

School of Environment, Resources and Sustainability

Annual Report 2024-25

SERS mission



To foster the transdisciplinary research, teaching and outreach to protect, restore, reform and transform the social and ecological systems upon which we all depend.

Our School is guided by a collective desire to work towards a sustainable future. We do so by focusing on ecologically and socially significant issues at scales ranging from the community to the globe; working within, between and across disciplines and ways of knowing; and engaging with the people and organizations affected by the issues that concern us to make sure our research, teaching and outreach is relevant and effective.



Highlights and accomplishments

Derek Armitage	Co-developed an UG course (with Trevor Swerdfager) on interdisciplinary approaches to biodiversity conservation, as well as a Grad WIL course on Great Lakes conservation with colleagues from Parks Canada and NOAA. Published an edited volume (UBC Press) on Canada's Oceans, served as coordinating lead author for the World Oceans Assessment, and gave several keynote talks to Fisheries and Oceans Canada on issues related to marine conservation, climate resilient fisheries and integrating social sciences into fisheries decision making.
Christy Barbeau	In my role as Associate Dean of Teaching, I have actively supported effective teaching practices within the Faculty of Environment. This includes leading initiatives such as the Teaching Conversations Series and Peer Review of Teaching. Additionally, I have worked to align institutional teaching priorities with the faculty's strategic goals, initiating the Faculty of Environment Accessible Education Working Group and collaborating on various projects. At the institutional level, I have also led the Outline Working Group, enhancing course outline accessibility and consistency across the university.
Jennifer Clapp	Published <i>Titans of Industrial Agriculture: How a Few Giant Corporations Came to Dominate the Farm Sector and Why it Matters</i> , with MIT Press (February 2025). Also published two book chapters and two journal articles, in addition to contributing to several reports of the International Panel of Experts on Sustainable Food Systems. Gave keynote addresses in Germany, Brazil, Rutgers University, Duke University, and many other public presentations.
Andrea Collins	Published her first sole-authored monograph, <i>Gender and the Global Land Grab: A Feminist Global Governance Approach</i> , with McGill-Queen's University Press (June 2024). As SERS Associate Director, Graduate Studies, she created new visual aids to help students chart their progress in our graduate programs.
Simon Courtenay	Six student-led journal-papers published and two book chapters. Simon retired March 31, 2025 but continues, as an adjunct professor, to work with graduate students at UW-ENV (SERS and SEED), UW-Biology and INRS-Eau, Terre, Environment Research Centre, UPEI-Biology and UNB-Interdisciplinary Studies.
Rob de Loë	Building on the strategic planning under ENV 2035, led the creation of the new Research Council. Final offering of ERS 318 in Fall, 2024 attracted students from five of the six faculties, and all five units in ENV. Two

	journal articles from my former water governance program published, several invited talks from my new art-science integration program, and several knowledge mobilization initiatives with partners.
Felicitas Egunyü	Obtained a SSHRC Insight Development Grant. Established research partnerships with colleagues in academia and civil society in Uganda. Conducted field work in Uganda on artisanal and small-scale mining. Acted as a faculty mentor at a graduate field school for 18 students (12 of them from universities in South Africa and Germany), the field school was co-hosted by Vancouver Island University and Mount Arrowsmith Biosphere Reserve.
Graham Epstein	Contributed to eight peer-reviewed manuscripts, joined the editorial board at People and Nature and was a co-lead author of an assessment report of community-led coastal governance in the Southwestern Indian Ocean for WWF and CORDIO.
Brad Fedy	Applied for and received promotion to Full Professor. Continued development of ERS 669 Applied Statistics in Ecology and Environment, which is open to all graduate students in the faculty (including approximately 50% enrollment from Biology) and wrote a textbook (including data and code analysis) to support the course. Supervised and trained 8 highly qualified personnel from postdocs to field assistants. Actively engaged in outreach with 6 conference presentations, 4 public lectures and high school presentations to >300 participants, and provided 4 radio and print article interviews.
Dustin Garrick	Six journal articles (four student-led), a report for the Lincoln Institute, and advisory role for the World Bank (and a certificate of recognition). Joined executive editorial board of Environmental Research Letters. Directed the Collaborative Water Program, leading a strategic review with inputs from 12 units across the University (helping to boost enrolments by 50% year-over-year) and building a new partnership with the Grand River Conservation Authority. Secured grant from the Gordon Foundation to undertake a pan-Canadian review of groundwater governance. Expanded environmental education initiatives of Water Cycles Expeditions to reach primary and secondary schools. Keynote @ Grand River Forum. Final Oxford DPhil student finished, and Waterloo PhD student secured prestigious PEO Scholar Award.
Bob Gibson	Completed a research project on next generation impact assessment with multiple colleagues, students, publications and actual applications. Involvement in Ring of Fire Regional Assessment with Canada and 15 First

	Nations has led to a new project on scenario tools for depicting and comparing options for regional futures.
Leah Jones-Crank	Contributed to five peer-reviewed publications, became an associate editor of Environmental Science & Policy, and was selected to serve on the Young Scientific Programme Committee for World Water Week 2025.
Brendon Larson	My foci during this period were my students' projects, significant revision of two core courses (ERS102; ENVS200), and a crossover book under contract with McGill-Queen's University Press (submitted Feb. 2025).
Kelsey Leonard	Five journal articles (two student-led), served as lead author for Water Justice chapter of Status of Tribes and Climate Change (STACC) Report, and served as lead section author for High Level Ocean Panel report on "Co-producing Sustainable Ocean Plans with Indigenous and traditional knowledge holders". The WAMPUM Lab has supported six PhD students, three Master's students, one Senior Honours student, one NSERC Postdoctoral Fellow, 2 full-time research associates, as well as two Indigenous community-based researchers. Moreover, in the past year the WAMPUM Lab has supported seven undergraduate and graduate student research assistants across Spring, Fall, and Winter terms. Our lab has two student-led papers under review. I joined an international research team on climate security supported by NATO CCASCOE, engaged in numerous knowledge mobilization activities with partners, and delivered several keynotes including presenting at the United Nations Permanent Forum on Indigenous Issues at the UN headquarters.
Chantel Markle	Published 4 peer-reviewed articles and 1 invited book chapter. Secured an NSERC Discovery Grant and Alliance. Our research group (Wildlife Ecohydrology and Conservation) has grown to include 1 Postdoctoral Research Scholar, 3 PhD students, 3 Master's students and numerous undergraduates! Our lab has 4 student-led papers in review. Welcomed a new baby in Dec 2024 and currently on leave.
Stephen Murphy	Our research group (CaRE – Conservation and Restoration Ecology) had 8 student led papers published, showcasing the leadership and innovation of our SERS students. The group led global to local efforts Ecological Restoration, Biodiversity, & Conservation assessments, policies, research & action, especially in North America and Europe.
James Nugent	Developed new online graduate studies course for Future Cities program (FCIT604 The Socially Just City). Taught core course in China to our 2+2 NUFE students. Trained three TAs in tutorial facilitation. Organized a series of campus educational talks/films regarding Palestinian-Israeli conflict. Revising ENVS131 for common first year. SERS honours thesis

	student supervision. Non-teaching term. A big focus has been university governance through Senate and FAUW (budget constraints, student demonstrations/free expression, Policy 76/77, employment agreements).
Maren Oelbermann	10 peer reviewed publications of which two of them were in very high impact factor journals. Took on Associate Editor role for Soil Use and Management. Completed, as lead guest editor, special issue on agroforestry and soil carbon in Geoderma Regional. Appeared on CBC The National and CBC Radio Your World Tonight (topic was on climate change and coffee production). One PhD student successfully completed his dissertation.
Stephen Quilley	3 peer-reviewed articles, 2 chapters and a significant paper in the journal <i>New Polity</i> whereby I also developed significant research contacts with a network of theologians, historians and political economists working on political and environmental issues pertaining to post-liberalism. I undertook extensive professional training with the <i>Institute of Sustainability and Environmental Professionals</i> (nee IEMA) achieving certification in Net Zero, Sustainable Procurement and passing the exam necessary for Fellowship status. I have been Co-applicant on a SSHRC Insight application and, as Principal Applicant, put together a 15-person team (including colleagues from Engineering as well as the private sector) to submit the NOI (develop the LOI) for a SSHRC-NFRF project to create an Ecological-Artificial Intelligence (EAI) platform.
Ian Rowlands	Followed-up a sabbatical visit to partners in Germany with a (with ENV colleagues, Profs Burch and Moreno-Cruz) Balsillie School-supported Canada-Germany Virtual Workshop on sustainable energy transitions and a successful application to SSHRC to take collaborative work forward. Reengaging, after administrative duties 'centrally', with teaching (including applying to do a local field course) and community (including joining Waterloo Region Community Energy's Board of Directors) were amongst other highlights.
Helena Shilomboleni	Established collaborative research partnerships with institutions in Kenya and Namibia. Successfully conducted fieldwork in Kenya. Published three journal articles and one report. Secured a Learning Innovation and Teaching Enhancement (LITE) Seed Grant. Appointed as a Faculty member at the Balsillie School of International Affairs (BSIA).
Trevor Swerdfager	Co-developed the new online course ERS 245 Interdisciplinary Perspectives on Biodiversity Conservation: Nature, People and Policy. Co-authored article in <i>The Conversation</i> related to Canada's need for ambitious new biodiversity law.

Andrew Trant	Published seven peer-reviewed articles (one in <i>PNAS</i> that was featured in <i>Science</i>), along with receiving 3-year research funding through ArcticNet (2025-2028) and, more tangentially, as a collaborator on a SSHRC Insight Grant. Over the past year, the Trant Ecological Legacies Lab has supported five PhD students, four Master's students, and two Senior Honours students, as well as three Inuit Youth Research Technicians. As Associate Director Undergraduate Studies, I initiated the Wayfinders Program and led the review of our SERS core courses.
Patti Bester	Took on the undergraduate advisor duties for Knowledge Integration in Winter 25. This included becoming familiar with the numerous breadth requirements in this program and their fulfilment.
Mary Anne Hardy	Completed the HR Foundations for Managers set of courses offered by UW HR as well as the WCMS Forms course. SERS achieved gold certification in the Green Office program again this year. Led SERS' participation in the Holiday Gift Drive organized by CEE which saw SERS support four families with gifts for six children.
Stephanie Mohl	I completed all necessary training (10 courses) associated with my position. I am also a member of the ENV Brand Advisory Committee, and we drafted a new mission and vision statement for the Faculty. I continue to work towards making the SERS graduate students feel supported and ensuring that they have a great university experience.

People, places and activities

SERS hosted a **lemonade social** for grad students on the afternoon of September 3, 2024. It was well attended by students and faculty. Thank you to Stephanie Mohl for organizing!



SERS Salons offered a set of four quick talks by graduate students in September, and in November Felicitas Egunyuko spoke on artisanal and small-scale mining in Uganda.

Green Office – Gold certification in 2024 (again this year!)



ERS 318 “Photography for Sustainability” (with Rob dL) open house/ presentations occurred December 3, 2024. <https://uwaterloo.ca/environment-resources-and-sustainability/blog/using-photography-express-sustainability-ers-318>



SERS faculty and staff held a holiday event with lunch and games – December 6, 2024. Yahtzee was a hit and Patti Bester showed us how it is done!

SERS staff and faculty once again participated in the Holiday Gift Drive providing gifts for six children in our community- November/ December 2024. Thank you to Mary Anne Hardy for making this important event happen!

ERS 403 poster session took place to showcase another impressive set of research projects by our 4th year students – March 31, 2025. Thanks to Trevor Swerdfager for bringing the event together!



SERS' Annual Retreat took place April 22, 2025. We covered a range of UG and graduate-related themes, and were very pleased to welcome our colleagues from Knowledge Integration, Katie Plaisance, Rob Gorbet and Vanessa Schweizer, who will be joining the School as of July 1, 2025.



Selected comings and goings

New Additions: Chantel Markle and her family welcomed baby Henry in December 2024!

New Post docs:

Augustine Osei (Aug 1/24-March 31/25) – with Maren Oelbermann

Sandra Klemet-N'Guessan (Sept 1/24-Aug 31/26) – with Kelsey Leonard

Brandon Van Huizen – (Jan 1/25- Sept 30/26) - with Chantel Markle

New Research Associates:

Beth Grant (June 1/24 – May 31/25) – with Rob de Loë and Brendon Larson

Alison Clarke (Sept 15/24 – March 14/25, Career Launcher funded) & (March 15/25-March 27/26 climate, peatlands and sustainability) – with Kelsey Leonard

Andrea Villalon (originally March 11/24-Nov 10/24 – Mitacs funded); renewed as Can-Peat Research Associate (Nov 12/24-Nov 11/26) - with Kelsey Leonard

Visiting students:

Paulo Guilherme da Silva Farias (June /24 to Nov /24) – with Maren Oelbermann, student at State University of Mato Grosso do Sul

Camila Beatriz da Silva Souza (Sept /24 to Mar /25) – with Maren Oelbermann, student at State University of Mato Grosso do Sul

Goings:

Dan McCarthy – July 31, 2024 – left UWaterloo to take a position at University College Cork Centre for Planning Education & Research, University College Cork, Ireland

Simon Courtenay – March 31, 2025 – retired from UWaterloo and is now living in New Brunswick.
<https://uwaterloo.ca/environment-resources-and-sustainability/news/simon-courtenay-retires-leaving-legacy-leadership-learning>

Deborah Prado – Visiting Post-Doctoral Fellow and Invited Scholar returned to Brazil after a successful year with the Vulnerability to Viability Global Partnership for Small-Scale Fisheries.

Sabbaticals:

Simon Courtenay – Jan 1/24 to March 31/25

Ian Rowlands – Jan 1/24 to April 30/25

Books n'things

Derek Armitage: Published an edited volume (UBC Press) on Canada's Oceans, titled *Sea Change*, which draws on the outcomes of the OceanCanada Partnership, a six-year, multidisciplinary initiative supported by the Social Sciences and Humanities Research Council of Canada and based at the University of British Columbia. <https://uwaterloo.ca/environment-resources-and-sustainability/news/book-co-edited-derek-armitage-charts-sustainable-future>

Andrea Collins: Published her first sole-authored monograph, *Gender and the Global Land Grab: A Feminist Global Governance Approach*, with McGill-Queen's University Press (June 2024). The Balsille School of International Affairs held a panel discussion to celebrate the book launch on November 12, 2024. Panelists included Dr. Derek Hall (WLU), Dr. Helena Shilomboleni (UWaterloo, SERS & GEM), Rachael Vriezen (PhD Candidate, BSIA/UWaterloo), and Dr. Andrea M. Collins (UWaterloo, SERS). <https://uwaterloo.ca/environment-resources-and-sustainability/news/andrea-collins-launches-book-gender-and-global-land-grab>

Jennifer Clapp: Published *Titans of Industrial Agriculture: How a Few Giant Corporations Came to Dominate the Farm Sector and Why It Matters*, with MIT Press (February 2025). The Balsille School of International Affairs held a panel discussion to celebrate the book launch on March 11, 2025. Panelists included Dr. Sarah J. Martin (Memorial University), Dr. Bruce Muirhead (UWaterloo), Anastasia Papadopoulos (PhD Candidate, BSIA/UWaterloo), and Dr. Jennifer Clapp (UWaterloo, SERS). <https://uwaterloo.ca/environment-resources-and-sustainability/news/jennifer-clapps-new-book-examines-how-corporations-dominate>

Kelsey Leonard: Contributed a chapter to *Deyohahá:ge: Sharing the River of Life* (Wilfrid Laurier Press), a new book that offers insights from the Covenant Chain-Two Row Wampum, known as the "grandfather of the treaties." <https://uwaterloo.ca/environment-resources-and-sustainability/news/kelsey-leonard-contributes-new-book-two-row-wampum>

She also served as lead author for Water Justice chapter of Status of Tribes and Climate Change (STACC) Report. <https://static1.squarespace.com/static/5ea4a2778a22135afc733499/t/67f3e306c0446530afc1a7f2/1744036625295/Good+Fire+STACC+V2+2025.pdf>

Served as lead section author for High Level Ocean Panel report on *Co-producing Sustainable Ocean Plans with Indigenous and traditional knowledge holders*. <https://oceanpanel.org/wp-content/uploads/2024/10/Final+Indigenous-Knowledge+BP.pdf>

Served as sector co-chair and lead author of the Water Resources chapter in New York State Climate Impacts Assessment report. <https://uwaterloo.ca/environment-resources-and-sustainability/news/kelsey-leonard-sector-co-chair-new-climate-impact-assessment>

Graham Epstein: Lead co-author of an assessment report with SERS PhD alumnus Mark Andrachuk, with the World Wildlife Fund, titled *Stewards of the Coastline* 2025 State of Coastal Community-Managed Areas in the Southwest Indian Ocean. <https://uwaterloo.ca/environment-resources-and-sustainability/news/graham-epstein-and-mark-andrachuk-co-author-report-world>

Media engagement

Articles were published in *The Conversation* by [Jennifer Clapp](#) and [Trevor Swerdfager and Derek Armitage](#)

Jennifer Clapp was on [The Agenda](#) and featured in a few podcasts, including the *Today I Learned-Climate* episode "Farm to Table with a side of fossil fuels" which outlined the all the ways fossil fuels are used to produce a simple food item. See the SERS blog post: <https://uwaterloo.ca/environment-resources-and-sustainability/blog/fossil-fuels-and-our-food-systems>

Maren Oelbermann appeared on CBC *The National* and CBC Radio *Your World Tonight* to discuss climate change and coffee production, while Brad Fedy provided 4 radio and print article interviews.

Kesley Leonard delivered several keynotes including presenting at the United Nations Permanent Forum on Indigenous Issues at the UN headquarters.

Kesley Leonard hired and supervised a student in the WAMPUM lab to lead the design and creation of an exhibition about the UW Healing Forest as well as Truth and Reconciliation activities at Waterloo and elsewhere. This multi-panel exhibition opened in September 2024 and is located on the first floor of EV2.

Awards, partnerships and other good news

The MOU with Long Point Biosphere Region Foundation continues to build momentum: <https://uwaterloo.ca/environment-resources-and-sustainability/news/sers-signs-letter-intent-long-point-biosphere-region>. Research by SERS faculty and students is taking place in the region. <https://uwaterloo.ca/news/environment/sustainability-vs-growth-why-not-both> Close to a half a dozen graduate students projects are now underway of planned, while SERS students and faculty contributed to the Long Point Research Day on November 1, 2024.

Chantel Markle was awarded a CRC in Wildlife Ecohydrology and Global Change (Tier 2). In addition, she has received a \$76,000 investment from the Canada Foundation for Innovation's John R. Evans Leaders Fund to advance her work. <https://uwaterloo.ca/environment-resources-and-sustainability/news/chantel-markle-named-canada-research-chair>

SERS PhD Alumna Fabiola Alvarado-Revilla was awarded the 2024-25 Collaborative Water Program (CWP) Alumni Achievement Award in recognition of her outstanding achievements in her professional career and in community service.

2024 BES graduate Eloise Fan was awarded the University's Linda Carson Memorial Interdisciplinary award for their BES thesis <https://uwaterloo.ca/environment-resources-and-sustainability/news/eloise-fan-awarded-linda-carson-interdisciplinary-award-bes>

Helena Shilomboleni was appointed as a faculty member at the Balsillie School of International Affairs (BSIA).

Helena Shilomboleni was awarded an SSHRC Insight Development Grant on "Assessing the impact of the Stress Tolerant Rice for Africa and South Asia in Kenya".

Felicitas Egungyu was awarded a SSHRC Insight Development Grants titled "Can NGOs mitigate the social impact of mining in Uganda" <https://uwaterloo.ca/environment-resources-and-sustainability/news/sers-researchers-awarded-prestigious-insight-development>

Dustin Garrick secured a grant from the Gordon Foundation to undertake a pan-Canadian review of groundwater governance.

Dustin Garrick took on an advisory role for the World Bank which earned a certificate of recognition.

Stephen Quilley undertook extensive professional training with the *Institute of Sustainability and Environmental Professionals* (nee IEMA) achieving certification in Net Zero, Sustainable Procurement and passing the exam necessary for Fellowship status.

Kelsey Leonard joined an international research team on climate security supported by NATO Climate Change and Security Centre of Excellence (CCASCOE) which supports the efforts of NATO Allies and partners to adapt to the implications of climate change on their security and mitigate their own impact on climate change while strengthening operational effectiveness.

Helena Shilomboleni secured a Learning Innovation and Teaching Enhancement (LITE) Seed Grant.

Andrew Trant was awarded research funding through ArcticNet for a three year period (2025-2028).

Chantel Markle was awarded an NSERC Alliance grant for research Identifying climate change resilient habitat using an integrative machine learning and coupled microclimate-biophysical modelling framework.

Chantel Markle was awarded an ORF-RI grant: Conservation and Management Strategies to Biodiversity Loss in an Era of Global Change

Leah Jones-Crank received funding through an agreement with the Long Point Biosphere Reserve.

Bob Gibson was awarded a grant from Impact Assessment Agency of Canada for a research project entitled “Cumulative effects mapping and effects pathways for regional assessment future scenarios”.

Ian Rowlands was awarded a SSHRC Destination Horizon Grant for research project entitled “Connecting communities to advance a sustainable energy transition”.

Courses

James Nugent went to Nanjing University of Finance and Economics in April-May 2024 to teach ENVS 195 to the 2 + 2 program students. <https://uwaterloo.ca/environment-resources-and-sustainability/blog/james-nugent-reflects-teaching-nanjing-china>

ENVS474 (Cape Town)- Connecting Climate Change and Social Justice, took place again in Cape Town South Africa – co-led by former SERS PhD student Ella-Kari Muhl (now based at the Centre for Sustainability Transitions, Stellenbosch University), Derek Armitage and Bruce Frayne, Dean of Environment. <https://uwaterloo.ca/environment-resources-and-sustainability/news/sers-students-participate-global-field-course>

ENVS474A (Singapore) – Urban Sustainability: Life as a City in a Garden, a new 10 day field course, was held in late April 2025 co-led by Leah Jones-Crank and Peter Crank, GEM. The course explored Singapore as a sustainable city with a focus on sub-themes such as conservation, urban head, water sustainability and food sustainability.

New course offering ERS 245 – Interdisciplinary Perspectives on Biodiversity Conservation: Nature, People and Policy - new online course developed by Derek Armitage and Trevor Swerdfager with CEL. It was first offered in Winter 25 with approximately 80 students enrolled.

James Nugent developed FCIT604 The Socially Just City, a **new online graduate studies course** for the Future Cities program. The course will be offered in Spring 2025.

Derek Armitage co-developed and co-taught a **new** Grad WIL course on Great Lakes conservation with colleagues from Parks Canada and NOAA in Winter 2025.

Brad Fedy continued development of ERS 669 Applied Statistics in Ecology and Environment, which is open to all graduate students in the faculty (including approximately 50% enrollment from Biology) and wrote a textbook (including data and code analysis) to support the course.

The FREED weekend experience in Algonquin Park took place in spring 2024. Chantel Markle championed this experience and SERS supported it with some funding. Five Environment students participated and a SERS grad student was one of the instructors.

<https://uwaterloo.ca/environment-resources-and-sustainability/news/students-empowered-algonquin-experience>

SERS by the numbers

- Four SERS doctoral students and 11 Masters completed their degrees and graduated, moving onto a range of exciting new adventures
- Approximately 85 graduate students enrolled across all courses (MES and PhD)
- Approximately 30 MES and PhD students were recognized with ongoing internal and external awards (e.g., SSHRC, NSERC, OGS/QEII, Provost awards, etc.)
- 39 undergraduate courses taught, including numerous field -based and experiential courses



- Approximately 1,750 undergraduate students enrolled across all SERS courses
- Number of first year undergraduate students in Fall 2024: 53
- Number of students that convocated in Spring and Fall convocations: 68