‘Eco-Evo Eats’ Scientist List & Schedule

Please note that sign-up for Eco-Evo Eats will take place at registration on a first-come, first-serve basis. There will be 5 slots available per scientist

Schedule at-a-glance:

Thursday July 19	Friday July 20	Saturday July 21
Aaron Shafer	Njal Rollinson	Dan Mennill
Jane Waterman	Murray Humphries	David Fisher
Jon Mee	Amy Newman	Erika Crispo
Reuven Dukas	Andrew McAdam	Julia Baum
Evan Preisser	Andrew MacDougall	Mark Vellend
Jalene LaMontagne	John Fryxell	Peter Morrison
Shannon McCauley	Brian Starzomski	Wes Larson
Ze’ev Gedalof	Marcel Dorken	Steve Heard
Alex Filazzola	Carissa Brown	Eric Vander Wal
Ryan Norris	Joe Bennett	Karl Cottenie
Andrew Hendry	Julie Morand-Ferron	

THURSDAY JULY 19

Dr. Aaron Shafer

Assistant Professor, Trent University
http://www.aaronshafer.ca/

My group studies population genomics and uses molecular tools to understand the demographic histories and drivers of biological processes like migration and adaptation in nature. I am also interested in applying genomic methods to conservation and legal issues and I am part of the IUCN Caprinae SSC and an Associate Editor at Conservation Genetics.

Dr. Jane M. Waterman

Professor, University of Manitoba
https://www.watermanlab.com/

Jane Waterman is a professor in Biological Sciences at the University of Manitoba specializing in behavioural ecology. Her research has focused on the selective factors that influence the evolution of sociality and mating systems and the majority of her research focuses on sociality in ground dwelling squirrels. By comparing the intra- and interspecific variation in behavioural development, dispersal, reproduction, life history and social structure, the significance of various selective factors on the evolution of sociality can be ascertained. In 2018, it will be 30 years since she started her research on the behaviour of the Cape ground squirrel, a species that inhabits the arid regions of southern Africa. Her lab has studied their behaviour, physiology and population dynamics, integrating both field and laboratory techniques. They have focused their research on the cooperative behaviours, reproduction, mating, and the interspecific interactions (particularly as ecosystem engineers) of this species. They have also studied the Barbary ground squirrel, another social species that inhabits northern Africa. Both species of African squirrels are highly social, with the formation of all-male groups where aggression is rare. In North America she has investigated the reproductive investment of Richardson's ground squirrels, evaluating sex differences in parasite infections. She has also studied male grouping in the polar bear, a marine species in which amicable male groups form. Such all-male groups are quite rare among mammals and thus provide an excellent opportunity to gain important insights into selective forces leading to sociality.

Dr. Jon Mee

Assistant Professor, Mount Royal University
http://www.mtroyal.ca/ProgramsCourses/FacultiesSchoolsCentres/ScienceTechnology/Departments/Biology/Faculty/mee.htm

I work at an undergraduate-only institution (No grad degrees offered, so no grad students). My job is teaching-focused. I usually teach 3 courses per term, but I have the spring and summer "off". I'm currently applying for my first NSERC grant to support my research on the genetic basis of adaptive phenotypes in hybrid fishes. If students are talking with me, they should

probably be interested in an alternative to the "typical" academic job (with grad students, a lab, etc.).

Dr. Reuven Dukas

Professor, McMaster University
http://psych.mcmaster.ca/dukas

My lab studies the ecology and evolution of animal behaviour and cognition. We examine the evolutionary biology of cognition, defined as the neuronal processes concerned with the acquisition, retention and use of information. We prefer to work with insects and have studied various species of solitary and social bees, flies, wasps and grasshoppers.

Dr. Evan Preisser

Professor, University of Rhode Island
https://web.uri.edu/preisserlab/

I'm a community ecologist interested in both herbivore-plant and predator-prey interactions, and recently co-chaired the 2018 Gordon Research Conference on Predator-Prey Interactions. I'm currently looking for a postdoc in herbivore-plant interactions (specifically, the Canadian hemlock - hemlock woolly adelgid system), and would be happy to discuss students' work, grad school and careers, etc.

Dr. Jalene LaMontagne

Associate Professor, DePaul University
Adjunct Scientist, Urban Wildlife Institute, Lincoln Park Zoo, Chicago, USA
http://lamontagnelab.weebly.com/

I am an Associate Professor at DePaul University in Chicago, where I've been since 2011. As a Canadian, I've learned a lot about moving to the US, understanding how research funding works with the National Science Foundation, and teaching at a private institution (DePaul is the 13th largest private university in the US). I am a population ecologist with interests in spatial and temporal patterns of populations, how individuals give rise to population-level patterns, and I study a variety of species. My work focuses in three main areas: 1) Mast seeding - What are the patterns of spatial synchrony and divers of reproductive patterns in conifers? I established a long-term study in 2012 at study sites in three regions of the northern midwestern USA to examine seed and cone production by ~1000 individually tagged white spruce trees. I am interested in understanding synchrony in reproduction across spatial scales, from individuals to the continent. I am also a collaborator on the Department of Energy Oak Ridge National Laboratory's SPRUCE (Spruce and Peatland Response Under Changing Environments) project, a 10-year experiment on the impacts of warming and CO2 on a forest system. 2) Urban Ecology - How do species respond to variation in habitat quality & changes due to human land use, principally in urban environments? My lab looks at habitat selection, space use, and behaviour and learning in animals across urban and rural habitats in and around Chicago, the third largest city in the US. 3) Life-history - What are the implications of life-history variation on population dynamics? For this research I use a *Daphnia*-algal system and we do experiments to test how extrinsic and

intrinsic factors impact population-level dynamics, with a particular focus on how individual life histories and scale up to the population.

Dr. Shannon McCauley

Assistant Professor, University of Toronto Mississauga
http://www.shannonjmccauley.com/

I am a community ecologist who works in freshwater systems. My research addresses how processes at local scales including predator-prey interactions, and regional scales, particularly dispersal, affect community structure in these systems.

Dr. Ze'ev Gedalof

Associate Professor, University of Guelph
http://www.uoguelph.ca/cedar/

I am a community ecologist, with a focus on forests and climate. My research interests are broad, but most of the questions my research group examines are related to forest ecosystem dynamics at scales of years to centuries, and landscapes to biomes. I am particularly interested in how land management interacts with climate to shape forest processes such as wildfire, range shifts, competition, and invasions. I use a mixed-methods approach, mainly involving the analysis of tree rings (dendrochronology), but usually linked to longer paleoecological records (e.g. sediment cores), shorter manipulative experiments, geomatics, and modelling. While most of my work is focused on forest ecotones in western North America I have had the opportunity to do work on every continent except Antarctica (if only they had trees!). My career trajectory has been unusual, with formal training in departments of geography, forestry, and atmospheric sciences - as well as time spent in industry and as a consultant.

Dr. Alex Filazzola

Post-doctoral Researcher, University of Toronto Scarborough & University of Alberta
www.filazzola.info

I am community ecologist, data scientist, and conservation biologist. I recently completed my PhD at York University examining mechanisms of positive plant-interactions in arid ecosystems. My other research includes studying alpine ecosystems, using phyto-indicators to estimate deer browsing, developing restoration plans for retired agricultural land, and working with the Ontario Climate Consortium to assist municipalities in adapting to climate change. Currently, I am working with UTSC and the Toronto and Region Conservation Authority to quantify the effects of green infrastructure on urban ecology. In the winter, I will be switching labs to the University of Alberta to determine the effects of climate change on community interactions. Outside of my research, I am a strong supporter of open science, particularly R project, and try to make science more accessible. At CSEE this year I am running a workshop teaching reproducibility in science using Github.

Dr. Ryan Norris

Associate Professor, University of Guelph
www.norrislab.ca

I am an ecologist interested in the behaviour, population dynamics and conservation of animals living in seasonal environments. I currently lead a variety of research projects across Canada, including long-term monitoring of marked populations of Canada Jays and Savannah sparrows, as well as basic and applied work on monarch butterflies, blackpoll warblers, domestic cats, fruit flies, salamanders, and nightjars. I teach undergraduate courses in ecology and animal behaviour.

Dr. Andrew Hendry

Professor, McGill University
http://redpath-staff.mcgill.ca/hendry/index.html

Eco-evolutionary dynamics broadly considers ongoing interactions between ecology and evolution. Most work in our lab has thus far focused on one direction of causality in these dynamics – how ecological changes influence evolutionary dynamics (eco-to-evo). More recently, we have started to explore the reciprocal arrow of causality: how evolutionary changes influence ecological dynamics (evo-to-eco). We conduct work on both arrows of causality in multiple natural systems, most frequently in lake versus stream stickleback, high-predation versus low-predation guppies, and Darwin's finches.

FRIDAY JULY 20

Dr. Njal Rollinson

Assistant Professor, University of Toronto
http://www.njalrollinson.com/

I am an evolutionary ecologist interested in (1) using long-term data to address fundamental and applied questions, and (2) using meta-data to test theory. My research is based in Algonquin Park, where I help run the long-term studies on amphibians and reptiles. Most of my current work is centered around maternal effects and body size evolution, environmental sex determination, and the impact of current and historical land use on the persistence of reptiles near heir northern range limits. I was appointed to the Department of Ecology and Evolutionary Biology and the School of the Environment in 2016, after postdocing at the University of Toronto.

Dr. Murray Humphries

Associate Professor, McGill University
http://murray-humphries.lab.mcgill.ca/

Murray Humphries is an Associate Professor of Wildlife Biology in the Department of Natural Resource Sciences at McGill University in Montreal. Prof. Humphries holds the McGill Chair in Northern Research and is the academic director of McGill's Centre for Indigenous Peoples' Nutrition and Environment, an inter-disciplinary research centre dedicated to community-based research on food and the environment. He leads the McGill–Alberta NSERC CREATE graduate training program, Environmental Innovation, focused on impact assessment, monitoring and management in northern Canada. He was also a member of the expert panel that generated the Council of Canadian Academies 2014 report on Aboriginal Food Security in Northern Canada. His research focuses on wildlife biology, bioenergetics, and winter ecology, especially in northern Canada, as well as environmental contributions to the traditional food systems of Indigenous Peoples. This focus has led him to studies of participatory approaches in natural sciences research, the nature of community-university research partnerships, and documentation of the food knowledge of northern Indigenous Peoples.

Dr. Amy Newman

Assistant Professor, University of Guelph
https://comparativephys.ca/newmanlab/

My research and training lay at the intersection among ecology, physiology, and neuroendocrinology. I am broadly interested in stress biology and the wide-ranging effects of the early life environment; research in my lab is focused on investigating and understanding the effects of the environment on the development and function of the stress axis in natural populations. We investigate how early life stress exposure influences physiology, behaviour and, ultimately, fitness. We also are interested in how stressors in the adult environment shape behaviour, physiology, and the microbiome. We use a variety of approaches from large-scale manipulations in the wild to controlled laboratory experiments. I am excited by integrative questions that span levels of biological organization and encourage students in my lab to explore questions from evolutionary, ecological, physiological and molecular perspectives.

Dr. Andrew McAdam

Associate Professor, University of Guelph
http://www.mcadamlab.ca/

I am interested in how evolution works in nature. Natural selection and evolution occur within an ecological context, so a major goal of work in my lab is to examine the ecological circumstances associated with short-term evolutionary changes, including maternal effects and other indirect effects of the social environment on adaptation.

Dr. Andrew MacDougall

Associate Professor**,** University of Guelph
https://www.uoguelph.ca/ib/macdougall

Our lab tests how global environmental change transforms fundamental ecological processes, in terrestrial and aquatic systems from local to global scales.

Dr. John Fryxell

Professor and Executive Director, Biodiversity Institute of Ontario, University of Guelph
https://www.uoguelph.ca/ib/fryxell

My research focuses on interactions between behavior and consumer-resource dynamics. A mix of theoretical and empirical approaches is used to consider the dynamics of specific systems. Theoretical questions of interest include herbivore and carnivore movement in relation to resource availability and predation risk, optimal diet, patch selection, and dispersal patterns in heterogeneous environments, the effect of social interference and territoriality on consumer-resource interactions, and impacts of harvesting by humans on fish and mammal populations.

Empirical work has been concentrated on 3 different terrestrial ecosystems over the past decade: large herbivores and carnivores in Serengeti National Park (Tanzania), woodland caribou, wolves, and moose in boreal forests of northern Ontario (Canada), and mustelid carnivores and other small mammals in boreal forests of northern Ontario. In each case, my graduate students and I conduct detailed field and experimental studies of behavioral ecology of both predators and prey. Theoretical models are then used to assess the implications of behavioral strategies on population and community dynamics and model predictions are then tested against long-term observational data from terrestrial ecosystems.

Dr. Brian Starzomski

Associate Professor, University of Victoria
http://starzomski.weebly.com/

Brian Starzomski is a community ecologist and conservation biologist in the School of Environmental Studies at the University of Victoria. Brian considers himself to be motivated by questions rather than an individual system or study site, and so currently has research projects at the provincial level (gathering and analyzing data to assess the impacts of cumulative environmental effects on biodiversity in British Columbia), regional level (the "100 Islands Project" with collaborators from SFU, UBC, and UVic, using an observational approach on 100 islands in BC's Great Bear Rainforest to examine the impacts of marine-derived nutrient subsidies on island biodiversity), to landscape-level impacts of disturbance and fragmentation on community patterns in micro/mesocosms (e.g., experiments with hyper-diverse microarthropod communities living in moss). Teaching and mentoring is important in Brian's career, and he sought out his position in UVic's School of Environmental Studies to enable him to devote as much time to teaching as to research.

Dr. Marcel Dorken

Associate Professor, Trent University
http://www.people.trentu.ca/~marceldorken/Home/home.html

Evolution and ecology of plant reproduction. Lab members work on: evolution of separate sexes; ecology and evolution of plant clonality, invasive species, pollination. Studies tend to include combinations of field work, molecular markers, statistical and ecological modeling using R.

Dr. Carissa Brown

Assistant Professor, Memorial University
http://carissabrown.wixsite.com/home

I am broadly interested in plant species and communities at the edge of their range, and focus on the direct and indirect effects of climate change on species' distributions. My research group in the Northern EDGE Lab works at 1) treeline in northern Yukon and Nunatsiavut (Labrador), where we explore the role of fire and biotic interactions in mitigating tree response to climate change using field experiments, latitudinal diversity gradients in the subarctic across taxa, and demographic niche shifts of northern conifers; 2) on Newfoundland, looking at biotic and abiotic constraints on tree population expansion in alpine and boreal-temperate systems, Holocene fire history reconstructions, and exotic species occurrences in the boreal forest.

Dr. Joe Bennett

Assistant Professor, Carleton University
https://josephrbennett.wordpress.com/

My research focuses on conservation prioritization, invasion ecology, optimal monitoring, biogeography and spatial statistics. I have a particular interest in practical questions regarding management to protect threatened species and the value of monitoring information. I have worked on conservation projects with government agencies and non-governmental organizations in Canada and internationally. I also work on theoretical questions regarding biodiversity measures and the determinants of biological community assembly in terrestrial and aquatic ecosystems.

Dr. Julie Morand-Ferron

Associate Professor, and University Research Chair in Cognitive Ecology, University of Ottawa.
http://mysite.science.uottawa.ca/jmorandf/

Cognition, a suite of neural processes including decision-making, learning, and memory, determines how individuals interact with their environment, and therefore impacts on a range of ecological and evolutionary processes. While psychologists have studied cognitive processes for more than a hundred years now, we still know very little on the evolution of cognitive traits, partly because biologists have only recently begun to study individual differences in cognitive performance in non-human animals. The major goal of my research is thus to understand how cognitive processes are shaped by natural selection. I'm interested in the relationships between the environment and cognition, as well as between cognition and fitness. Recently my students and I have been studying learning and social behaviour, and how these relate to urbanization, using wild flocks of black-capped chickadees. We are also developing a new research system on the evolution of cognition in crickets, in an attempt to address the imbalance in our knowledge on vertebrate vs invertebrate behaviour and cognition. We already know that our crickets display the ability to remember important locations in a maze, and that individuals vary in this ability; we're looking forward examining why individuals differ from one another and how that impacts their life-history.

SATURDAY JULY 21

Dr. Dan Mennill

Professor and Associate Dean of Science, University of Windsor
http://web2.uwindsor.ca/courses/biology/dmennill/index.html

I study the vocal behaviour of temperate and tropical animals including chickadees, wrens, sparrows, and toads. Together with my students, I have published more than 140 research papers on topics that include male singing behaviour, female mating behaviour, and the behavioural differences between temperate and tropical birds. I have pioneered many new technologies for ecological research, including microphone arrays for spatial monitoring of wild animals, new technologies for sound playback to wild animals, and innovative techniques in radiotelemetry. I tweet about my lab @dmennill.

Dr. David Fisher

Post-doctoral Researcher, University of Guelph
https://dfoffreedom.wordpress.com/

I study animal behaviour, with a particular interest in social interactions. So when and why do animals interact, what consequences does if have for them, and how might social interactions influence the evolution of populations. To investigate these questions, I use social network analysis and approaches from quantitative genetics, such as indirect genetic effects. I am also interested in among-individual variation in behaviour, in quality-linked traits and in fitness, and what processes could maintain this variation in the face of directional selection. I've worked on fruit flies, crickets, red squirrels, as well as reviewing statistical methods and writing more conceptual pieces.

Dr. Erika Crispo

Associate Professor, Pace University
https://www.pace.edu/dyson/sections/meet-the-faculty/faculty-profile/ecrispo

I work at an institution that is focused on undergraduate education. I teach 6 courses per year, and maintain a research program that produces publishable research conducted by undergraduate students. In theory, my job is expected to consist of 40% teaching, 40% research, and 20% service – but in reality, the teaching plays a much larger role because even my research is geared towards educating undergraduate students. There are many tenure track jobs in undergraduate education in the USA, and it appears that they are becoming more common in Canada as well. It's important to get appropriate experience if you're considering perusing this career route.

Dr. Mark Vellend

Professor, Université de Sherbrooke
http://mvellend.recherche.usherbrooke.ca/index.html

My general interests are in ecology, evolution and conservation - especially of plants. I am particularly interested in how plant individuals, populations, and communities respond to environmental changes of various kinds, including climate warming and human-mediated disturbance. In addition to my empirical research program described below, I maintain strong interests in overarching theories in ecology and evolution (described in my book, "The theory of ecological communities") and in facilitating efforts to synthesize knowledge of ecological dynamics and biodiversity change across a variety of ecosystem types. Empirical work in my lab focuses on plants along elevational gradients in southern Québec.

Dr. Peter Morrison

I am currently retired, but over the last two years have been taking refresher graduate courses in ecology and economics at Carleton University, the University of Ottawa, and through the Quebec Centre for Biodiversity Science. I have also been doing part-time consulting work. My research interests are in the application of the concepts of ecosystem goods and services to the challenges of managing biodiversity in Canada and in other countries. I am currently working on projects related to conservation of rare plants on private land, and valuing changes to risk levels for species in Canada.

Students looking for 'non-traditional' career paths outside academia might consider talking with Peter.

Dr. Wes Larson

Assistant Professor, University of Wisconsin-Stevens Point
https://larsonlab.wordpress.com/

My primary research interest is the application of molecular techniques to inform conservation of natural resources. I am interested in traditional conservation genetics questions, such as designing hatchery programs to preserve diversity, as well as more cutting edge questions that focus around understanding and preserving adaptive diversity. I believe that interdisciplinary research is vitally important and work closely with resource managers to design and conduct research that combines genetics and ecology to address applied management questions.

Dr. Steve Heard

Professor, University of New Brunswick
http://www2.unb.ca/~sheard/index.html

I am an evolutionary ecologist working mostly with interactions between insects and plants. For years I have studied host-associated genetic differentiation among insect herbivores of goldenrod; more recently, most of my students have worked with forest pest insects in collaboration with research scientists at the Canadian Forest Service. Over my career, my interests have wandered a lot, from the topology of phylogenetic trees to stream ecology to conservation biology. I'm also the author of "The Scientist's Guide to Writing" (Princeton, 2016) and I write the blog "Scientist Sees Squirrel".

Dr. Eric Vander Wal

Assistant Professor, Memorial University
https://weel.gitlab.io/

Our team's research focuses on the ecology and evolution of social and spatial behaviors. Typically, we ask questions with charismatic mega-vertebrates that are of conservation and management concern, bridging the basic and applied. Some keywords describing our research might include: evolutionary ecology, habitat selection, individual variation, population ecology, predator-prey dynamics, mammals, and sociality.

Dr. Karl Cottenie

Associate Professor, University of Guelph
http://www.cottenielab.org/

During my first 15 years as a scientist, I focused on demonstrating the influence of dispersal on spatial patterns with a metacommunity approach in a range of organisms (zooplankton, bacteria, phytoplankton, fish in wetlands with different levels of connectivity. I complemented these studies with comparisons of metacommunity patterns in communities with taxa that have different dispersal constraints based on a priori identified traits, e.g., fish versus smaller organisms, communities in semi-terrestrial habitats, common versus rare species, plant species with different susceptibility to seed predation, mussel species with hosts that have different dispersal ranges, and generalist versus specialist species.

In addition to the influence of dispersal on spatial patterns, several of my publications started to incorporate the influence of dispersal on temporal patterns. PhD candidate, Simon Denomme-Brown, is currently working with a small mammal data set with over 60 years of live-trapping data. He has quantified dispersal rates in this system for the most abundant species, and the next steps are quantifying these rates for all species in the system, and looking and how these dispersal rates synchronize small mammal metacommunity fluctuations. Carolyn Trombley is studying the metacommunity structure of fish in the Virgin River (USA) and the impact of the invasive red shiner on the abundance, distribution, and temporal metacommunity dynamics of the critically endangered woundfin and other native species.

Several of my past and current graduate students have applied molecular techniques to the study of metacommunity dynamics. PhD student Jennifer Gleason is focused on studying macroinvertebrate metacommunity dynamics in heavily impacted riverine landscapes through eDNA, part of my focus on DNA barcoding. Human impact on the environment often results in both habitat degradation (a local process) and habitat fragmentation, which will influence dispersal characteristics of the landscape.

Dr. Julia Baum

Associate Professor, University of Victoria
https://baumlab.weebly.com/

Research in the Baum Lab is motivated by a fundamental desire to understand how human activities are changing marine ecosystems, and what the consequences of these changes are for nature and for people. Our current research centres around the following questions:

How are marine ecosystems structured and how do they function in the absence of human disturbance? How do diversity, structure, function and resilience vary across natural environmental gradients?

How are climate change, overexploitation, and pollution changing marine ecosystems? How do multiple stressors, such as these, interact and alter marine ecosystems?

We investigate these questions primarily on tropical coral reefs, on organisms ranging from apex predators to microscopic dinoflagellates. We do so using a suite of approaches including statistical models of large observational data sets - which allow us to empirically test predictions from related theory and small-scale experiments at the ecosystem and global scale - as well as field observations and experiments, molecular analyses and bioinformatics, stable isotope analyses, interviews, historical ecology, and meta-analyses. Our research spans across broad temporal and spatial scales, incorporates principles from population, community and ecosystem ecology, conservation science, and fisheries science and is highly collaborative. Our current foci are tropical coral reefs and temperate eelgrass beds.