.
- 13:30** The influence of structural and species diversity on resistance to drought in US temperate forests. Crockett, E.T.H.
- 13:45** When subarctic black spruce forests fail: drivers of shrub tundra community dominance after closely timed fires. Wasyliw, C., and Brown, C.D.
- 14:00** Stability of *Kalmia* heath and spruce-*Kalmia* shrub-savannah alternate states in eastern Canada. Mallik, A.
- 14:15** Changes in extent and productivity of trees in a discontinuous permafrost Taiga Shield landscape. Sniderhan, A.E., Spence, C., Ogden, E., Kokelj S.V., Perron, N., Sonnentag, O., Baltzer, J.L.

MR2. Plant Diversity

- 13:00** Historical biogeography of Caribbean plants fails to support GAARlandia. Roncal, J., Nieto-Blazquez, E., Cardona, A., Bacon, C.
- 13:15** Creating a new Manitoba Flora. Bizecki Robson, D.
- 13:30** Floral scent diversity and heritability in *Oenothera harringtonii*. Carter, H.S., Raguso, R.A., Skogen, K.A., Wickett, N.J.
- 13:45** Population structure and genetic diversity in a disjunct *Opuntia fragilis* population. Beaudin, M., Root, G., Cullingham, C.I.
- 14:00** Resolving the phylogeny and taxonomy of the sedge tribe Fuireneae s.l. (Cyperaceae). Bradshaw, C. D. V., Léveillé-Bourret, É., Larridon, I., Naczi, R. F. C., Starr, J. R.
- 14:15** Revisiting the taxonomy of *Carex* subsect. Lupulinae (Cyperaceae). Lacroix-Carignan, É., Starr, J. R., Naczi, R. F., Léveillé-Bourret, É.

York 2-4. CSEE Early Career Researcher Plenaries

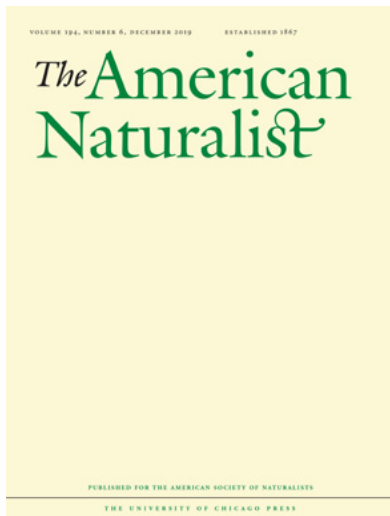
- 13:00** Is it social or spatial? Challenging adaptationst thinking at the spatial-social interface. Quinn Webber
- 13:40** Towards genomic forecasting of species responses to environmental change. Rebekah Oomen

Detailed Schedule: June 14

Horaire détaillé : 14 juin

- 14:20 - 14:45** Exhibitor Hall. Coffee Break
- 14:45** MR1. CBA AGM and Awards
- 14:45** York 2-4. CSEE Presidents Award Plenary. Adaptation and maladaptation in plant genomes. Stephen Wright
- 15:45** York 2-4. CSEE Student Paper Awards
- 16:00** York 2-4. CSEE AGM
- 17:30** Le Patio 340. Closing Social (dinner at 18:30)

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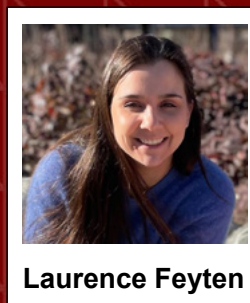
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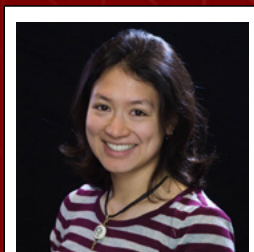
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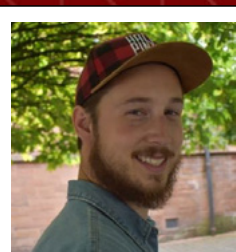
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