

Department of Geography and Environmental Management
Faculty of Environment, University of Waterloo

ANNUAL REPORT TO FACULTY COUNCIL AND GENERAL ASSEMBLY
2022-2023

The Department of Geography and Environmental Management (GEM) is ranked in the top 150 of the QS World University Rankings of Geography departments and occupies the fifth position in the country. It is also ranked in the top 75 Geography Departments according to the Shanghai Academic Rankings of World Universities. On all counts, our success rests on the excellence of our faculty members, the commitment of our staff and the academic prowess of our undergraduate and graduate students, all of whom have come together to create an atmosphere of academic excellence in scholarship and learning and a vibrant, supportive and engaging community within the Faculty.

2022-2023 was a challenging year for the Department with the transition back to ‘normal’ through a hybrid of in person and online and a lot of uncertainty, all due to the global pandemic. The impact of COVID-19 has been significant with field research seasons significantly curtailed, international and local field-based courses cancelled, and access to University buildings for staff, faculty, students restricted resulting in significant impacts on the way we teach, learn and conduct research individually and as a community. Despite these on-going constraints, GEM rose to the challenge of providing high quality undergraduate and graduate programming and conducting nationally and internationally recognized research, sometimes virtually! We were also successful in developing a new CEL-supported on-line course in global pandemics that has now been successfully offered five times to close to 2000 students from across all six faculties. The Department’s on-going response to the on-going challenges of the pandemic has involved everyone’s effort including staff, faculty and students and at this time of the year, it is important to recognize these contributions, however large or small, in helping to ensure that the Department continues to thrive now and into the future; as the Dean of Pandemics, Anthony Fauci, has been quoted: “it ain’t over till it’s over and it ain’t never going to be over”

Academic Plans

The department offers undergraduate plans in Geography and Environmental Management, Geomatics, and Geography and Aviation; all but the Aviation program are available as regular and co-op streams. There is continued activity in the 2+2 and 1+2+1 undergraduate plans with Chinese universities, including Wuhan University, China University of Geosciences (Wuhan), China University of Geosciences (Beijing), Capital Normal University (Beijing). Our graduate thesis programs (Masters and PhD programs) continue to be strong. The Masters in Climate Change (MCC) program continues to strengthen with students being drawn from across Canada to this and the online Graduate Diploma in Climate Risk Management that was launched in September 2018. A new BSc in Climate and Environmental Change was launched in 2022.

The department also partners with a number of other academic units in the delivery of undergraduate and graduate plans. The Department makes a significant contribution to the program in Masters of Economic Development and Innovation, based in the School of Environment, Enterprise, and Development. We also contribute strongly to the University’s Collaborative Water Program which is delivered by multiple departments through the Water Institute and also the Faculty of Science’s Water Science Specialization. Through our partnership

with the Department of Geography and Environmental Studies at Wilfred Laurier University, the Waterloo-Laurier Joint Graduate Program in Geography continues to offer world class graduate programming in geography. A major change made in the 2022-2023 year was the momentous decision to dissolve the joint program, thus allowing both Laurier and Waterloo to offer their separate graduate programs in geography. The 2023-2024 year will be one of transition whereby joint courses will be held, with an ad hoc planning committee in place to re-imagine the future of graduate studies in GEM at Waterloo.

Faculty and Staff

GEM is home to 31 faculty including three Canada Research Chairs (Tier 2): Sarah Burch (SSHRC), Maria Strack (NSERC) and Christine Dow (NSERC). It is also home to two University Research Chairs (Daniel Scott and Susan Elliott). 2023 will see the addition of Dr. Peter Crank (spousal hire) who will contribute to the climate change programming at the graduate and undergraduate levels. In addition, we have an active search for a sustainable aviation hire which should be in place by fall 2023. This person will support our successful and growing aviation program at the undergraduate level as well as the newly approved collaborative aviation program.

The department is very fortunate to have a highly skilled complement of staff who are essential in maintaining the high quality and level of service to students and faculty alike. Susie Castela continues as the Department Administrator while Alan Anthony and Teresa Wilson continue as Graduate Program Administrators. Our new Undergraduate Program Advisor for Geomatics and Geography is Crystal Vong and we are so fortunate to have Sophie Dallaire in the important role as the undergraduate advisor for Aviation and international undergraduate programs. We have also welcomed Sarah Osborne into the role of Aviation Programs Manager.

Research

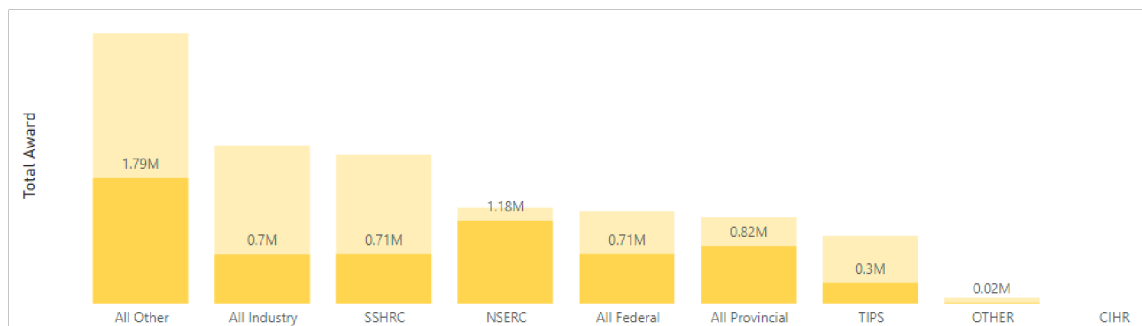


Figure 1. 2021-22 GEM research income by sector relative to the Faculty total in each category.

Research continues to be a high priority activity among our faculty members, with GEM faculty securing increased research funding on 2021-21 totalling \$6.2 million (47% of the \$13.2 million total Faculty research funding) and the highest per capita funding of units in the Faculty. Major new and ongoing funding sources include:

- Tri-council SSHRC, NSERC and CIHR. This includes Partnership, Insight, Discovery, New Frontiers in Research, and Women Rise grants.
- Other Government sources: IDRC, Canadian Space Agency, Indian and Northern Affairs Canada, Natural Resources Canada, Meteorological Service of Canada, The European Space

Agency, The Japan Aerospace Exploration Agency, Chinese National Natural Science Foundation, Polar Knowledge Canada, and Environment and Climate Change Canada.

- Provincial sources of funding include the Ontario Centres of Excellence, Alberta Innovates, Ontario Ministry of Agriculture, Food and Rural Affairs
- The Department is also a very active player in the Global Water Futures (a federally funded CFREF project) with substantial funding to team leaders Merrin Macrae and Claude Duguay.
- Private sector research partners include International Olympic Committee, World Bank, Caribbean Development Bank, Suncor Energy, and Climate Change Emissions Management Corporation. Our international research partnerships also continue to grow.

Faculty researchers also participated in funded research collaborations (e.g. SSHRC Partnership, Networks of Centres of Excellence [AllerGen and Meopar], CFI, NSERC CRF, PICS) with other universities. In addition, faculty members have received significant funding for international research to build back better after COVID-19 in LMICs; this funding comes from CIHR; SSHRC; IDRC; NFRF. Furthermore, private sector research partnerships continue to be important, as funding is received both directly and through NSERC and OCE collaborations.

Awards

During the year colleagues received significant recognition for their scholarship and discipline specific contributions, both internally and externally. These are significant accomplishments recognizing the major contributions colleagues have made in their fields.

Academic Programs

The Department's delivery of high quality teaching and learning is dependent on our faculty and sessional instructors. However, it is also underpinned by the Associate chairs and advising staff whose work is vital to the success of our educational program.

Graduate – Maria Strack has assumed the role of Associate Chair, Graduate Studies Daniel Scott resumed the role of Director of the Masters of Climate Change degree program. Alan Anthony continued as the Graduate Program Administrator for MES, MSc, MA and PhD programs while Teresa Wilson continued as Graduate Program Administrator for the Masters of Climate Change and the Graduate Diploma in Climate Risk Management. Our graduate programs continue to be in demand. This year, 11 new PhD students and 75 new Masters students (26 in GEM, 49 MCC/GDip) entered the grad program. The total current enrollment consists of 151 Masters (75 GEOG + 76 MCC/GDip) and 77 PhD students in our graduate program for a total of 228 students (full time and part time). Success by geography graduate students in receiving external awards is very high with students winning two SSHRC, three NSERC, and six OGS. During the 2022 calendar year, 27 students received their Master's Degree in Geography and 14 students received their PhD. Additionally, the total number of MCC students receiving their degree was 31 with a further six receiving their Graduate Diploma. Our graduate program is strong, transdisciplinary and growing in excellence and achievements. We are excited about the future, given the recent dissolution of the joint graduate program with Wilfred-Laureier.

Undergraduate – Sarah Osborne now manages our Aviation Programs and we are thrilled to have her. Erin O’Connell serves as Associate Chair, Undergraduate studies for GEM and Geomatics plans. Sophie Dallaire now serves as the undergraduate program advisor supporting the Geography and Aviation program and the International programs. Crystal Vong now serves as the undergraduate program advisor, handling Geomatics and GEM plans.

A total of 164 new students entered Geography plans in the 2022-23 academic year (51 Geography, 48 Geomatics, 8 Climate and Environmental Change, and 57 Geography and Aviation). Within these first year admits there were three new 2+2/1+2+1 international students, along with 29 internal transfer students to our programs (4 to CEC, 6 to GEM, 15 to Aviation, and 4 to Geomatics). In total, across all years and plans, there are 737 students enrolled in GEM programs. All of these numbers represent increases over last year.

At Convocation ceremonies in Spring and Fall of 2022 a total of 150 students received a BES Degrees in 3-YR Geography, Honours Geography, Aviation, or Geomatics with 60 students receiving a minor in Geography. A grand total of 210 students (majors and minors) graduated in 2022.

Outreach and Awareness and curriculum development The Department’s Committee on Undergraduate Recruitment continues to conduct significant outreach to well over 750 high schools in Ontario and 1500 teachers. Along with our regular in-person undergraduate curriculum offerings, a new course, “How Pandemics Change the World”, was launched in 2021-22. We now have six CEL online courses available to students on and off campus; in 2022-2023 over 2500 students were enrolled in these courses.

Administration

Contributions in the past year to University and Faculty level administration include: Johanna Wandel as the Associate Dean for Undergraduate Studies; Peter Deadman as Associate Dean for Graduate Studies and Sarah Burch as the Director of the Interdisciplinary Centre on Climate Change. Dan Scott continued as the Director of the Masters in Climate Change. Suzanne Kearns is the founding Director of the Waterloo Institute for Sustainable Aeronautics (WISA). Susan Elliott is the Co-Chair of the Waterloo Awards Committee. The department also makes a substantial contribution to the university governance through substantive representation in the Faculty Association of the University of Waterloo (FAUW) Faculty Relations Committee, University Awards Committee and Senate.

Ad hoc GEM EDI committee’s submission for the GEM Annual Report by Steffanie Scott

The ad hoc GEM EDI-IK committee began in late 2021. It has met approximately monthly since then, with a range of faculty members plus a few grad students and undergrad students reps also contributing.

The group addresses the **needs, barriers, challenges, wants regarding EDI-IK** issues within GEM. A Teams channel was set up as a repository for relevant resources regarding EDI efforts and initiatives in other units across campus (e.g., Architecture, Planning, Public Health) and beyond. We have discussed issues of equity data at UW and beyond. We have shared EDI-IK related events from CTE and the Office of Research.

Part of our discussions focused on how best to develop an **action plan** for next steps for the Department. We explored ideas of a facilitated retreat, or small group discussions as part of a regular Department meeting, or conducting a survey of faculty and staff. There was also discussion of whether it was preferable to have a formal EDI committee (with a Terms of Reference), or to integrate an EDI lens into other ongoing activities of the Department. A **survey** was administered in February/March of 2023 (50% response rate) of faculty and staff, revealed considerable support for the following initiatives:

- Document and address gaps in curricula
- Create spaces for peer sharing of good practices in teaching and learning
- Encourage student engagement; promote student wellness
- Encourage GEM colleagues to undertake EDI training
- Conduct EDI assessment of existing dept policies and procedures
- Create more equitable Faculty Annual Performance Reviews
- Develop EDI principles for faculty and staff hiring
- Develop procedures for equity considerations in departmental events (seminars, panels, open houses, etc.)

Our next step is strategize about adding an **EDI lens to the upcoming undergrad curriculum review**.

In addition: through a collaboration between CTE liaisons Madison Hill and Julia Burke, and Steffanie Scott, two talking circle-format events were held for grad students and faculty during Winter 2023 to share perspectives on **Teaching Towards Reconciliation**. This will continue in Spring term.