During Fiscal Year (FY) 2020 (i.e., May 2020- April 2021 comprising the Spring 2020, Fall 2021 and Winter 2021 Terms) SERS faculty taught 43 undergraduate courses with a total enrollment of 2423 students. In Fall 2020 we took in 101 new first year students and between June and October convocations, we graduated 54 students. The total number of active undergraduate students in SERS during our most recent completed term, Winter 2021, was 381 including 98 Honours students and 283 Honours Co-op students.

In addition, 11 graduate courses were taught with a total enrollment of 79 students. In fall 2020 we admitted 7 new PhD students and 11 Masters students. 13 students graduated with 7 PhDs and 4 MES. We have offers out to 4 new PhD students and 16 new master’s students for Fall 2021. In total SERS has 64 PhD students and 42 MES students who are active currently.

Some Student highlights for FY 2020:
- 2020 NSERC awardee (1): Sara Wickham
- 2020 OGS Awardees (4): Patrick Lauriault, Anna Beresford, Kira Cooper, Ines Havet
- 2020 QELI-GSST (1): Dorian Pomezanski
- 2020 Vanier awardee: Lauren Smith
- 2020 Trudeau awardee: Anita Lazurko
- 2021 OGS International (1) Ella-Kari Muhl received one of only 5 scholarships.
- Lowine Hill received a prestigious International Development Research Centre (IDRC) Doctoral award
- Undergraduate student Maggie Chang was recognized as one of Starfish Canada’s Top 25 Environmentalist Under 25.
- ERS Scholarship Award received by Erika Miessner
- Garden Club Award received by Neil Canvin

Faculty Highlights:

Jennifer Clapp won a prestigious Killam Fellowship award which is one of the greatest achievements a Canadian scholar can achieve in any discipline. Jennifer was also appointed as University Professor in 2021 which will be recognized at the June 2021 Convocation.

Shefaza Esmail (SERS PhD student) joined SERS as a definite term lecturer in Spring 2020 to cover Christy Barbeau’s maternity leave (Weston arrived June 30th) and is continuing in the role until August 2022 to cover Jennifer’s teaching release from her Killam Fellowship.

Kelsey Leonard is joining SERS as her home unit effective May 1, 2021 as well as Dustin Garrick will be joining the school on July 1, 2021.

Christy Barbeau and James Nugent became permanent full-time lecturers during the 2020-21 academic year. Andrew Trant and Andrea Collins were approved for tenure and promotion and will be Associate Professors effective July 1, 2021.

2021 was a very busy year for SERS as we worked through the 7-year academic review.

Following are highlights from each faculty member in SERS.
Amidst the ups and downs of the year, success has been taking things a day at a time, appreciating colleagues and students with all of us doing the best we can, and trying to leave lots of room to adjust and adapt. A few highlights of the year:

Seeing some of the great undergraduate work being produced under challenging circumstances, including a wide range of great podcasts and short videos produced in ERS 400 — look here for a small sample: https://uwaterloo.ca/environment-resources-and-sustainability/blog/post/sers-stories-communicating-political-ecology

The ongoing success of multiple ECGG graduate students despite the headwinds: Ana Carolina Dias (PhD), Evan Andrews (PhD) and Melissa Mark (MES) most recently, all successfully defended and are already on their way to further great things (e.g., cool PDFs, etc.), while Ashoke Mohanraj completed an excellent UG honours thesis on governance of freshwater commons. Others in the ECGG have managed to start field work (under COVID protocols), defend comprehensives with flying colours and finalize proposals, and are poised to do great things (as reflected in their internal and external scholarships and award applications).

The very productive first year of the SSHRC Partnership Grant, the “V2V Global Partnership for Small-Scale Fisheries”: https://www.v2vglobalpartnership.org/. Under the direction of Prateep Nayak, we have initiated a wide range of initiatives, rapidly developed an active global network, and are fast becoming a hub for research and capacity building on small-scale fisheries.

My work in Haida Gwaii (and B.C. generally) which has continued to evolve and expand and now includes: 1) an advisory role with the Ecosystem Based Management Working Group to co-develop an evaluation framework to assess priority fisheries in support of implementation of the Gwaii Haanas Gina ‘WaadluXan KilGuhlGaa Land-Sea-People Management Plan; 2) participating in the Kuu (Sea Otter) Ecosystems Modelling Project with Parks Canada, CHN and DFO; and 2) co-teaching a professional development course in February on “co-management” for the Haida Gwaii Institute (a special thanks to Dan McCarthy and his encouragement pre-COVID to visit Haida Gwaii and contribute!)

Managing along the way to collaborate with amazing grad students and colleagues on interesting papers and book chapters, as well as continuing to serve on the Independent Science Panel for the New Zealand Sustainable Seas Challenge.
The highlight of 2020 was the arrival of Weston, who has kept me very busy while on maternity leave.
It has been a very busy year! In addition to figuring out how to teach my courses online and video-record lectures, this is what I was up to in 2020-2021:

- I was pleased to be chosen for a Killam Research Fellowship (one of four awards given nationally) that began on January 1, 2021. The fellowship gives me release from teaching and administration so that I can complete a book I am working on about the power of corporations in the global food system.
- In my role as a member of the Steering Committee of the High Level Panel of Experts on Food Security and Nutrition I was the Lead author on the HLPE’s 15th report, *Food Security and Nutrition: Building a Global Narrative Towards 2030* and presented this work in a number of high level forums including at the 47th meeting of the UN Committee on World Food Security.
- I was lead author on the HLPE’s issues paper *Impacts of COVID-19 on food security and nutrition: developing effective policy responses to address the hunger and malnutrition pandemic*, which I presented in a number of expert forums including an expert meeting organized by the UN Department of Economic and Social Affairs on meeting hunger goals as set out in the Sustainable Development Goals.
- I was invited to join the International Panel of Experts on Sustainable Food Systems — a role I am really excited about because this group does excellent work.
- I was Invited to write an op-ed in the *New York Times* on Covid-19 and food systems.
- The 3rd edition of my book, *Food*, was published in May (and I love the new cover!)
- My work around various themes ranging from the rise of digital farming to the impact of COVID-19 on food security, to the drivers of the rising use of herbicides, to the impacts of financial ownership of agri-food firms, was published in scholarly articles in the following journals: *Global Environmental Politics, Journal of Peasant Studies, Global Environmental Change, One Earth,* and *Antitrust Bulletin*.
- I was interviewed for an ARTE documentary on the global food system that aired in Europe earlier this year.
- One of my PhD students, Tracey Wagner-Rizvi, successfully defended her PhD and is now a doctor! Yay!
Simon Courtenay

Congrats Dr. Sondra Eger! Defended Nov ‘20 and now a PDF at MUN

Welcome Nat Bergbusch! Began PhD Sept ‘20

Welcome Jess Kidd! Began PhD Jan ‘21 (c/s H. Swanson)

Congrats Denise Ding! Biol 499 Honours Thesis April ‘21 (c/s E. Ho)

Welcome Mark Saunders! Began MES Sept ‘20 (c/s Mike van den Heuvel)

Publications


Rob de Loe

The reporting period covered eight months of my sabbatical (May 1, 2020 to Dec 31, 2020), and four months as Associate Director, Undergraduate (Jan 1, 2021 to Apr 30, 2021).

- During my leave, I launched my new research direction, focusing on photography and environment. I completed a series of small projects as conversation starters with prospective partners, and one large interdisciplinary art-science project, *Nameless streams*, which focuses on temporary streams and their role in, and importance for, local hydrology. The project is published on my web site and showcased at the Global Water Futures Virtual Water Gallery.
  - Rob de Loë Photography web site: [https://www.robdeloephotography.com/Works/Nameless-Streams](https://www.robdeloephotography.com/Works/Nameless-Streams)
- Secured external funding through a small SSHRC HSS grant to support early collaboration with partners in watershed management organizations.
- Spoke at various virtual conferences and workshops, including the international Rosenberg Reunion meeting in October 2020.
- Co-authored various journal articles and a book chapter with students and colleagues.
- Co-authored a report for Environment and Climate Change Canada on *Opportunities Through Renewal of Canada’s Federal Water Policy*, in support of ongoing efforts to create the Canada Water Agency.
- My new role as Associate Director, Undergraduate has been a major focus since January 1, 2021 in large part due to the ongoing Academic Review, and my role in developing new learning outcomes and related indicators and measures.
Shefaza Esmail

Teaching
With online teaching taking over Winter 2020 semester, I transitioned the Spring 2020 field course (ERS 340) to be delivered fully online through synchronous recorded lectures and individual fieldwork activities. This was possible through lots of support from the Ecology Lab (Anne and Bev).

The success of ERS 340 was transferred to ERS 335, a Fall 2020 course on ecological restoration that had a one-week field component. The synchronous classes were an asset to keeping the classroom feel as well as building student community.

Designed and delivered a novel ERS 275 course on Environment and Popular Culture using a 3-minute promotional video to draw in student interest and enrolment. I invited guest speakers of diverse fields of expertise - from Waterloo and beyond, which gave students the opportunity to engage with the course content through diverse perspectives.

Delivered two iterations of ERS 215 - Introduction to Environmental Assessment - adapting the changes to the federal legislation and challenging students to envision future changes to the federal assessment.

Projects
Received a Learning Innovation and Teaching Enhancement (LITE) Grant to pursue a research project titled: Lights, Camera, Reaction! The objective is to evaluate student engagement and emotional/cognitive awareness through use of films and viewer-response activities in online education.

Received Sustainability Action Fund Grant along with co-applicant Tim Alamenciak to develop an interactive campus map that highlights ecological areas on campus along with the current management strategies and course activities that occur in these areas.

Volunteer and Outreach
Delivered two workshops in partnership with BrainSTEM Alliance through the EnviroSTEM initiative - one on Biomimicry in October 2020 and one on Earth Day in April 2021.

Presented at the RAISE event titled Racial Justice, Climate Justice, and Energy Justice in January 2021.

Volunteered as a judge at the annual Ethics Bowl hosted by University of Toronto Mississauga in February 2021.
Partnered with Waterloo Public Library to deliver a workshop on Food Waste Reduction in honour of Earth Day in April 2021.
Brad Fedy

This was a very successful year for funding in the Fedy Lab of Wildlife and Molecular Ecology. Dr. Fedy received his largest single grant to date worth $1.5 million to conduct cutting-edge ecological research in northeastern Wyoming. Other projects resulted in approximately another $100,000 in research funding.

Field research in the Fedy Lab of Wildlife and Molecular Ecology was largely put on hold due to University COVID-related travel restrictions. However, we were able to maintain our progress on sage-grouse research in Wyoming and capture and radio-tagged an annual sample of birds and we collaborated with the Canadian Wildlife Service on Sandhill Crane capture and radio-tagging in the fall.

The Fedy Lab also saw the graduation of two exceptional PhD students, Dr. Matthew Dyson and Dr. Christopher Kirol and the defence and graduation of master’s student, Ryan Johnstone. Almost all of their associated graduate research is currently in review in peer-reviewed journals.

Dr. Fedy served as the technical advisor for the Wyoming Governor’s sage-grouse technical team where his research on genetic connectivity was used to guide the planning for conservation across thousands of acres of endangered sagebrush habitat.
Two items from the (first?) virtual year of Covid pandemonium:

out of the past
“Bullshit,” one of my Alternatives Big Ideas columns from 2011, is included in the 2020 edition of Eric Henderson’s, Becoming an Active Reader: A Complete Resource for Reading and Writing
• belated attention to the issue is better than no attention at all.
• it’s gratifying to have a recognized area of expertise.

into the future
SSHRCC and the Impact Assessment Agency of Canada host a (virtual) workshop on the 13 reports from their joint Knowledge Synthesis initiative on big challenges for assessment practice
• our team of nine profs and grad students gets to report on how to deal with sustainability assessment, regional/strategic assessment and Indigenous partnerships in ways that improve all three.
• the youngest of us expect to see evidence of committed applications within their lifetimes.
Brendon Larson

- The ADUG role takes the majority of my time, especially with all the adjustments and requirements of the COVID-pivot; my report will be posted at
  - https://uwaterloo.ca/environment/aboutenvironment/strategy-and-progress/annual-reports
- In Spring 2020, I taught a virtual version of my ‘field’ course (ERS283), which was quite a twist.
- Stephanie Barr defended her PhD in fall 2020; two more MES and two more PhD students working away.
- Just a few papers in 2020, one with Stephanie and another with my PhD student Rachael Edwards
- Domain editor for “Climate, Ecology and Conservation,” WIREs Climate Change
Dan McCarthy

Dan has several inter-related community-based projects that kept him busy from May 2020-April 2021:

Co-reclamation in the Oil Sands
This is the second year of a 5-year, funded project that is a collaboration between the Fort McKay First Nation, Suncor Energy Company and Universities of Waterloo and Calgary. The intent of the project is to transform, and begin the process of healing, the relationship between the Fort McKay First Nation and the Suncor Energy Company around reclamation while attempting to heal the land. The first phase is to re-establish relationships and engage the community in a respectful, relevant, reciprocal and responsible manner. As with any process of reconciliation, this a challenging but rewarding journey. This past year has seen some fundamental changes to our research team and the loss of two key Elders from the community. The COVID-19 pandemic has meant that we have had to slow the project down and obviously refrain from any in-person meetings. We have instead maintained some regular, virtual contact with the community but focused more on thorough literature reviews to support our work.

Reconciliation, Education and Research on Haida Gwaii
This SSHRC-funded project in collaboration with the Haida Gwaii Institute and the Haida Gwaii Museum and the Universities of Waterloo, British Columbia, Lethbridge and Alberta. This research aims to explore, support, and inform a precedent setting intercultural social innovation through an Indigenous research collaboration in one of Canada’s most renowned reconciliation contexts - Haida Gwaii. Social innovations are initiatives that challenge and change the defining social structures of broader social systems. For the purposes of this research, we consider intercultural social innovations to be grounded in a shared responsibility to reciprocally and respectfully navigate the evolving landscape of reconciliation in Canada. In the context of the COVID-19 pandemic, we have hired two research associates from the Skidegate and Old Massett communities on Haida Gwaii to support continued research on behalf of the HGI and the Haida Gwaii Museum. Michaela McGuire is a PhD student at the University of British Columbia and a member of Old Massett First Nation, was hired to conduct research for the HGI and the Council for the Haida Nation looking at the pre-feasibility of a Haida-led research centre on Haida Gwaii. Helen Englebert, a member of the Skidegate community and former staff of the Haida Gwaii Museum was hired to develop a Haida-led research protocol for the Museum and for the Council for the Haida Nation.

Waterloo Institute for Social Innovation and Resilience (WISIR) Incubating the Turtle Island Institute
WISIR has been incubating an Indigenous-led social innovation think-and-do-tank which has now been established as Turtle Island Institute (TII), an independent entity on the TIDES Platform. TII has received over $3 million dollars in support, mainly from the Suncor Energy Foundation and the J.W. McConnell Foundation as well as other funders such as the MasterCard Foundation. TII has been active in the development of its business plan as well as further development of tools and pedagogy for helping to foster Indigenous-led Social Innovation across Canada. All of TII’s work has been taken online through a virtual platform. WISIR’s role as an incubator will end at the end of 2021. TII is already a stand-alone institute with new projects and new partnerships are currently being nurtured with other university partners and other funders.

Transformation in the Food and Agriculture Systems in Southern Ontario: Oak Ridges Institute for Applied Sustainability (ORIAS) and Mount Wolfe Farm
This project has been developed in collaboration with the owners of Mount Wolfe Farm, the Save the Oak Ridges Moraine (STORM) Coalition and the University of Waterloo and Queen’s University to explore transformations in the food and agriculture system of southern Ontario in the context of the land use and conservation planning context in the Greater Golden Horseshoe. Part of this work is to explore the development of the ORIAS as a vehicle for cross-scalar innovations or transformations. This work has continued virtually in the context of COVID-19 with 4 undergraduate theses being completed this year to support the ongoing work of ORIAS.
Stephen Murphy

Murphy (Conservation and Restoration Ecology - CaRE - Research Group)

Despite the pandemic, the research group managed to publish outright or have in-press 22 peer reviewed articles by the end of April 2021. 6 graduate students passed their comprehensive exams and three students graduated and all have secured post-graduate employment. Additionally, 14 undergraduate students completed their theses during the last year under the shadow of the pandemic.

All the students have done a wonderful job during the direst circumstances since either the two world wars or the last major pandemic 100 years ago.

Some field work did resume and get completed during the latter part of summer 2020 but much of it was cancelled and the third wave has hit 16 projects that now miss 2 spring field seasons - all 16 projects have been truncated and ended permanently. The remaining 8 field projects are either stalled for a year with most likely to be cancelled permanently as well. We anticipate that 21 of 24 projects in total will end prematurely, withdrawing all plans for student field research that was internationally based or based outside of southern Ontario.

Most of the current graduate students had already planned socioecological research that focused mainly on remote interviews and/or database usage, with some ambitions - one hopes - for field work occurring now in 2022. Same goes for lab work where Neil Carnegie and the UW crews have done a terrific job in building and moving the CaRE wet lab to EV2 1021.

Murphy has focused his sabbatical on the long planned strategic and operational pivot to 2 major projects related to the United Nations Decade on Ecosystem Restoration where their start as of April 2021 did not require field research (fortunately). These will occupy the bulk of the next 10 years and offer opportunities even in the face of tribulations - research tribulations that pale in comparison to those who have had their lives lost or forever altered.

This gives one pause and a bigger perspective on the loss of research vs. the loss of life and health by too many others. We look ahead to better days and must appreciate that university professors have had more resources to cope with the situation and that is a privilege. There are many lessons about equity and being a better human being to be learned from this pandemic.

The pictures attached are some of the spring wildflowers being studied in the Waterloo Region under the current covid restrictions. They symbolize renewal, beauty, and hope for the future.
James Nugent

This was a challenging year for teaching, but necessarily a year of pedagogical innovation. I spent considerable time experimenting with new teaching technologies and flexible learning systems for online teaching and to meet the social and psychological needs of students during a global pandemic.

Through my role on the SERS Undergraduate Studies Committee, I took a lead role supervising co-op students hired to assist with online learning and with student retention and engagement. I’d like to thank OLAs Grace Cullinane (fall), Lauren Muccin (winter) and Haniah Iqbal (winter) for their help. I also supervised retention and engagement coop students Ben Muller (spring & winter), Roaha Muhammad (spring) and Erika Stevens (winter). These students led many initiatives to create a sense of “virtual campus” within SERS and in the Faculty of Environment, such as: a virtual “bulletin board” hosted by The Radicle; meet-the-professors trivia nights; alumni events; sending out personalized holiday cards; classroom updates; health and wellness activities; supporting student associations and clubs; social media posts; etc. Learning from initial engagement challenges at the beginning of the pandemic, Ben’s “weekly wellness challenges” helped students get off-screen and stay active while still coming back to connect with peers. Roaha and Grace helped organize a very successful panel discussion in the fall entitled “From Environmental Racism to Environmental Justice.”

It has been a challenging year for youth to find employment, so I also hired two coop students in the Faculty of Environment to act as coop RAs. Joel Agbey received the Mitacs Research Training Award for a project entitled, “Mitigation of University Travel and Finance-related Greenhouse Gas Emissions.” Pikru Thokchom’s research on existing urban policies for promoting more equitable cities will benefit my future students and local community partners like The Working Centre in Kitchener.

This past year I have had the pleasure supervising SERS honours thesis undertaken by Lillian Lu (environmental governance in China); Sierra Aston (sustainable fashion & social media); Beth Grant (eco-anxiety & photovoice interventions); and Maggie Chang (opportunities and challenges for BIPOC environmentalisms).

Over the past two years I’ve been helping to popularize a new system of grading called “specifications grading.” We held a well-attended panel presentation at this year’s UW Teaching and Learning Conference to showcase the range of ways that UW instructors have implemented specs grading in almost every faculty now. I also enjoyed working with the Climate Justice Working Group of FAUW to increase institutional attention and urgency toward the climate crisis and being a judge for the 2021 Ontario Ethics Bowl.
- **Associate Directorships**
  - Waterloo Centre for Microbial Research (Associate Director)
  - School of Environment, Resources and Sustainability (Interim Associate Director Undergraduate Studies)

- **Editorial activities**
  - Associate Editor: Agroforestry Systems
  - Associate Editor: Journal of Environmental Quality
  - Guest Associate Editor: Agriculture, Ecosystems and Environment special issue: *Agroforestry and climate change*
  - Guest Associate Editor: Canadian Journal of Soil Science special issue: *Biochar amendments for sustainable soil management*
  - Editorial Board: Environmental Management

- **Session organizer and convener** on *Biochar-its Impact on Soil and Crops in Agriculture* for the forthcoming annual meeting of the Canadian Society of Soil Science June 6-10th, 2021 (virtual)

- **Publications**
  - 5 peer-reviewed publications
  - 2 book chapters

- **Knowledge mobilization**
  - 2 Scientific reports (OMAFRA, AAFC)
  - 1 Newsletter article (Temperate Agroforester: Winter greenhouse gas emissions from bioenergy plantations)
  - 1 interview for article in Ontario Farmer (soil carbon sequestration)
  - 1 video interview for Ontario Crop and Soil Improvement Association (greenhouse gases from riparian zones)

- **Participation as Associate Investigator** in collaboration with colleagues across Canada in the preparation and submission of a New Frontiers in Research Fund.

- **Field research continued under covid-19** on two projects.
  - Greenhouse gas emissions and soil carbon speciation in perennial bioenergy crops on low productive agricultural land
  - Soil health and greenhouse gas emissions with biobased amendments
Stephen Quilley

I was on sabbatical for most of the year conducting interviews with people involved in traditional music in the North East of England (just after my PhD student Anna Beresford had finished a parallel study in Orkney). My own work was unfortunately stymied by Covid. I did however do a great deal of reading. I was asked to write for the IPPR in-house magazine, the Progressive Review which was a first. Other than that, lockdown year was notable only for a new puppy.

BOOKS

• Kish, K. and Quilley, S. 2021[In Press] Ecological Limits of Development: Living with the Sustainable Development Goals (London: Routledge). We just submitted this manuscript last week. Very happy to have made what I hope will be a significant contribution to the growing debate around sustainable development goals.

ARTICLES


CHAPTERS

• Steven Loyal and Stephen Quilley (2020) State Formation, Habitus, and National Character:Elias, Bourdieu, Polanyi, and Gellner and the Case of Asylum Seekers in Ireland Historical Social Research 45 (2020) x, x-xx | published by GESIS DOI: 10.12759/hr.45.2020.x.x-xx
CONFERENCE PRESENTATIONS

- April 2021: ‘Livelihood and the Post-Covid Economy’ 15th International Karl Polanyi Conference *the Role of the State in the post-COVID 21st Century* Concordia University, Montreal, Canada April 21-24, 2021

MEDIA

During 2020-2021, while not based in SERS, I continued to supervise graduate students, to serve on other graduate students’ committees, and to engage in other activities in the School (and the Faculty).

From May 2020 to December 2020, I was on sabbatical. While the ‘best laid plans’ to spend the time in London, UK did not materialize, I was able to work virtually with colleagues at the Association of Commonwealth Universities, building upon the ‘in-person’ time I had had with them during the first part of 2020. ... Amongst the projects in which I was engaged were the following:

- sustainable urbanization issues (https://commonwealthsustainablecities.org/); and


I continued to participate in the work of the NSERC Energy Storage Technology Network (https://www.ryerson.ca/nestnet/).

With students and colleagues, collaborative work was published in *Energy Research & Social Science* (x2) and *Energy Reports*.

In January 2021, I returned to the Associate Vice-President, International role, starting a three-year term.

Reflections on the future of international education were published in *Forum* (journal of the European Association for International Education), *Global Education Times*, and *University World News.*
May we live in interesting times... These times certainly qualify! For Trevor, it has been an “interesting” year for sure. After starting 2020 by re-locating to Waterloo from Ottawa, carefully re-decorating Sarah Wolfe’s office that he is using during her temporary absence and getting used to the university life, things changed again rather abruptly! After returning to Ottawa to work from home from there, Trevor designed and delivered two new courses online in the Fall Term. The first was ERS 275 a broad survey course on the future of our oceans and covered everything from how tides and currents work, to hurricanes, climate change, whales, marine security, pirates and protected areas. The second was ERS 375a that “looked under the hood” at how environmental decision-making works in the federal government, how it is set up, how it functions and how to influence it as an environmental activist. All things considered for two new courses in an odd new environment, things went pretty well and students consistently reported that they loved Trevor’s sparkling sense of humour and his “Dad Jokes” in particular!

Winter Term saw Trevor delivering a fourth year/Master’s level course (ERS 474/GEOG 456/694) on fish forests and wildlife for the fourth consecutive year. Normally it features a two-day field trip to Ottawa which was impossible this year. But several of the leaders of the federal environmental community demonstrated their true commitment to the environment and to education by joining the class virtually in Friday morning Zoom sessions. Environment and Climate Change Minister Jonathan Wilkinson, former Green Party Leader Elizabeth May, Parliamentary Secretary for Fisheries and Oceans Terry Beech, MP for Penticton-Okanagan Richard Cannings, Oceana CEO Josh Laughren, WWF -Canada President Meghan Leslie, the Honourable Joe Jordan and Crown Indigenous Relations Deputy Minister Daniel Watson all made time for the group and added a some variety to a challenging online environment.

Working with several colleagues at Wilfred Laurier University and the University of Alberta, Trevor also published his first journal article which appeared in FACETs in 2021. And of course the year was a chance for Trevor to acquire some cool new art by local artist Caroline Gutsche and to grow a shaggy beard and long hair reminiscent of his time as an environmental protester as a UW student back in the early 80’s! Though he had more hair then!
Andrew Trant

News

The first SESYNC (the National Socio-Environmental Synthesis Centre) meeting that Andrew is co-leading on how historical ecological data can be used to better manage ecosystems was held in late November 2020. It was a virtual success! See Imagine 1 for a group photo.

Andrew and postdoc Emma Davis co-chaired a special session at the (virtual) ArcticChange2020 conference on arctic plant diversity and people.

Publications

Over the year, Andrew published papers in venues that included *Nature Scientific Reports, Ecosphere, Ecosystems,* and *Facets*. This research was picked up by over 120 new agencies including the *Toronto Star, Globe & Mail, Global News* and the *Smithsonian Magazine*. See Image 2 for an infographic (Inuktitut) and Image 3 for an example of the media coverage.

SERS Honours student (and Trant Ecological Legacy Lab alumna), Taylor Larking, published her senior research project in *Arctic Science* on linking satellite and field data for understanding arctic ecosystem change.

The first Trant Ecological Legacy Lab publication came out this year in *Facets* on considering Indigenous stewardship when conducting ecological research. The list of co-authors includes two SERS undergraduate and three graduate students. Our second lab paper is in review at *PNAS* (fingers crossed!).

The lab

The Trant Ecological Legacy Lab keeps expanding now with two postdocs (Emma/Kira), four PhD students (Sara/ Patrick/Kyle/Elaine (co-supervised with Courtenay), two Master’s (Alana/Alex), two honours students (Emily/Nhu) and one co-op student (Julia)! This year PhD student Patrick Lauriault received an NSERC PGS-D and two undergrad students (Siobhan Mullally and Jackie Kinney) received NSERC URSAs for work this coming summer.

![Image 1. SESYNC Pursuit historical ecology group.](image)
[Image 2. Inuktitut infographic for publication led by Trant Ecological Legacy Lab postdoc Emma Davis.]

Because of Climate Change, Canada’s Rocky Mountain Forests Are on the Move
Using century-old surveying photos, scientists have mapped 100 years of change in the Canadian Rockies to document the climate-altered landscape

[Image 3. Research coverage in the Smithsonian Magazine resulting from Trant et al. 2020.]
PUBLICATIONS:


GRANTS:

2021 “The Affective Load of Sustainability Education: The implications of emotion for students' engagement and knowledge retention” $197 200. SSHRC Partnership Development Grant (PI; 100% funded).

Summary: we'll answer four questions: 1) What is the affective load, including the implicit and explicit emotional components and characteristics, of Interdisciplinary Environmental Studies and Science (IESS) education in an era of rapid climate change and deep uncertainty about the future? 2) What are the implications of this affective load for students’ willingness to undertake IESSc post-secondary education? 3) Given this affective load, how do different learning spaces—for example, classroom, lab, field, and/or online—influence students' knowledge retention? 4) How might IESSc education be adapted to account for the affective load at the secondary and post-secondary levels to encourage student-citizens' ongoing engagement? Our comparative research will span three universities (Waterloo, Victoria and Royal Roads) and include two cases (ecology & water).

2021 “SSHRC Post-Doctoral Fellowship”, $90 000 awarded to Dr. Kirsten Rudestam (UC-Santa Cruz) to work with me on research focused on the presence and influence of emotion in interdisciplinary, post-secondary water curriculum at the University of Waterloo and the University of Victoria.

2020 “Global Classrooms – Virtual Exchange Program”, $4 000 USD applicant team; University of California, Santa Cruz (Co-PI; 100% awarded). Fall 2021: Experimental and collaborative teaching exchange linking students in Wolfe’s RRU course on environmental (water) governance and Rudestam’s University of California course on water sustainability and justice.

EDITORIAL:

ENV WEEKLY STUDENT CHALLENGE

This was a 12-week Instagram challenge facilitated through the Environment Students Society (ESS) page. Students registered with a google form and used a challenge document posted online that had options to do fun or academic related activities with roommates or a virtual partner. They shared and sent photos of themselves doing the challenges to the ESS Instagram page to be entered into a weekly draw for a sustainable prize. Students of all years and programs in the faculty participated.

ERS STUDENT / PROF CONNECTION EVENT

Students and profs in ERS came together for a night of informal chats and fun games. The event used 3 separate Microsoft Teams calls that each had a facilitator, a pair or trio of profs, and students who could move between calls by going back to links posted in the chat. Games played included “Pictionary” using the whiteboard function, “Never Have I Ever”, and “Mad Libs” with environmentally themed stories. There were lots of laughs and made for a memorable night. Here is how we did it.

REMOTE WORK EXPERIENCE REVIEW

Co-op students working remotely across the faculty came together to reflect on the work-from-home experience. Together, we identified the greatest skills that all students working in these positions should have the chance to develop, favorite moments, and things we would like to have changed or done differently. From this, we made a 1-page document and infographic with the hope that this will help future students in these positions.

ECO-GRIEF / ECO-ANXIETY ADVOCACY

The EOLC was also the Mental Health and Wellness Director on ESS, which allowed for combined networking and opportunity to expand job activities for student advocacy work in the faculty of environment. Working with the communications coordinator for Campus Wellness and executives from Climate Students, a self-registration learn course and term-annual workshop on coping with eco-grief is currently in the works. The goal is to have this in place starting Fall term 2021.

OTHER INVOLVEMENTS

The EOLC sat as a student chair on the “Co-op in ENV Review Committee” and contributed to discussion in the reflection working group. He also collaborated with students working for the Sustainability Office and the commissioner for WUSA Sustainability Project (WSP). Bi-weekly student engagement meetings with other students held by Graham Barnes were attended.
SERS Staff

2020-2021 brought many challenges and many procedural changes for SERS staff while dealing with working from home due to the pandemic and the many challenges it brought with it. As always SERS staff stepped up to the new challenges and as seamlessly as possibly continued to give both students and faculty exceptional service and support.

During the past year, SERS created an online booking system for students to book advisor meetings (using Team’s meetings), created generic emails for administrative roles to allow for a seamless transition if a leave was to occur as well continually updating the SERS website to provide SERS students with as information to help support the students.

In April 2021, Amanda Campbell welcomed the arrival of Baby Isabelle Leigh Campbell and Sofija Jelacic joined the SERS team to cover Amanda’s maternity leave.

To our Adjuncts, Sessional Lecturers, Alumni and Students, we thank you all for your contributions and for keeping us posted on your accomplishments.

Particular thanks are due to:
Grad Student Reps:
   Ella-Kari Muhl, Kyle Schang, Mary-Rosalind Snyder, Emily Bass
Undergraduate Reps:
   Bonnie Gao and Jane Pangilinan