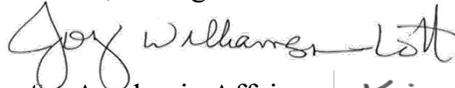


September 27, 2023

To: Maya Tolstoy, Maggie Walker Dean, College of the Environment

From: Joy Williamson-Lott, Dean
Kima Cargill, Associate Dean for Academic Affairs



RE: Review of the Department of Earth and Space Sciences (2022 – 2023)

This memorandum outlines the Graduate School's final recommendations from the Department of Earth and Space Sciences academic program review. Detailed comments on the review can be found in the documents that were part of the following formal review proceedings:

- Charge meeting between review committee and administrators (June 1, 2022)
- Self-Study (September 5, 2022)
- Site visit (October 17-18, 2022)
- Review committee report (November 15, 2022)
- Department of Earth and Space Sciences and College of the Environment dean response to the report (January 12, 2023)
- Graduate School Council consideration of review (May 18, 2023)

The review committee consisted of:

- **Lauren Buckley**, Professor, Department of Biology, University of Washington (Committee Chair)
- **Trevor Branch**, Associate Professor, Worthington Endowed Professorship in Fisheries Management, School of Aquatic and Fishery Sciences, University of Washington
- **Peter Wilcock**, Professor, Department of Watershed Sciences, S.J. & Jessie E. Quinney College of Natural Resources (QCNR), Utah State University
- **J. Douglas Walker**, Union Pacific Resources Distinguished Professor, Department of Geology, The University of Kansas

The Department of Earth and Space Sciences offers the following degree programs:

- Bachelor of Science in Earth and Space Sciences (with options in Geology, Biology, Physics, Geoscience)
- Bachelor of Arts in Earth and Space Sciences
- Minor in Earth and Space Sciences
- Master of Science in Earth and Space Sciences
- Doctor of Philosophy in Earth and Space Sciences
 - Astrobiology Option
- Participation in several interdisciplinary programs: Climate Science Minor, Arctic Studies Minor, Graduate Certificate in Climate Science

College of the Environment Dean Maya Tolstoy and Department of Earth and Space Sciences Professor and Chair Eric Steig attended a Graduate School Council meeting to discuss outcomes from the review. The Council reviewed all documents from the review prior to the meeting. A summary of the review documents and the Graduate School Council discussion are attached to this memo.

Graduate School Council Recommendations

The Graduate School Council commends the Department of Earth and Space Sciences on the strength of its programs, faculty, and students. After discussion, the Council recommended the following:

- Full academic program review in 10 years (2032-2033)
- Interim report in 3 years (2025-2026) addressing the following:
 - Written evidence of solidifying and communicating policies and guidelines including departmental governance, DEI initiatives, requirements and timelines for masters and doctoral degrees, and promotion, merit, and tenure.
 - Steps the department has taken to address concerns raised in the review committee report about department climate for students and faculty.

We concur with the Council's recommendations.

cc: Tricia Serio, Provost and Executive Vice President
Patricia Moy, Associate Vice Provost for Academic and Student Affairs, Office of the Provost
Eric Steig, Chair, Department of Earth and Space Sciences
Review Committee Members
GPSS President

Attachment

University of Washington | Graduate Council

Summary prepared by the Graduate School Director of Academic Program Review

Site visit date: October 17-18, 2022

Degrees/Certificates included in the review:

- Bachelor of Science in Earth and Space Sciences (with options in Geology, Biology, Physics, Geoscience)
- Bachelor of Arts in Earth and Space Sciences
- Minor in Earth and Space Sciences
- Master of Science in Earth and Space Sciences
- Doctor of Philosophy in Earth and Space Sciences
 - Astrobiology Option
- Participation in several interdisciplinary programs: Climate Science Minor, Arctic Studies Minor, Graduate Certificate in Climate Science

Overall Review Committee Recommendation: Continuing status for all degree programs with a subsequent review in 10 years.

Additionally, the committee recommended that the department be asked to provide concise, written evidence of solidifying and communicating policies and guidelines addressing the items below. If the department cannot complete these documents as part of the unit response, they should be provided in an interim report:

- Department governance
- DEI initiatives
- Requirements and timelines for masters and doctoral degrees
- Promotion, merit, and tenure process

Summary of Review Committee Report:

The review committee prefaced its report with an acknowledgment that Earth and Space Sciences is a distinguished department with a national and international reputation, and that many of the concerns observed may result from challenges of the COVID-19 pandemic.

Governance, administration, and climate

- The review committee encountered considerable differences in understanding regarding department government, function, and policies, with much of the department knowledge seemingly transmitted through word of mouth. The committee heard multiple reports of discontent, even distrust, regarding department administration; the graduate students

presented an organized list of concerns, with a common tone that their concerns were not heard or addressed. The committee was also told that some department members of varying ranks were unwilling to speak their minds for fear of retaliation.

- Recommendations:
 - Devise and disseminate pathways to increase communication and transparency.
 - The department governance system should be refined and disseminated, particularly given different understandings of the executive committee's function.
 - Division of labor among current staff should be examined, clarified, and disseminated.
 - Consider expanding faculty mentoring to prepare junior and mid-career faculty to take on leadership positions in the department and college.
 - Clarify the structure and purview of the DEI committee, and ensure the committee is empowered to take a multifaceted approach.
 - Devise or confirm policies and guidelines and construct short documents to convey the information, posted on website, relating to governance, DEI initiatives, requirements and timelines for masters and doctoral degrees, promotion, merit, and tenure process.
 - Consider regular climate surveys across levels of seniority.

Faculty composition and future directions

- The committee cited the departmental self-study which states faculty size two decades ago was 30, recently it was fewer than 20, now sits at 23 with the completion of current plan to hire six new faculty. The goal with the current hiring plan was to “plug holes” in existing focus areas in the department.
- Recommendations:
 - Develop a compelling vision for elevating an already strong department reputation, including a strategic hiring plan and engagement by the junior faculty.
 - Ensure the faculty mentoring plan is put in place and supported by staff and administration.

Funding wants, needs, and new sources

- The committee identified aging infrastructure in need of refurbishing, administrative staff shortage and turnover, and high startup and retention costs as the primary challenges facing the department.
- Recommendations:
 - Develop a long-term funding plan to allocate funds towards infrastructure, staffing, students, and faculty startup.
 - Identify appropriate sizes of startup packages to balance the need for recruitment against available funds. Consider options beyond the current indirect cost partial funding model.
 - Engage with the college to promote fundraising to build the departmental endowment.
 - Strengthen linkages with the college; the committee expressed surprise that some in the department perceived a challenge in aligning department priorities and messaging with those of the college.
 - A need for university investment in infrastructure; a clear space policy would help

ensure equitable allocation.

Undergraduate program

- The committee stated that the undergraduate program is strong, with an impressive enrollment of 150-200+ majors over the past decade, and an exceptional number of student credit hours (SCH) generated. Most of the SCH are delivered by non-science introductory courses and require a large TA pool. The committee suggested that it is inappropriate that SCH-generated funds are insufficient to support these successful classes.
- Recommendations:
 - Plan for the change in research focus from Space Physics to Planetary Science and how it may impact a large fraction of undergraduates.
 - Strengthen professional preparation for Earth and Space Sciences majors, including redesign of the capstone experience.
 - The exceptionally large SCH and large number of majors warrant additional central funding to support the undergraduate enterprise.

Graduate program

- The committee noted that the graduate program is strong and high-quality, with some decline from historical size that seems to correlate with loss of faculty over the last few years. The department supports all graduate students admitted, although the committee noted that graduate students consider the support to be spread unevenly. The committee also expressed concern about the lack of uniformity in student evaluation procedures and a need for transparency on required exams for the Ph.D. program.
- The committee also discussed the applied geosciences MS program, known as MESSAGE. The committee indicated that MESSAGE is a successful program, graduating roughly 12 students per year with a 95% placement rate and high satisfaction by participants and employers. Further, the committee expressed disappointment that the department has paused the program and is considering its termination due to the large amount of time and effort required to ensure the program's success.
- Recommendations:
 - Immediately review and revise documents related to expectations and procedures for progression through graduate programs.
 - Preliminary examinations for the Ph.D. programs should be made more uniform – attempt to place similar expectations on students to progress successfully.
 - Construct a limited set of exam outcomes to provide a set of expected outcomes.
 - The department chair, committees, and advisors should strive to inform better and educate students on what is going on with the ESS graduate program.
 - Engage in a planning process to determine whether it is willing to commit to a high-quality applied MS program, including collaborating with the college to devise sufficient financial return for viability.

Summary of Unit Response and Dean's Comment

The Department of Earth and Space Sciences submitted a response to the report, summarized below. In the

program review process, the dean is also invited to submit a comment, which is also summarized below.

Department of Earth and Space Sciences Response:

- The department stated that the report largely endorses existing department plans, most of which have already been implemented, and acknowledged the concerns expressed about communication amid the COVID pandemic.
- The department disagreed with the review committee’s assessment of departmental DEI efforts, stating that it had outlined numerous practical advances in its self-study and that faculty of color in the department have expressed their confidence in the chair’s leadership. The department expressed concern about the integrity and inclusivity of the report.

Governance, Administration, and Climate

- The department acknowledged that much of its policy documentation is out of date or difficult to access. A new departmental website addresses this and will be completed by the end of spring quarter 2023.
- The department disagreed with the committee’s assessment of the function of its Executive Committee, stating that it functions appropriately. The department acknowledged the need to have a junior faculty member and women faculty on the committee, which are or have already been addressed, and plans to document and disseminate information about the Executive Committee function by end of the current academic year.
- The department indicated it is already implementing a model for preparation of junior and mid-career faculty for leadership roles, and expects it will have a formal proposal considered by the full faculty and finalized by the end of the current academic year.
- The department stated that it has made substantial inroads on DEI goals in the last two years. Prior to the site visit, the department chair, DEI committee chair, and students from the previous DEI committee agreed on changes to the committee structure to make it student-led and faculty mentored, while a new faculty-led Policy Committee was formed.
- The department stated that the committee report “echoed some inaccurate statements provided to them” about mechanisms for anonymous feedback in the department, and indicated while it does have an anonymous feedback mechanism, it encourages direct communication.

Faculty Composition and Future Directions

- The department agreed with the committee’s recommendations and indicated work has begun on a new, comprehensive strategic plan.

Funding

- The department largely agreed with the committee recommendations, but pointed out that it does have very strong linkages throughout the College of the Environment and does not consider that to be a concern.
- The department also stated that the size of startup packages has been commensurate with those at peer institutions.

Undergraduate Program

- The department agreed with the committee's recommendations and revisions to the curriculum are underway, expected to be finalized by the end of the current academic year.

Graduate Program

- The department clarified that requirements and potential outcomes for preliminary exams are already clearly documented and expectations are provided in a two-quarter long class.
- The department agreed that greater clarity on the written part of the exam and that documents relating to expectations and procedures for other graduate student milestones need to be reviewed and potentially revised; this task has been embraced by the Policy Committee.
- The department agreed that a thorough consideration of the future of the Applied Geosciences MS (MESSAGe) is needed. The department expects to make a decision on the program by the end of autumn quarter 2023.

Comment from the Dean, College of the Environment

- The dean thanked the review committee for its work and stated that the Dean's Office is well aware of the importance of Earth and Space Sciences in the college and is committed to continuing to work to support the department.
- The dean stated that integrating DEI principles remains one of the highest priorities of the Dean's Office and is prepared to do everything possible to empower the Earth and Space Sciences DEI Committee in its work.
- The dean indicated that the Dean's Office is committed to transparency in state budgeting efforts and working individually with departments to realize private funding opportunities.

Summary of Graduate School Council Meeting on May 18, 2023

The Graduate School Council discussion of this review included the following key topics:

- *Transparency of policy and departmental information:* The Department of Earth and Space Sciences acknowledged the review committee's observation that policy information in the department was not clear or widely accessible. At the time of the Council meeting, the department had already held a retreat and appointed a policy committee tasked with cleaning up policies and website information.
- *Size of the department:* In response to a question from the Council, the department noted that its faculty size has decreased over time, which has presented challenges in fulfilling its teaching obligations. The department has hired numerous new faculty members in recent years. The department highlighted the strength of its recent hires.
- *Department climate:* The Council noted the review committee's concerns about climate in the department, particularly comments regarding student concerns and department members of varying ranks unwilling to speak their minds for fear of retaliation.