



Academic Program Review

Program Name: Environmental Chemistry - Doctor of Philosophy

Academic Year 2025/2026

Recent Recommendations

Using your most recent review, please respond to all feedback and recommendations.

Response:

Our recent Ph.D. graduates completed their PhD degrees within 5-6 years. In particular, one recent Ph.D. is Alaska resident. We have also recruited new graduate students in 2025.

Student Learning Outcomes

Describe the assessment of your student learning outcomes (SLOs). Discuss your findings, changes you are making, and what you hope to see as a result.

Response:

The student learning outcomes for Environmental Chemistry PhD program stays strong, with most metrics on track or advanced. The highest deficiencies were 3 (12.5%) in Quantitative Abilities and 2 (8%) in Technical Abilities (of 24 events).

Did you make any curricular changes based on your most recent SLOA? If so, discuss what changes were made. If no changes were made, please discuss the strengths of your curriculum based on the assessment of your outcomes.

Response:

The current plan appears to be sufficient, as we have graduated three PhD students within the past two years and 7 peer-reviewed student-led publications. Several more publications will be submitted in next 3-6 months.

As of 2017, all Baccalaureate programs are required to embed communication outcomes within their SLOA Plans. This is optional for non-Baccalaureate programs.

Communication outcomes in the SLOA plan are: **Not Embedded**

Check the checkbox to certify completion of the following tasks:

- ☒ Upload supporting documents to the Supporting Documents folder. This includes artifacts, rubrics, and other documents related to your SLOA.
- ☒ Upload your most recent SLOA to the Supporting Documents folder, even if no changes have been made since the last review.

Have changes been made to your SLOA document since your last review? **No**

If so, please summarize what changes were made.

Response:

High Impact Practices

Please indicate which high impact practices are currently being implemented in relation to the program's student learning outcomes.

- | | |
|--|---|
| ☒ Capstone Courses & Projects | ☒ Graduate Level Research |
| ☒ Collaborative Assignments & Projects | ☐ Writing-Intensive Courses |
| ☒ Diversity/Global Learning | ☒ Publications |
| ☐ ePortfolios | ☐ Communications |
| ☐ First-Year Seminars and Experiences | ☒ Scholarly Activities |
| ☒ Internships | ☐ Studios |
| ☒ Service or Community-Based Learning | ☐ Practicum |
| ☒ Undergraduate Research | ☐ Other |
| ☐ Labs | ☐ None of these |

Discuss how the HIPs in the program are reflected in the SLOA. If you have identified HIPs that are not included in the SLOA, please consider an update.

Response:

Graduate students work with advisors and peer graduate students on research projects and their communication (e.g., presentations and publications). We encourage graduate students to work with and assist in mentoring (with advisor guidance) undergraduate researchers. Environmental chemistry problems often connect with local communities, so students often engage with local communities in co-generation of research. We encourage continual development of student CVs through annual reporting processes. Many graduate classes require written reviews of primary literature or synthesis of literature. The written comprehensive examination also stresses written communication. Graduate students are often involved in outreach and education efforts. Graduate students often work with user facilities or external collaborations where they are exposed to broader classes of research and can consider career possibilities at the host institution. Ph.D. students write an extensive dissertation.

Student Success

Please reference the [Resources tab](#) for information on accessing the Student Success Data Dashboard and contacting your designated data liaisons.

Student Success Data Trends

Persistence: No Change

Pass Rates: No Change

Student Credit Hours: No Change

Majors: No Change

Degrees Awarded: No Change

Other Trends (if applicable):

Achievement Disparities

Discuss any achievement disparities identified in your disaggregated student success data and explain how you plan to address them.

Response:

N/A

Closing the Loop

Please discuss how your student learning outcomes are reflected in high impact practices and student success data.

Response:

Our students have developed significant skills through this program, through communication, technical and quantitative skills, and independence. They often present their work in national and international conferences. Their work are published in peer-reviewed journals. Our students have also earned national and university-wide recognition (one won 2025 Graduate Student

Award in Environmental Chemistry from the American Chemical Society and one was awarded the Best Student Paper Award in UAF Geophysical Institute). Our students have also done interviews with local TV and radio stations. All of them stay employed after graduation.

Academic Program Profile

The following questions help show how your program supports the university's mission, connects with other UA programs, engages with the community, contributes through service courses, and supports student success after graduation. Please use this section to highlight the value your program brings to students, the university, and beyond.

UAF's Mission:

The University of Alaska Fairbanks is a Land, Sea, and Space Grant university and an international center for research, education, and the arts, emphasizing the circumpolar North and its diverse peoples. UAF integrates teaching, research, and public service as it educates students for active citizenship and prepares them for lifelong learning and careers.

In what ways does your program advance UAF's mission?

Response:

UAF Environmental Chemistry PhD program supports and expands UAF's mission "through creative teaching, research, and public service with an emphasis on Alaska, the North and their diverse peoples". We have strong retention rate and our students are successful in obtaining employment. This program has strong ties to the community and industry.

How is your program related to others in the UA system?

Response:

We have strong collaborations with College of Engineering and Mines (CEM), Geographic Information Network of Alaska (GINA) and other units in the UA system.

Who are your key community or external partners?

Response:

Alaska Department of Environmental Conservation, Bureau of Land Management

What role do your services courses play, if any?

Response:

N/A

How do your graduates succeed after leaving the program?

Response:

All of them are employed.

Submitter and Collaborator Names:

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Submitter Email:

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Committee Review
**Program Name: Environmental Chemistry - Doctor of
Philosophy**

Academic Year 2025/2026

Overall Recommendations

The college or school committees set the tone for helping each program feel seen during this process. We have provided you with feedback tags to attach to this program review. Please select as many as applicable.

- | | |
|--|--|
| ☒ Insufficient Narratives | ☐ Report Incomplete |
| ☐ Address Achievement Gap | ☒ Consider Curricular Revisions |
| ☐ Develop Online Offerings/Options | ☐ Improve Time to Degree |
| ☐ Increase Enrollment | ☐ Increase Graduates |
| ☐ Increase Retention/Persistence | ☐ Strengthen Advising Practices |
| ☐ May be asked to share Effective Practices | ☐ Recommendation to University-Wide Committee |

Explanation of Overall Recommendations

Response:

Provided feedback, albeit very limited, in response to recommendations from the last full-program review in 2023. For future program reviews, please provide the feedback (both commendations and recommendations) with a more detailed response, where applicable, to each one. Will need to provide significantly more information for the full-program review in 2027 per the guidance provided in this program review. The program will need to document continuous improvement and closing the loop as well in the next full-program review in 2027 (see SLOA Feedback Narrative below).

Student Learning Outcomes Feedback

- | | |
|--|---|
| ☐ Strong | ☐ Developing |
| ☐ Requires Minor Revision | ☒ Requires Major Revision |

Student Learning Outcomes Assessment Feedback

- | | |
|---|---|
| ☒ Strong Alignment with SLOA Plan | ☒ Clear, Concise Presentation of Findings |
| ☐ Compelling Learning Story | ☐ Missing a Direct Measure |
| ☐ Missing Active Verbs | ☒ Missing Curricular Connection |
| ☐ Missing Collaboration within Department | |

SLOA Feedback Narrative:

The program has six SLOs, each of which is clearly defined. However, the program did not upload the SLOA document into the supporting documents folder as requested (please do so for future program reviews). There is also a slight discrepancy between the SLOs in the academic catalog (there are six SLOs listed) and on the UAF website (there are three primary SLOs with sub-SLOs); this discrepancy needs to be resolved. Each SLO has a clear set of criteria, procedures for assessment, and implementation plan. The program did provide a narrative overview of how they are addressing each SLO and included relevant data/evidence as an appendix in the supporting documents folder. It will be important to provide all relevant artifacts/rubrics as supplementary documents to document the assessment process (none are included with this program review).

The narrative descriptions in the template for SLO assessment and curricular changes were extremely limited in scope and provide an incomplete description of the assessment of this academic program. The program did not discuss how SLOs are reflected in the HIPs and student success data. Documenting continuous improvement and the closing of the loop are important components of the program review process, not just as an exercise, but to demonstrate that assessment results are used to make meaningful, evidence-based changes that enhance program quality and student learning. This process ensures accountability, fosters a culture of ongoing improvement, and provides clear evidence to accreditors and stakeholders that actions lead to measurable outcomes. Will need to address in the next program review.

Student Success and Equity Feedback

Narrative:

The program review examined the Student Success Dashboard and reported trends that accurately reflect the data, showing very little variation between gender, ethnicity, or race. Overall, these trends appear consistent across the years. However, the review does not provide information on how the program supports diverse student success, nor does it identify or discuss any equity or achievement gaps. Similarly, there is no mention of strategies to improve retention or graduation, and evidence of inclusive practices is limited beyond noting that at least one student is [REDACTED].

While the data trends appear stable, the report could benefit from a more explicit discussion of inclusive practices, setting achievable goals, and outlining how outcomes will be tracked.

Addressing these points in the 2027 full program review would strengthen the program's accountability and narrative in this area.

High Impact Practices Feedback

Narrative:

Reviewer Names: