

Final Assessment Report

Geography – Joint with WLU (MA, MES, MSc, PhD)

February 2025

Executive Summary

External reviewers found that the Geography programs (MA, MES, MSc, PhD) joint with Wilfrid Laurier University (WLU) delivered by the Department of Geography and Environmental Management (GEM) were in good standing.

“Both institutions are well suited to continue to host excellent graduate programs in Geography and are poised to continue this tradition. The Joint Program was an exemplar of Geography graduate education and multiple generations of well-trained geographers continue to populate geography and related programs at universities across Canada and throughout the world. They have been key contributors to government, consulting, industry and other forms of education. Both Departments have given thought to a transition period to facilitate dissolution, and to what the individual programs must address to transition to independence.”

Following discussions at a retreat held in December 2022, a decision was made by faculty from both universities to dissolve the joint program after over thirty years of operation, since the two units have grown considerably independent of each other, and institutional priorities and infrastructural frictions have challenged the cohesion and operation of the joint program. External reviewers were informed of such decision and conducted the review with this decision in mind. The dissolution is set to be effective Fall 2025.

A total of 30 recommendations were provided by the reviewers, four of which address the joint institutions, and 26 focused on the UW program. Recommendations can be grouped into considerations post the dissolution for both institutions, as well as the following overarching topics specific to UW: program and course offerings, research discussion and socialization opportunities, graduate program planning at the Faculty level, student funding, distribution of the Dean’s Doctoral Initiative (DDI), Communication of Program Information, and Teaching Assistantships. In response, the program created a plan outlining the specific actions proposed to address each recommendation as well as a timeline for implementation. The next cyclical review for this program is scheduled for 2028-2029.

Enrollment over the past three years

	MA	MES	MSc	PhD
2024-2025 (CURRENT YR)	7	12	35	70
2023-2024 (LAST YR)	7	19	38	68
2022-2023 (THREE YRS)	2	23	40	71

*Based on Active Student extract from Quest on February 5, 2025.

Background

In accordance with the University of Waterloo's Institutional Quality Assurance Process (IQAP), this final assessment report provides a synthesis of the external evaluation and the internal response of the Geography programs (MA, MES, MSc, PhD) joint with Wilfrid Laurier University (WLU) delivered by the Department of Geography and Environmental Management (GEM). A self-study (Volume I, II, III) was submitted to the Associate Vice-President, Graduate Studies and Postdoctoral Affairs on January 10, 2024. The self-study (Volume I) presented the program descriptions and learning outcomes, an analytical assessment of the programs, including the data collected from a student survey, along with the standard data package prepared by the Office of Institutional Analysis & Planning (IAP). The CVs for each faculty member with a key role in the delivery of the program(s) were included in Volume II of the self-study.

From Volume III, two arm's-length external reviewers were selected by the Associate Vice-President, Graduate Studies and Postdoctoral Affairs: Professor/Associate Professor Peter Keller, Department of Geography, Simon Fraser University; and Professor William Gough, Department of Physical and Environmental Sciences, University of Toronto.

Reviewers appraised the self-study documentation and conducted a site visit to the University on March 4-8, 2024. An internal reviewer from the University of Waterloo, Associate Professor Laura J. Gray, Department of Music, was selected to accompany the external reviewers. The visit included interviews with the Associate Vice-President, Faculty Planning & Policy (on behalf of the Vice-President, Academic & Provost); Associate Vice-President, Graduate Studies and Postdoctoral Affairs; Dean of the Faculty of Environment; Faculty Associate Dean of Graduate Studies; Chair of the Department, WLU program leadership counterparts, as well as faculty members, staff and current graduate students. The Review Team also had an opportunity to meet with representatives from the library.

Following the site visit, the external reviewers submitted a report on their findings, with recommendations. Subsequently, the program responded to each recommendation and outlined a plan for implementation of the recommendations. Finally, the Dean responded to the external reviewers' recommendations, and endorsed the plans outlined by the program.

This final assessment report is based on information extracted, in many cases verbatim, from the self-study, the external reviewers' report, the program response and the Dean's response.

Program Characteristics

Master of Arts (MA)

The MA is for those students interested in Human Geography or Environmental and Resource Management or societal applications of Geomatics. There are two streams: thesis and research paper. In addition to two required courses (700 and one 600 level foundations course), thesis students choose two courses, and research paper students choose four courses that complement the student's graduate research field.

Master of Environmental Studies (MES)

The MES is for those students interested in Environmental and Resource Management or some aspects of Human Geography or environmental applications of Geomatics. There are two streams: thesis and research paper. In addition to two required courses (700 and one 600 level foundations course), thesis students choose two elective courses, and research paper students choose four elective courses that complement the student's graduate research field.

Master of Science (MSc)

The MSc is for those students interested in the natural science sub-discipline of Geography, Environmental Science (earth surface processes), and the technical and scientific aspects of the field of Geomatics. Successful applicants normally have a BSc degree, and must demonstrate that they have the necessary science background to pursue graduate work in their field of specialization.

Students specializing in Environmental Science enroll in GEOG 700, GEOG 640, and two GEOG courses that complement the student's graduate research field. Students specializing in Geomatics enroll in GEOG 700, GEOG 600, and two GEOG courses that complement the student's graduate research field.

PhD Program

The PhD program requires:

- one research foundations course selected from GEOG 600, GEOG 620, GEOG 640, GEOG 660;
- GEOG 800; additional coursework may be assigned subject to individual needs;
- successful completion of a comprehensive examination by the end of the fourth term;
- a thesis proposal that will be approved by their Supervisor and Comprehensive Examining Committee, normally before the end of the second year;

- presentation and successful defence of a thesis, based on original research, carried out under the direct supervision of a W-LGPIG faculty member.

Summary of Strengths, Challenges and Weaknesses based on Self-Study

Strengths

- Positive comments from reviewers in past cyclical reviews: 1993, 2000, 2007, 2014.
- Shared core courses: 700/800 (UW+WLU), 600 (UW), 620 (WLU), 640 (UW), 660 (WLU).
- Up to 2019, there was an increasingly variable offering of elective courses each year. The 2019 curriculum retreat identified and refined a list of key elective courses that we could deliver consistently each year.
- Students benefit from streamlined access to a greater diversity of courses offered in both departments through institutional agreement.
- W-LGPIG: larger and potentially more diverse pool of students to form a network/community; larger number of geography faculty experts available to comprise student research committees (master's and doctoral).

Challenges

- In practice, the streamlined access to courses between institutions suffers from delays in numerous levels of administrative approval at each institution, and subsequent problems getting students registered and accessing online course content in a timely fashion. Bureaucratic challenges are a significant burden for administrators and, more importantly students. This includes course registration and access to learning platforms. This is the major factor that undermines student satisfaction, to significant disadvantage to the W-LGPIG.
- Communication between all levels of administrative units at the two institutions continues to be a major challenge in running a responsive and efficient program.
- Institutional pressures mounting to collaborate within each institution rather than between institutions:
 - UW: opportunities for programming efficiencies with other units within Faculty (service courses, for example).
 - UW/WLU: pressure for innovation and development of new professional graduate programs.

- WLU: new faculty home with internal institutional pressures, particularly financial (for example launch of new Environmental Data Analytics (EDA) field at WLU only). These changes could lead to increased competition between institutions.
- A decline in the full-time tenure-track faculty complement at WLU, a result of several recent retirements and departures, has challenged the consistent delivery of graduate courses (e.g., courses often serviced by individuals on a limited-term assignment).
- Services and resources across the two universities are not joint (athletic facilities, career events, writing centers, and alumni access), leading to confusion and dissatisfaction among students at the two institutions.

Weaknesses

- As a result of the COVID-19 pandemic, all students worked remotely during the periods when public health directives mandated work from home regulations be implemented. In response, faculty, staff, and graduate student needs related are shifting and there is a need to re-configure workspace to satisfy new needs. How to best coordinate this with broader pressures on space at each university remains a challenge.
- Recently, opportunities for deeper interaction between UW and WLU have been missing. This is likely a combination of the pandemic (including zoom fatigue), lack of leadership and engagement from the joint program director and faculty on both sides, and a general drift away from a joint program and more toward internal collaboration with other units (particularly at UW). The joint program has not been a priority of the two partner institutions, and there are complexities in marketing a joint program: for example, which institution takes the lead and how are marketing resources directed in a manner that promotes and protects its jointness. Having to receive two independent sets of administrative approvals for all changes related to the joint program introduces a level of time-consuming bureaucracy that causes frustration and, more importantly, reduces the ability of each individual program to be agile and to innovate and meet institutional demands. This is most acutely felt in the process of revising courses and the curriculum, where a plethora of institution-specific constraints must be considered and accommodated at each institution, which has limited our ability to offer the curriculum that our students need to train as successful scholars. Significant and varying pressures from within both institutions have led to increasing tensions in recent years:
 - Pressures to maintain minimum student enrolment numbers in courses (UW)

- Inaccessibility of institutionally restricted credentials to some students (e.g., Water program at UW, EDA at WLU).
- The intended collaborative delivery of program is showing signs of competitive delivery, leading to overlap in course content in some years, or lack of coverage in others.
- Teaching assignments are done at different lead times at each institution owing to the difference of a unionized vs non-unionized bargaining agreement.
- Real and/or perceived lack of consultation on important developments and issues between institutions; for example, the establishment of the EDA program at WLU and, much longer ago, the Master of Climate Change program at UW, both of which exclude students from the other institution.
- A recent survey of UW students, and general anecdotal evidence from students at both institutions, indicates that they are generally unaware of the jointness of the program and how they may benefit.
- In practice, joint thesis committee membership is not the norm, with the exception of the human geography sub-discipline. In addition, thesis committee regulations at WLU now demand more Laurier-based committee members.
- Students have reported observing different levels of academic performance between students at the two institutions (for example in shared classes).
- The program is considered by students to be large in the sense that there is little cohesion or sense of jointness of purpose beyond the shared courses.
- The W-LGPIG website is consistently maligned as being difficult to navigate and lacking current information. A challenge has been that administration of the website, and computer permissions required to access and edit content, switches between institutions with the change of directorship of the program.

Summary of Key Findings from the External Reviewers

“The Geography Department at the University of Waterloo has an excellent reputation for nationally and internationally acclaimed scholarship, and for graduating Master and PhD students that meet market demands including many PhD students who have found employment as university faculty. The Department has a strong record of attracting research funding.

The Department is supportive of the dissolution of the Joint program. As yet, relatively few changes are being proposed to a program that has served the department well. Fiscal, among other, constraints have led the Department to collaborate more within the demonstrated

expertise of other University of Waterloo departments both within the hosting Faculty of Environment and beyond. As the field of Geography and, in particular, the study of the environment has evolved, more faculty outside of Geography have been drawn to critical geographic foci such as sustainability, climate change, and geomatics, and are well positioned to collaborate with their pioneering Geography colleagues. The Department notes that it already has good collaborative arrangements and agreements, for example with Engineering, but that collaboration notably with Arts requires further work.”

Program Response to External Reviewers’ Recommendations

--JOINT RECOMMENDATIONS FOR BOTH INSTITUTIONS--

- 1. Program Distinction:** Continue to develop post Joint program distinctiveness capitalizing on within institution opportunities.

UW Program Response

Given that the Joint program will be dissolved, and a revised graduate program put in place for the 2025/2026 academic year, we will be focusing on establishing and nurturing better connections at the graduate level within the University of Waterloo Faculty of Environment and across UW in general. We will still maintain strong connections between WLU and UW, and expect that for faculty with complementary research programs, this type of exchange will be both natural and easy to facilitate using the existing faculty cross-appointment process.

UW Dean’s Response

The Faculty of Environment at the University of Waterloo is home to five professional masters, seven research masters, two Type 3 graduate diploma, one Type 2 graduate diploma and four PhD plans (these counts exclude collaborative plan options in water and sustainable aviation). Only four of these plans – the MA, MES, MSc and PhD in Geography and Environmental Management – are part of the joint program, the existing three graduate plans in climate change are housed within the Department of Geography and Environmental Management but are not part of the joint program. This diversity of plans has spawned far too many small course offerings, and we are in the process of rationalizing course offerings across plans and focusing on our core areas of strength (climate change, future cities, resources and social sustainability), leading to stronger, more defined plans in the future.

- 2. Sense of Community:** Intentional action plan to foster post pandemic sense of community at both institutions.

UW Program Response

The launch of the revised graduate program in Geography will provide a platform for engaging students and faculty through an increased sense of ownership over the program, its

components, and outcomes. We will have a program that is ours to invest in and grow. This change, while seemingly administrative, will provide a strong sense of momentum and reinforce collegiality around both the Department of Geography and Environmental Management, and the Faculty of Environment. Already, through the process of making modifications to the program, we have reached out to countless stakeholders across the Department and Faculty, establishing and nurturing relationships that will enable us to bring together faculty and students via the revised program. This will include such items as easier cross-listing of courses offered by different units within the Faculty of Environment, providing our students with increased breadth of offerings to better tailor their educational experience to their own personal learning objectives.

With our revised graduate program, we are implementing a graduate ‘Homeroom’ course that will act as a cohort building opportunity for each entering cohort of students. This course will serve as a way to communicate both the scholarly pillars of Geography as a discipline, as well as develop the social and cultural aspects of the department. This course is a two-term (September to April) course, that culminates in a research proposal colloquium/celebration open to the entire department.

UW Dean’s Response

I support the approach outlined by the Waterloo program. The end of the joint program will likely help with cohort-building, even beyond the recent burst of engagement that consultations associated with this initiative brought. Having students with differential access to campus services depending on their home campus was less than ideal. The One Environment approach will allow more targeted engagement with our Environment Graduate Students Association (EGSA), which includes all but Planning students.

- 3. Colloquium Series:** Colloquium series at both institutions to foster bi-institutional community and connections with geographic community more widely – we recommend that the two Departments consider organizing and delivering such a colloquium jointly perhaps by taking responsibility for alternative colloquium time slots.

UW Program Response

As part of our refreshed graduate program, UW will have a spring colloquium component where first-year student cohorts present their planned research to the UW community. At this point we do not have plans to formally share a colloquium with WLU. Certainly, there will be opportunities to cross-advertise specific presentations from research groups or visiting researchers, however cross-institutional organization was one of the main challenges of the joint program and we do not plan to reinstitute a formal cross-institution colloquium.

UW Dean’s Response

Given the size and strength of Waterloo's multiple graduate programs in Environment, a Waterloo-focused Spring colloquium is sensible. Focusing on encouraging graduate students to present at the Canadian Association of Geographers Ontario (CAGOnt) annual meetings as a venue for interaction across Geography graduate programs specifically is a reasonable approach for networking beyond Waterloo programs.

4. **Cross-institutional Courses:** Develop processes to ease the administrative overhead in cross-institutional accessing of graduate courses, and cross-institutional availability for faculty membership on student supervisory committees.

UW Program Response

The existing OVGS (Ontario Visiting Graduate Student) process is well-established and straightforward for staff to process students taking graduate courses at other Ontario institutions. Similarly, adjunct appointment of faculty within other departments, schools, and universities is well-established and a very straightforward procedure, requiring the completion of a one-page form, appointee CV, and then graduate chair approval. Currently GEM has 49 faculty members as adjunct appointments from external departments across Ontario, Canada, and international universities, so this process is quite common, and the procedure is well-established administratively.

UW Dean's Response

I agree, existing arrangements for graduate student registration on other campuses via OVGS and currently in place adjunct appointment processes do not pose an administrative burden.

--RECOMMENDATIONS SPECIFIC TO UWATERLOO PROGRAM--

Recommendations on Program and Course Offerings

5. **Distinction Between Research and Course-Based Programs:** Clearly differentiate research-based and course-based graduate programming.

UW Program Response

Thank you for this comment, it illustrates that there is some confusion around the differences in our thesis and MRP (Master's Research Paper) programs. Marketing materials need to be updated to reflect that all of our existing Master's programs in Geography are research programs: one has a thesis milestone, one has a research paper milestone with additional course work requirements. GEM does not currently offer a course-based masters in Geography. The MCC is the only course-based program offered by GEM, which is out of scope for this review.

UW Dean's Response

While both thesis and MRP stream students have research elements, there are clear distinctions in the number of required courses, funding packages, and the expectations for independent research. The Faculty and department webpages clearly distinguish funding packages on the basis of “research (thesis)” and “non-thesis or professional” masters programs, but also lump the MRP stream in with “Research-based master's degrees” with the “Masters Research Paper degree in Geography” mentioned on the department webpage, with a link to the guidelines for the paper itself but no easily-found clarity on expectations on the number of courses or length of program. Clarity on the number of courses and normal length of program is found on the joint program website. I agree with the reviewers' recommendation to make these distinctions clearer in outward-facing materials.

6. **Project-based Master Program as a Fallback Option:** Only allow the project-based Master program as a fallback option for students already enrolled in the research-based program, assuming this option is supported by Quality Council

UW Program Response

This is traditionally how we have run/communicated the purpose of the MRP, however over the past decade, this has drifted towards permitting direct entry, as there is technically nothing in our admission regulations to prevent students enrolling directly in the MRP stream. In reflecting upon the changing nature of graduate studies in Canada, we feel that it is important to maintain the MRP as a direct-entry program. Many students are increasingly choosing to not engage in a thesis program and without an option for them, we risk losing many students from our program. With the revision of the graduate program, we intend to reconceptualize the MRP as a direct-entry program and move away from the historic positioning of this as a ‘remedial’ program for students that fall out of the thesis-based program. This is in keeping with modern trends in higher education towards shorter, non-thesis-based graduate programs. We risk losing students if we do not have a shorter duration, less thesis-focused program.

UW Dean's Response

Presumably, the reviewers mean the MRP stream when they refer to a “project-based Master's program”. Currently, student apply directly to the MES, MA or MSc plan, all of which require an advisor. The MES and MA program support both thesis and research paper streams; the MSc is only available as a thesis program. While some students do switch to the MRP stream as a fallback, others do choose it at the outset. I support maintaining and improving the MRP stream as an alternate pathway to the thesis stream, and – as per Recommendation 1 – encourage more clarity on this in outward-facing materials.

- 7. Redesign 700 / 800 – Focus on Research Development and Professional Skills:** Redesign 700 / 800 with primary focus on design, delivery and communication of research as well as development of soft skills to be jointly delivered to all incoming Master and PhD students, clearly articulating differences in expectation.

UW Program Response

Recommendations 7 and 8 are a combined request for changes to the focus of the cohort-building course. We have reconceptualized this course as ‘Geography Homeroom’, a course that will run for the first two terms (Fall and Winter), and covering these specific topics identified by the review committee. The main learning outcome is to train students in the professional skills required to design, conduct and disseminate research in their chosen field, and guidance on how to navigate a career as an academic researcher. Geography Homeroom is used as a shell to meet cohort building, and also general research training/soft skills components of the program. Many of these elements are already contained in 700/800 or available as centrally designed UW modules (research ethics, Indigenization) and can be adapted to the new course. Additionally, by extending the course to two terms in length (September-April), we fit the content delivered to a time horizon that fits student progress through the program. For example, students now can work in the Geography Homeroom course to prepare a thesis proposal for the end of their second term of study, compared to completing this at the end of the first term of study.

UW Dean’s Response

I agree with the program’s design of “Geography Homeroom” to address Recommendation 7.

- 8. Redesign 700 / 800 – Focus on Different Aspects of Research Process and Management:** That a revised 700 / 800 include topics such as research design, proposal writing, knowledge mobilization, research budgeting and accounting, ethics approval, field work design, etc.

UW Program Response

Please see response to #7.

UW Dean’s Response

I agree with the program response.

- 9. Redesign 700 / 800 – Ensure Distinction Between Undergraduate and Graduate Offering:** That a revised 700 / 800 be sufficiently different in educational goals, contents, design and deliverables from equivalent offerings at the undergraduate level to ensure that undergraduates staying on to do graduate studies at the University of Waterloo recognize and value the difference.

UW Program Response

This comment comes as a bit of a surprise. In consultation with instructors of our undergraduate research methods courses, we have determined that there is a significant difference in what is instructed to second-year undergraduate students compared to graduate students. We do not feel that there is overlap between these courses.

UW Dean's Response

I agree that graduate research methods courses are already sufficiently distinct from undergraduate offerings in terms of educational goals, content, design and deliverables, and expect this to continue with the introduction of "Geography Homeroom".

- 10. Course Review:** Review all existing remaining required and elective graduate courses with an eye to eliminating those that have not been offered for some time. Remaining should be a small suite of courses that 1) focus on methodologies, 2) meet the MCC and possibly a future graduate diploma in climate change, 3) offer generic seminar shells to deliver customized courses in cognate areas of the discipline ("Seminar in Human Geography", Seminar in Physical Geography, ..., perhaps re-thought versions of the old 620, 640, 660, ...), 4) courses required for the course based MCC, and 5) paying attention to demand for courses outside the Department within the Faculty and beyond.

UW Program Response

Our proposed course structure meets each of these recommendations. We have culled those courses not offered in the past ~4 years, have implemented core courses with a focus on methodologies, and generic shells for human/physical geography (breadth courses). We will articulate more clearly on the program website and in student communications, the other available courses across campus (and at WLU) that could also be appropriate electives. These tasks have been completed as part of our year-long consultation around the redevelopment of our graduate program and have received notable input from all stakeholders. Comments re: MCC are not relevant here.

UW Dean's Response

The reviewers understandably confuse the MA, MES and MSc in Geography, which is offered as part of the Waterloo-Laurier Joint Program in Geography, with the Master of Climate Change (MCC) degree offered in the Department of Geography and Environmental Management at Waterloo. Many, but not all, of the courses purpose-built for the MCC are available to joint program students via cross-list. The move away from a joint program to a standalone UW program will enhance agility in culling course offerings. However, focusing only on methods courses and "generic shells" will not meet the needs of the MRP stream or most thesis-stream students.

- 11. Fostering Knowledge Sharing and Critical Thinking in Course Design:** That these courses be viewed primarily as sharing and discussion of knowledge and advancement of critical thinking, including evaluation components that demonstrate capacity for synthesis and independent thinking.

UW Program Response

We agree with the reviewers' premise that graduate-level courses should focus on higher order thinking; however, it is not clear what specific actions are being requested with this comment. The learning objectives of our program focus extensively on developing critical thinking and synthesis skills and opportunities for achieving these objectives are woven throughout the program. Following the reviewers' suggestion, opportunities will be explored to deepen these principles within the modified program.

UW Dean's Response

The reviewers' recommendation would perhaps be a good one for PhD and perhaps thesis-based master's programs, but would not serve the needs of a lower research-intensity format such as the MRP stream of the programs.

- 12. Mechanisms for Cross-Institutional Course Access:** That WLU GES and UW GEM collaborate on ensuring mechanisms for graduate students to access each other's graduate courses with minimal bureaucratic fuss or additional cost to the students.

UW Program Response

The OVGS system works very well and is essentially what was already in place to ensure students can take courses at each university. Administrative support staff are already well versed in the OVGS system given the Joint Program.

UW Dean's Response

I agree with the program response – the existing OVGS mechanism is more than adequate.

- 13. Undergraduate Courses Held with Graduate Courses:** That joint senior undergraduate / graduate courses be encouraged as long as differences in expectation are clearly articulated.

UW Program Response

As part of our year-long evaluation of our graduate program, we are developing a set of criteria to guide when a course can be jointly held as UG/G. This will include specific expectations around assessment and structure to ensure differentiation between the UG and G versions.

UW Dean's Response

I support the program's approach to this recommendation.

Recommendations on Research Discussion and Socialization Opportunities

- 14. Bi-weekly Colloquium on Contemporary Topics and Current Research:** That the Department develop a bi-weekly colloquium series jointly organized by faculty and graduate students (perhaps as part of delivery of 700/800) that attracts speaker of general interest covering contemporary topics and current research.

UW Program Response

As part of the new Geography Homeroom (700/800 replacement), there will be the opportunity to use class time to host a speaker of general interest. This will be done on a case-by-case basis, as opportunity arises. In the recent past, there has been a monthly Faculty of Environment lecture series, and currently there is some interest in revitalizing this post-pandemic.

UW Dean's Response

I support the approach to focus on the Faculty of Environment for a lecture series, perhaps with the Environment Graduate Students Association (EGSA).

- 15. Bi-weekly Colloquium – Joint with WLU:** That the Department consider organizing and delivering such a colloquium jointly with GES at Wilfrid Laurier perhaps by taking responsibility for alternative colloquium time slots.

UW Program Response

Given the logistical challenges with organizing two separate institutional schedules, we will address this comment by continuing to ensure sharing of relevant talks across campus and at WLU and encouraging participation. We already have speakers coming to the Climate Institute, Water Institute (and at WLU the Cold Regions Research Centre). We encourage faculty and students to attend these colloquia, as they already are run with significant support from GEM and GES faculty.

UW Dean's Response

The existing Canadian Association of Geographers, Ontario Division (CAGOnt) annual conference serves the needs of collaboration on research dissemination across institutional boundaries. As the program notes, both WLU and UW are already well-served with speaker series hosted by centres and institutes on both campuses.

- 16. Bi-weekly Colloquium – Opportunities for Junior, New Faculty and Doctoral Students:** That such a colloquium series be considered as a forum not only to bring in invited guest speakers from the outside, but also allow junior and other newly hired faculty and doctoral students

close to completion to share their insights as well as organizing panels on contemporary themes.

UW Program Response

This recommendation aligns with efforts and interest at the Faculty of Environment and EGSA (Environment Graduate Students Association) level to develop a faculty-wide speaker series.

UW Dean's Response

As above – between the efforts of the EGSA and the centres and institutes, this already exists.

- 17. Bi-weekly Colloquium – Socialization Opportunities:** That such a colloquium series capitalize on socialization opportunities.

UW Program Response

We agree that a colloquium series will create socialization opportunities, and we expect that this would occur at the Faculty of Environment level. Additionally, our new 8-month Geography Homeroom course will also socialization opportunities, both with new cohort and with current graduate students and faculty.

UW Dean's Response

I agree with the program response.

Recommendations on Graduate Program Planning at the Faculty Level

- 18. Ensuring Collaborative and Complementary Graduate Program Planning:** Conversations about graduate programming at the Faculty level should be undertaken in full consultation with the academic units within the Faculty, and that new programming be driven by demonstrated excellence, market opportunities, and efficiencies, thereby complementing and not competing with ongoing programming at the unit level.

UW Program Response

Throughout our consultation with faculty and students, we have placed a focus on leveraging existing courses and instructional capacity across the Faculty of Environment. Our revised program has a major focus on sharing graduate courses, especially electives, across the various units within the Faculty of Environment.

UW Dean's Response

I agree with the program response; indeed, the end of the Waterloo-Laurier Joint Program in Geography will allow greater efficiencies across the Faculty of Environment under our Environment 2035 initiatives.

19. Aligning Faculty-Level Graduate Programming with Departmental Workload

Considerations: Faculty implement any Faculty level graduate programming with a clear understanding of the downstream impact on, and respect for, faculty workload at the department level.

UW Program Response

This is already in progress and will intensify over the next 12-18 months. We have been working for well over a year on revising the graduate program with an eye to gaining operational efficiencies through increased sharing of courses between units.

UW Dean's Response

This seems to be outside the scope of this review; faculty workload is governed by employment agreements.

20. Advancing EDI through Strategic Faculty Complement Planning: Develop a complement plan that intentionally advances EDI goals and to align faculty complement more closely with that of representation of students, and Canadian society more generally.

UW Program Response

We appreciate the reviewers' suggestion to develop a plan to advance EDI goals and improve the representation of equity-deserving groups within our faculty complement, to better mirror the visible and invisible diversity among our students and the general population. This certainly aligns with the goals of GEM, the Faculty of Environment and the University as a whole. GEM plays an active role in existing plans at the Faculty and University level pertaining to faculty diversity; for example, recent cluster hiring campaigns prioritizing Black and Indigenous colleagues, and two Tier 1 Canada Research Chair positions for researchers identifying as women. The reality at Waterloo is that departmental budgets, and thus also all hiring, is controlled by the Provost and the Dean of Environment and so GEM has few opportunities to be a change leader. Instead, the department works within the existing system to advance EDI goals in hiring; for example, by ensuring equity on hiring committees, requiring that all members of the committee have completed EDI and unconscious bias training, and striving for an equitable and diverse shortlist of candidates wherever possible.

UW Dean's Response

Under the current fiscal realities, the Faculty of Environment will not be embarking on significant hires. UW as a whole has implemented equity hires, including black and indigenous

cluster hires, and has embarked on targeted CRC hires to meet equity targets. The Faculty gained valuable colleagues through these initiatives.

Recommendations on Graduate Student Funding

- 21. Competitive Graduate Funding:** Efforts and Resources be invested to explore non-conventional funding to support the research mission and allow faculty to generate minimum and/or competitive graduate funding packages.

UW Program Response

GEM will continue to explore graduate level work-integrated learning opportunities, building on UWaterloo's vast experience in co-operative education. Evaluating how these work experiences can best advance student professional development and funding opportunities, while also ensuring timely completion of graduate research, is critical and may vary from student to student. The MCC program is currently integrating the Waterloo GradWIL framework for its internship program, and we will use that experience to inform potential future changes to the Geography research graduate programs.

UW Dean's Response

It is not clear to me what reviewers mean by "non-conventional funding to support the research mission" – faculty already seek funding from the full range of funding opportunities available including grants, contracts and Mitacs. The PhD, MA, MES and MSc in Geography currently do not have a co-op stream, and the feasibility of such a stream for thesis-based graduate programs is not clear.

- 22. Review of Minimum Funding Policies:** Department to review its own minimum funding policies for doctoral and research-based Master students and strive to do its best to provide a "living wage".

UW Program Response

We note that the hourly wage rates for graduate students set by UW are already significantly higher than those of the living wage set by the Ontario Living Wage Network. Overall minimum compensation packages for doctoral and masters students are also set at the University level, and, given the hourly requirements to earn these funds, already greatly exceed an annual living wage for our region, as set by the Ontario Living Wage Network. There are ongoing discussions at the University level about how to better support graduate students financially, both in terms of increased funding packages, and through more flexible arrangements to allow students to hold multiple types of funding (teaching assistantships, research assistantships, scholarships).

UW Dean's Response

It is indeed challenging for graduate students to live on the minimum funding guaranteed by the University of Waterloo. As noted by the department, the hourly rate for TA and RA work at Waterloo are well above those identified as “living wages” – currently \$21.30/hour in our region. UW GRA rates are \$45.74 and \$54.42/hour (plus benefits and vacation pay) for masters and doctoral students respectively. Additionally, students are able to hold GTAs, which are valued at \$47.97/hour (plus vacation pay) and further supplemented by scholarships.

- 23. Funding for International Students:** Senior leadership at the University explore more funding opportunities for international students to offset their inability to draw on tri-council awards and selective provincial funds.

UW Program Response

UW already provides International Doctoral Student Awards (ISDA) to all accepted international doctoral students to offset the difference between international and domestic tuition. International Master's Award of Excellence (IMAE) are also available for master's students, but the number available is low, such that the majority of international Master's students in GEM are paying full international tuition with little additional financial support. GEM will continue to advocate for improved funding packages that make it more feasible for international students to study at Waterloo; however, we note that these policies relate directly to decisions about provincial grant funding for visa students that are outside of GEM's control.

UW Dean's Response

I agree with the program's response.

Recommendations on the Distribution of the Dean's Doctoral Initiative (DDI)

- 24. Clearer Policies and Procedures for DDI:** Dean of Graduate Studies to develop policies and Dean's Doctoral Initiative (DDI) procedures to ensure that DDIs go to those where the investment is most equitable, fair and in the long-term interest of faculty and the University of Waterloo.

UW Program Response

GEM has no direct control over the DDI program but will continue to advocate for improved funding for our graduate students at the Faculty-level. Over the past decade, the DDI program has largely achieved its goals of providing a funding backstop (in the form of TA positions) to allow faculty members to continue supporting doctoral students while operating in a precarious landscape for obtaining research grants. However, DDI is not without its challenges, as alluded to in the reviewers' comment. The DDI program is continuing in the

2024/25 academic year at reduced capacity: support is available for up to 10 domestic and 10 international students who are selected by a review committee. Our understanding is that the program is currently under review by the Dean of Environment and a decision about whether it will continue, and in what form, will be taken in the coming months.

UW Dean's Response

The DDI program was never intended as a substitute for funds from supervisors. The program was put into place to allow prospective supervisors to accept doctoral students without four years of future funding in hand. It can be argued that devoting such a large share of the Faculty's GTA budget to meet doctoral funding guarantees is neither fair nor equitable when we consider masters students.

- 25. Establishing Accountability for DDI Utilization in Research Funding:** That faculty be encouraged / expected to pay DDI's back should they secure research funding after taking advantage of a DDI to build a financial offer.

UW Program Response

As described in response to recommendation 24, the DDI initiative is currently under review by the Dean's office, so any policies or procedures related to this will need to be evaluated in the future.

UW Dean's Response

There is no expectation that faculty "owe" the Dean's office for a DDI, but the expectation that faculty secure research funding to support students that were admitted with the DDI as a guarantee already exists. The evolution of faculty members viewing DDI-funded students as students for which they have little incentive to secure other funding has led to the current "under review" status of the initiative.

Recommendations on the Program Infrastructure

- 26. Master's of Climate Change Program:** University of Waterloo, the Faculty of Environment and the Department should develop infrastructure to find suitable paid internships for the MCC program.

UW Program Response

Not applicable to the WLJPIG and so outside the scope of this review.

UW Dean's Response

I am unclear why the reviewers keep commenting on the MCC program, for which they were not provided documentation. In any case, the MCC coursework option's internship is already supported by GradWIL.

Recommendations on the Communication of Program Information

- 27. Development of a Communication Plan:** Department should co-create a communication plan with the graduate students as partners to address how the Department communicates with prospective and accepted graduate students.

UW Program Response

Much of the communication with prospective and accepted graduate students is coordinated at the Faculty level. For example, standard wording for acceptance letters is used across all units in the faculty, with changes discussed at Faculty-level Graduate Studies Council meetings. Mailing lists and program information webinars are managed in coordination with the Faculty of Environment's Graduate Studies Marketing and Recruitment Specialist. GEM will seek feedback on upcoming communication plans from current graduate students to assess any required updates.

UW Dean's Response

I agree with the program response.

- 28. Graduate Website/Handbook Design:** Students encourage careful design of a graduate website/handbook that offers primarily introduction and points of reference linking to relevant websites and resources for detail that is likely to change over time. We encourage that such a website/handbook be designed, preferably in close collaboration with the graduate students.

UW Program Response

With the dissolution of the WLJPIG, GEM will now have better control over communication and website management. A draft handbook is already in progress. We will request participation from current GEM graduate students on a committee to work on final development of a website for the revised GEM graduate program and the graduate handbook. We anticipate this occurring over the 2024-25 academic year so that both can be available in Fall 2025.

UW Dean's Response

I support the program's response to this.

Recommendations on Teaching Assistantships (TAships)

29. Onboarding and Training of Teaching Assistants: Department consult broadly to review existing teaching assistants training and onboarding efforts and revise or augment as appropriate.

UW Program Response

Teaching assistant training is currently administered at the Faculty level and mandatory sessions are included in the Environment orientation held each September. In their admission letters, students are also told of these mandatory training sessions. In addition, the Centre for Teaching Excellence has a range of TA training resources available to students and these links are shared with all students assigned to TA (<https://uwaterloo.ca/centre-for-teaching-excellence/ta-training>). GEM will further communicate the importance of completing this training in the department orientation sessions held in September of each year, will include this information in the graduate handbook, and will explore whether additional information/workshops on teaching assistant effectiveness should be added to the redesigned Geog 700/800 course. The GEM Associate Chair Graduate Studies reminds all instructors of the importance of TA onboarding and course-specific training at the start of each academic term when TA assignments are announced, and this practice will continue.

UW Dean's Response

I support the program's approach to this recommendation.

30. Explore Alternative TA Opportunities: We encourage the Department to explore alternatives, including potentially investing in under-qualified graduate students in the Department receiving the necessary training to qualify to TA areas where a shortage is consistent.

UW Program Response

In the Faculty of Environment, teaching assistant positions are included in graduate student funding packages making allocation of TA positions to specific students outside of the direct control of the Department. While GEM is responsible for TA assignments for its undergraduate courses, the pool of TAs is first determined by funding requirements to students, as determined at the time of their admission. Further TA allocation is occasionally necessary when demand for TAs exceeds the supply of students guaranteed TA funding in a given term, and this is managed by the Associate Dean, Graduate Studies at the Faculty level. GEM graduate staff aims to best match students guaranteed TA funding with the TA positions available in each term but is also often asked to place graduate students from other units in the faculty to fill positions in order to meet Faculty-level funding commitments. GEM remains committed to placing as many GEM graduate students as possible into TA positions given these constraints and will continue to advocate with the Associate Dean, Graduate Studies to

give priority to GEM graduate students, even those not requiring a TA position according to their funding package, for GEM undergraduate courses (particularly for those courses requiring TAs with specific technical skills like GIS and lab work).

UW Dean's Response

The allocation of Graduate Teaching Assistantships (GTAs) is largely governed by promises of GTAs in funding packages. As noted, the program does its best to match TA expertise with course offerings. There are some instances where there is a skills shortage stemming from the balance of graduate students to undergraduate students in these areas, both in Geography and other units (e.g. studio courses, upper year geomatics courses). It is not feasible to “train up” someone with no background in these skills to serve as a GTA; in these instances, we offer TA opportunities to undergraduate students who have these skills without compromising the funding guarantee given to graduate students.

Recommendations Not Selected for Implementation

Recommendation #3 and 15

As described above, we are choosing to not implement Recommendation #3 around developing a joint colloquium between UW and WLU. This type of joint requirement was a point of friction in the pre-existing joint graduate program and required significant overhead and administrative time to organize. There would also be questions about how a colloquium would connect to required courses, such as a Geography Homeroom, which has its own colloquium requirement. For example, are students required to attend a hypothetical joint WLU/UW colloquium? Will they be graded on attendance or other work attached to it? Even the synchronization of two different institutional calendars can be challenging, as was experienced during the recent years of the joint program. Rather than institute a formalized colloquium, we will continue to ensure good communication between the two departments in terms of sharing news of upcoming speakers or invited guests.

Recommendation #9

Our consultations revealed that the comment in Recommendation #9 is without basis and requires no action.

Recommendation #20

The portion of Recommendation #20 related to faculty hiring policies and funding is controlled by the Provost and Dean of Environment and therefore cannot be fully implemented by GEM.

Recommendations #22-25

We are unable to fully/partially implement several recommendations related to graduate student funding and DDIs because these policies are controlled at the Faculty and/or University level.

Recommendation #26

Applies to the MCC program and is outside the scope of this review.

Implementation Plan

	Recommendations	Proposed Actions	Responsibility for Leading and Resourcing (if applicable) the Actions	Timeline for addressing Recommendations
--JOINT RECOMMENDATIONS FOR BOTH INSTITUTIONS--				
1.	Program Distinction	Revise and obtain approval for refreshed graduate program	Graduate Program Committee	End of 2024, for launch Fall term 2025. Major modification was approved and program changes approved by Senate for launch in Fall 2025
2.	Sense of Community	We have conducted over a year worth of stakeholder consultation and surveys to support our actions in redesigning the graduate program. Sense of community/cohort building was identified as being best included as a central focus of the new mandatory Geography Homeroom course (Geog 700/800).	Graduate Program Committee Department Chair Associate Chair Graduate	Updated version of cohort-building course Geog 700/800 to be offered starting Fall 2025.
3.	Colloquium Series	Not implemented.	N/A	N/A
4.	Cross-institutional Courses	Systems to facilitate this are already in place, and are generally very effective and well-implemented, requiring minimal staff time.	N/A	Already in place.

--RECOMMENDATIONS SPECIFIC TO UWATERLOO PROGRAM--

Recommendations on Program and Course Offerings

5.	Distinction Between Research and Course-Based Programs	There was some confusion on the part of the reviewers in terms of the difference between our thesis-based and research project-based programs. We do not actually have course-based programming as part of this review. That being said, greater clarity can be provided on website materials and documentation as to the differences between the two masters programs. Note that PhD program is exclusively research-based.	Associate Chair Graduate and Graduate Administrator	As revised program is put into place for 2025 academic year.
6.	Project-based Master Program as a Fallback Option	This is already the case, however we are planning to increasing promotion of the research project-based program as a direct-entry program, given demand from students for a shorter, non-thesis masters program.	Associate Chair Graduate and Graduate Administrator	As revised program is put into place for 2025 academic year.
7.	Redesign 700 / 800 – Focus on Research Development and Professional Skills	As part of our year-long consultation on changes to our graduate program, extensive revisioning of 700/800 is occurring. This new Geography Homeroom course will implement these suggestions from the reviewers.	Graduate Program Committee, Associate Chair Graduate and Graduate Administrator	As revised program is put into place for 2025 academic year.
8.	Redesign 700 / 800 – Focus on Different Aspects of Research Process and Management	As part of our year-long consultation on changes to our graduate program, extensive revisioning of 700/800 is occurring. This new Geography Homeroom course will implement these suggestions from the reviewers.	Graduate Program Committee, Associate Chair Graduate and Graduate Administrator	As revised program is put into place for 2025 academic year.
9.	Redesign 700 / 800 – Ensure Distinction Between Undergraduate and Graduate Offering	In consultation with instructors of our undergraduate research methods courses, we have determined that there is a significant difference in what is instructed to second-year undergraduate students compared to graduate students.	N/A	N/A
10.	Course Review	As part of our year-long consultation on changes to our graduate program, we are evaluating all graduate courses offered by the department, ensuring that we remove those that have not been offered in some time, as well as looking to make stronger connections across the Faculty of Environment to share courses.	Graduate Program Committee, Associate Chair Graduate and Graduate Administrator	As revised program is put into place for 2025 academic year.
11.	Fostering Knowledge Sharing and Critical Thinking in Course Design	The learning objectives of our program focus extensively on developing critical thinking and synthesis skills and opportunities for achieving these objectives are woven throughout the program. Following the reviewers' suggestion,	Graduate Program Committee, Associate Chair Graduate and Graduate Administrator	As revised program is put into place for 2025 academic year.

		opportunities will be explored to deepen these principles within the modified program.		
12.	Mechanisms for Cross-Institutional Course Access	The OVGS system works very well and is essentially what was already in place to ensure students can take courses at each university. Administrative support staff are already well versed in the OVGS system given the Joint Program.	Associate Chair Graduate and Graduate Administrator	Ongoing
13.	Undergraduate Courses Held with Graduate Courses	As part of our year-long evaluation of our graduate program, we are developing a set of criteria to guide when a course can be jointly held as UG/G. This will include specific expectations around assessment and structure to ensure differentiation between the UG and G versions.	Graduate Program Committee, Associate Chair Graduate and Graduate Administrator	As revised program is put into place for 2025 academic year.

<u>Recommendations on Research Discussion and Socialization Opportunities</u>				
14.	Bi-weekly Colloquium on Contemporary Topics and Current Research	As part of the new Geography Homeroom (700/800 replacement), there will be the opportunity to use class time to host a speaker of general interest. This will be done on a case-by-case basis, as opportunity arises. In the recent past, there has been a monthly Faculty of Environment lecture series, and currently there is some interest in revitalizing this post-pandemic	Graduate Program Committee, Associate Chair Graduate and Graduate Administrator	As revised program is put into place for 2025 academic year.
15.	Bi-weekly Colloquium – Joint with WLU	Given the logistical challenges with organizing two separate institutional schedules, we will address this comment by continuing to ensure sharing of relevant talks across campus and at WLU and encouraging participation. We already have speakers coming to the Climate Institute, Water Institute (and at WLU the Cold Regions Research Centre). We encourage faculty and students to attend these colloquia, as they already are run with significant support from GEM and GES faculty.	N/A	N/A
16.	Bi-weekly Colloquium – Opportunities for Junior, New Faculty and Doctoral Students	Please see comments above. This recommendation aligns with efforts and interest at the Faculty of Environment and EGSA (Environment Graduate Students Association) level to develop a faculty-wide speaker series.	N/A	N/A
17.	Bi-weekly Colloquium – Socialization Opportunities	Our new 8-month Geography Homeroom course will also socialization opportunities, both with new cohort and with current graduate students and faculty.	Graduate Program Committee, Associate Chair Graduate	As revised program is put into place for 2025 academic year.
<u>Recommendations on Graduate Program Planning at the Faculty Level</u>				
18.	Ensuring Collaborative and Complementary Graduate Program Planning	Throughout our consultation with faculty and students, we have placed a focus on leveraging existing courses and instructional capacity across the Faculty of Environment. Our revised program has a major focus on sharing graduate courses, especially electives, across the various units within the Faculty of Environment.	Chair, Graduate Program Committee, Associate Chair Graduate	Ongoing
19.	Aligning Faculty-Level Graduate Programming with Departmental Workload Considerations	We have been working for well over a year on revising the graduate program with an eye to gaining operational efficiencies through increased sharing of courses between units.	Graduate Program Committee, Associate Chair Graduate	Ongoing
20.	Advancing EDI through Strategic Faculty Complement Planning	Continue to work within existing hiring constraints to advance EDI goals in GEM.	Dean of Environment, Chair.	Ongoing

<u>Recommendations on Graduate Student Funding</u>				
21.	Competitive Graduate Funding	Continue to explore graduate work-integrated learning in conjunction with GradWIL. Use experience from current roll-out in MCC program to inform potential future opportunities in Geography research grad programs.	Associate Chair Graduate and Graduate Administrator	Longer-term objective for post revised program (potentially 2026-27).
22.	Review of Minimum Funding Policies	Funding minimums are set by the University of Waterloo and are already well-above what is considered as a living wage.	N/A	N/A
23.	Funding for International Students	Nothing for GEM to do here.	N/A	N/A
<u>Recommendations on the Distribution of the Dean's Doctoral Initiative (DDI)</u>				
24.	Clearer Policies and Procedures for DDI	Nothing for GEM to do here.	N/A	N/A
25.	Establishing Accountability for DDI Utilization in Research Funding	Nothing for GEM to do here.	N/A	N/A
<u>Recommendations on the Program Infrastructure</u>				
26.	Master's of Climate Change Program	Not applicable to this review.	N/A	N/A
<u>Recommendations on the Communication of Program Information</u>				
27.	Development of a Communication Plan	Seek feedback from current grad students as part of revised Geog 700/800	Associate Chair Graduate and Graduate Administrator	Fall 2025.
28.	Graduate Website/Handbook Design	Work on final development of a website for the revised GEM graduate program and the graduate handbook	Associate Chair Graduate and Graduate Administrator, with input from current students.	Fall 2025
<u>Recommendations on Teaching Assistantships (TAsHips)</u>				
29.	Onboarding and Training of Teaching Assistants	Enhance communication of existing TA training to instructors and grad students. Reminders were sent in Fall 2024 and covered in the orientation session	Associate Chair Graduate and Graduate Administrator	Fall 2024
30.	Explore Alternative TA Opportunities	Continue to advocate with the Associate Dean, Graduate Studies to give priority to GEM graduate students, even those not requiring a TA position according to their funding package, for technical GEM undergraduate courses. This is ongoing and we have been able to hire many students not requiring a TA position in Fall 2024 and Winter 2025.	Associate Chair Graduate	Fall 2024.

The Department Chair/Director, in consultation with the Dean of the Faculty shall be responsible for the Implementation Plan.

Date of next program review

2028-2029

Date

Signatures of Approval



May 13, 2025

Chair/Director

Date

AFIW Administrative Dean/Head (*For AFIW programs only*)

Date



14 May 2025

Faculty Dean

Date

Note: AFIW programs fall under the Faculty of ARTS; however, the Dean does not have fiscal control nor authority over staffing and administration of the program.



Apr. 17, 2025

Associate Vice-President, Graduate Studies and Postdoctoral Affairs
(For graduate and augmented programs)

Date