

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

ANNUAL REPORT TO FACULTY COUNCIL AND GENERAL ASSEMBLY
2024-2025

The Department of Geography and Environmental Management (GEM) is ranked 101-150 of the QS World University Rankings of Geography departments and fifth in Canada. The report below documents GEM's collective contributions to our students, to the Faculty of Environment, and to the wider communities inside and outside of the University of Waterloo in academic year 2024-25.

A message from the Chair of GEM

The department, and the tertiary education sector more generally, are currently experiencing profound and existential pressures, seemingly from all sides. Yet, out of adversity grows opportunity, and we remain committed and focused on delivering world-leading education in Geography that serves our students, employers, and the broader community outside Ring Road. In department meetings and conversations with faculty, staff and students, there is a palpable togetherness of purpose and vision that I find tremendously encouraging. The launch of our revitalised, standalone graduate program in fall 2025, the ongoing comprehensive review and redevelopment of our undergraduate curriculum, the continued excellence and recognition of our world-leading researchers, our continued innovation in outreach and recruitment in Ontario high schools, and the growing professional and social connections between our students, staff and faculty are all examples of how GEM is leading forward, and never standing still. It is a privilege to serve as Chair at such an exciting and rewarding time for our department, and for our discipline.

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 research programs at Masters and PhD level continue to be recruit excellent students. The Masters in Climate Change (MCC) program continues to be in high demand, drawing 30+ 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, launched in fall 2024.

GEM also partners with a number of other academic units in the delivery of undergraduate and graduate plans. The department makes a significant teaching contribution to Masters of Economic Development and Innovation, based in the School of Environment, Enterprise, and Development, and the new Master of Future Cities, administered at the Faculty of Environment level. We also

contribute strongly to the University's Collaborative Water Program which is delivered by multiple departments through the Water Institute, and the Faculty of Science's Water Science Specialization. We recognize the long-standing academic partnership between GEM and the Department of Geography and Environmental Studies at Wilfred Laurier University, which shared the Waterloo-Laurier Joint Graduate Program in Geography until August 2024. Starting fall 2025, GEM will launch a new standalone graduate research program for Master's and PhD students.

Faculty and Staff

As of Apr 1, 2025, 35 faculty members are appointed to GEM, 30 of whom are 100% in GEM. Our faculty members are world-leading, decorated researchers. Maria Strack begins an NSERC Tier 1 Canada Research Chair in fall 2025, while Sarah Burch and Helen Jarvie are nominated for NSERC Tier 1 Canada Research Chairs. Christine Dow, Michelle Rutty and Chantel Markle hold NSERC Tier 2 Canada Research Chairs. Three GEM faculty hold University Research Chairs (Helen Jarvie, Daniel Scott and Susan Elliott). Dan Scott was recently awarded the designation University Professor, the highest academic rank at the University of Waterloo that is reserved for only a handful of exceptional scholars with international pre-eminence.

On July 1, 2024, GEM welcomed Dr. Seth Wynes, Assistant Professor in Human Dimensions of Climate Change. Seth is an expert in climate change and low carbon transitions with a PhD from UBC and postdoctoral experience from Concordia in Montreal. During the year colleagues received significant recognition for their scholarship and discipline specific contributions, both internally and externally.

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, and Kosi Ike-Orji as Financial and Administrative Coordinator. Brandon Rodenhurst continues in his role as Aviation Programs Manager. Alan Anthony and Teresa Wilson continue as Graduate Program Administrators. Crystal Vong continues as the Undergraduate Program Advisor for Geomatics, BSc in Climate and Environmental Change, and Geography. Sophie Dallaire started the year as advisor for Aviation and international undergraduate programs and began a parental leave in February 2025, to be replaced by Emily Beilby. The department congratulates Sophie and her husband on the arrival of our newest (and cutest) Geographer: baby Amelia!

Research

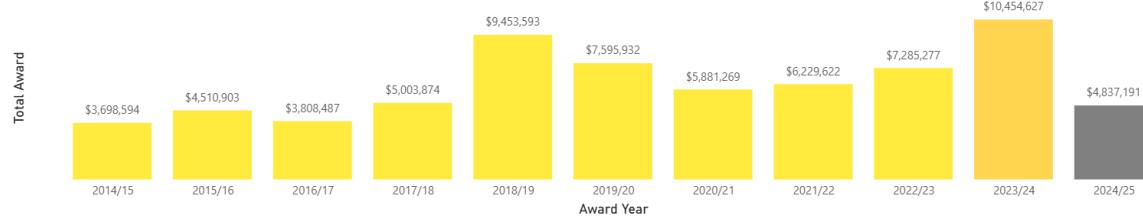


Figure 1: Total research funding (\$) awarded to GEM faculty members aggregated by award year. The data for the 2024/25 award year is incomplete; it ends Mar 6, 2024.

Research led by faculty members in GEM continues to be highly successful at attracting external funding, with almost \$5 million received up to March 6th 2025 (Figure 1). For the past decade, GEM has consistently been the largest recipient of external research funding in the Faculty of

Environment in terms of absolute research dollars and funding 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 3 SSHRC, 3 NSERC, and 14 OGS awards. An MCC student was selected for the KEEN entrance scholarship and one GEM graduate student received the Caivan scholarship. The new standalone research graduate programs (Master's and PhD) will launch in fall 2025, following the dissolution of the joint program with WLU.

Table 1: Graduate admissions and enrolment numbers for the 2024-25 academic year.

2024-25	Masters GEM	MCC/GDip	PhD	Total
New admits	27	21/15	16	79
Current enrolment	86	36/16	80	218
Degrees awarded	22	46/10	9	87

Undergraduate – Brandon Rodenhurst continues in the role of Aviation Programs Manager, jointly appointed with the Faculty of Science to manage their Science and Aviation program . Brandon is leading several important initiatives designed to make the program even more competitive and beneficial for future students. These include striking a Program Advisory Committee containing independent advisors from the aviation industry, improving the throughput of students to expedite the completion of their flight training, and leading the curriculum committee who are spearheading the development of three new Aviation electives in 2025-26. Erin O'Connell serves as Associate Chair, Undergraduate studies for GEM and Geomatics plans. Emily Beilby is serving 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 2024-25 academic year.

2024-25	GEM	Geomatics	CEC	Aviation	Joint degree	Total
First year admits	82	112	14	54	2	264
Current enrolment	336	289	46	226	5	898
Majors awarded	65	42	NA	24	2	133

In total, across all years and plans, there are close to 900 undergraduate students enrolled in GEM programs. These numbers represent sustained high demand for Geography education and GEM's commitment to growth.

Outreach and Awareness

The Department's Committee on Undergraduate Recruitment (CUR) continues to conduct significant outreach to engage high school students and teachers in Geography education. Supported by staff from the Dean's office and supervised by faculty members Grant Gunn and Helena Shilomboleni (49% GEM, 51% SERS), co-op students Sara Enns, Veneeta Paray, Mira Cortes and Kirsty Lewis delivered 30 outreach roadshows to high schools in Waterloo region, and beyond. More than 700 students were engaged in hands-on university-level activities on topics connected to their current leaning in class. These roadshows focused on the application of environmental science at all levels, connecting learning to their classroom, homelife, and future careers. The activities were developed with the goal to introduce new topics to students, provide the opportunity to learn more about geography and related disciplines, and to engage students in sustainable practices.

Curriculum development

A comprehensive review of the GEM undergraduate curriculum was launched in January 2025, with the first phase of changes expected to be approved in fall 2025 and available to students starting fall 2026. Four subcommittees have been formed, with each one focused on a specific thematic subdiscipline that collectively represent the major areas of expertise among GEM's faculty members (Climate Change, Earth Systems Science, Economy and Society and Geomatics). Student representatives on each subcommittee. The main goals of the review are to maximize alignment of course offerings with current student and employer demands, to right-size the curriculum for our current teaching resources and enrolment trends, to improve the quality and continuity of experiential learning opportunities, and to deepen academic connections between GEM and other units in Environment and across campus.

Administration

Contributions from GEM faculty 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. In January 2025, Wesley van Wychen took over from Dan Scott as the Director of the Master of Climate Change program, and GEM's two climate change diploma programs. 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 and President of the Canadian Association of Geographers. 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.