

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

ANNUAL REPORT TO FACULTY COUNCIL AND GENERAL ASSEMBLY
2023-2024

The Department of Geography and Environmental Management (GEM) is ranked in the top 150 of the QS World University Rankings of Geography departments and fifth in Canada. GEM is ranked in the top 75 Geography Departments according to the Shanghai Academic Rankings of World Universities. The report below documents GEM's collective contributions in 2023-24 to our students, to the Faculty of Environment, and to the wider communities inside and outside of the University of Waterloo.

A message from the Chair of GEM

In July 2023, I began a four-year term as Chair following the excellent stewardship of interim Chair, Susan Elliott. The department's goals for the next few years reflect an urgent need to reimagine the purpose and functioning of higher education following the COVID pandemic, to foster a deeper sense of community between and among our faculty and students, and to make clearer and deeper connections between our teaching/research activities and the broader community outside Ring Road. The current time period is defined by change and uncertainty locally and globally. During my first year as Chair, I have been energized by the creative ideas, enthusiastic collaboration, and willingness to evolve and embrace change that I have witnessed in GEM and across the Faculty of Environment. The multi-talented and dedicated faculty and staff in GEM are making significant contributions to the Environment 2035 change process, to help prepare us for all that comes next. I am very much looking forward to being on that journey with the wonderful colleagues and students who call this Faculty home.

Dr Chris Fletcher

Chair, Department of Geography and Environmental Management, University of Waterloo.

Academic Plans

The department offers undergraduate plans in Geography and Environmental Management, Geomatics, BSc in Climate and Environmental Change, 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 be in high demand, drawing 40+ students each year from across Canada and the globe. GEM now also offers two climate change diplomas: the online Graduate Diploma in Climate Risk Management that was launched in September 2018, and a new Type II Diploma in Climate Change, to be launched in fall 2024.

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. Starting fall 2025, GEM will switch to offering a standalone graduate research program for Master’s and PhD students that is separate from WLU.

Faculty and Staff

GEM is home to 32 faculty including a nominated NSERC Tier 1 Canada Research Chair (Maria Strack), two Tier 2 Canada Research Chairs (Sarah Burch and Christine Dow), and two University Research Chairs (Daniel Scott and Susan Elliott). On July 1, 2023 GEM welcomed Assistant Professor Dr. Peter Crank, an expert in the impacts of climate change and extreme heat on cities who teaches ENV5278 in winter and several courses at the undergraduate level related to climate change. GEM is pleased to announce the forthcoming arrival, on July 1, 2024, of Dr Seth Wynes as an Assistant Professor in Human Dimensions of Climate Change. Dr Wynes is an expert in low carbon transitions with a PhD from UBC, postdoc experience from Concordia, and joins GEM from his position as a climate analyst with the BC government. During the year colleagues received significant recognition for their scholarship and discipline specific contributions, both internally and externally.

GEM is incredibly proud that Professors Jonathan Li and Daniel Scott were named Fellows of the Royal Society of Canada in 2023, a career-defining honour.

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. Crystal continues as the Undergraduate Program Advisor for Geomatics, BSc in Climate and Environmental Change, and Geography. Sophie Dallaire continues as the Undergraduate advisor for Aviation and international undergraduate programs. We have also welcomed two new staff members, Kosi Ike-Orji as Financial and Administrative Coordinator and Brandon Rodenhurst into the role of Aviation Programs Manager.

Research

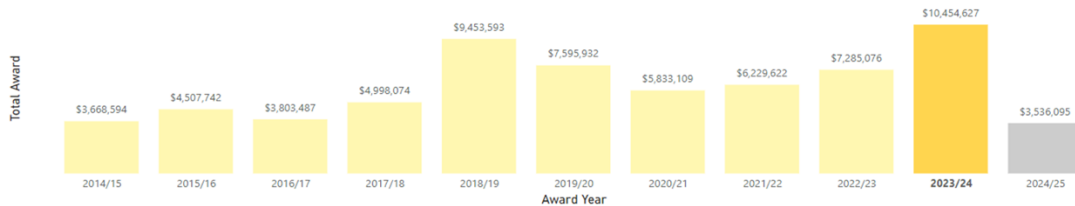


Figure 1: Total research funding (\$) awarded to GEM faculty members aggregated by award year. The 2024/25 award year began on April 1, 2024 and is ongoing.

Research led by faculty members in GEM continues to be highly successful at attracting external funding, reaching a new record total of \$10.4 million in 2023/24 (Figure 1). This total represents 56% of the \$18.5 million total research funding across the Faculty of Environment, making GEM the highest contributor of any unit in terms of absolute research dollars and per faculty member. Approximately 60% of GEM’s total research funding comes from federal sources excluding the

tri-agency, 25% comes from the tri-agency, with the remainder coming from industry, NGOs and other levels of government. GEM’s research faculty used these funds to train HQP and conduct high-impact research in collaboration with a plethora of academic, government and industry partners.

Academic Programs

Graduate – Maria Strack continues as Associate Chair, Graduate Studies, and Daniel Scott continues as Associate Chair, Graduate Studies – Professional Programs. 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 (GDip). Our graduate programs continue to be in demand, with admissions and enrolment numbers shown in *Table 1*. Success by geography graduate students in receiving external awards is very high with students winning four SSHRC, four NSERC, and twelve OGS. An MCC student was selected for the KEEN entrance scholarship and one GEM graduate student received the Caivan scholarship. A subcommittee is currently finalizing a proposal for the modified research graduate program that will launch in fall 2025, following the dissolution of the joint program with WLU.

Table 1: Graduate admissions and enrolment numbers for the 2023-24 academic year.

2023-24	Masters GEM	MCC/GDip	PhD	Total
New admits	26	43/7	10	86
Current enrolment	75	57/16	76	224
Degrees awarded	30	32/13	9	84

Undergraduate – Brandon Rodenhurst took over as Aviation Programs Manager in January 2024, jointly appointed with the Faculty of Science. He has begun working on improving the experience of students currently enrolled in our Aviation programs, and on several exciting new initiatives designed to make the program even more competitive and beneficial for future students. Erin O’Connell serves as Associate Chair, Undergraduate studies for GEM and Geomatics plans. Sophie Dallaire serves as the undergraduate program advisor supporting the Geography and Aviation program and the International programs. Crystal Vong serves as the undergraduate program advisor, handling Geomatics, BSc in Climate and Environmental Change, and GEM plans. Our undergraduate programs continue to be in high demand, with admissions and enrolment numbers shown in *Table 2*.

Table 2: Undergraduate admissions and enrolment numbers for the 2023-24 academic year.

2023-24	GEM	Geomatics	CEC	Aviation	Total
First year admits	57	107	19	57	240
Current enrolment					800+
Majors awarded					119
Minors awarded					58

Within the first year admits there were two new 2+2/1+2+1 international students and seven internal transfer students to our programs. In total, across all years and plans, there are more than 800 undergraduate students enrolled in GEM programs. These numbers represent sustained high demand for Geography education and GEM’s commitment to growth.

Outreach and Awareness and curriculum development

The Department's Committee on Undergraduate Recruitment (CUR) continues to conduct significant outreach to engage high school students and teachers in Geography education. Co-op student Jack Robertson, supervised by faculty members Grant Gunn and Helena Shilomboleni (49% GEM, 51% SERS), delivered 69 outreach roadshows to 25 Ontario high schools in Waterloo region, and beyond. More than 2,000 students were engaged in Kahoot-based Geography activities. A new roadshow focused on Geomatics has been developed with the goal of increasing direct enrolment to the Geomatics program; to date it has engaged with almost 100 students. Jack also spearheaded a significant uptick in GEM's social media activity and interest, with several students reaching out to say that our TikTok insights into life in the department was highly influential in their decision. A CEL online version of our popular course Introduction to GIS (GEOG 281) has been developed and will launch in 2024-25. We now have seven CEL online courses available to students from across campus, many who will take the courses during a co-op term off campus. GEM continues to be a leader in the Faculty of Environment in online service teaching, with over 2,200 students enrolled in CEL courses in 2023-2024.

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.