

ACADEMIC PROGRAM REVIEW FORM

All academic programs and units at UAA are required by Board of Regents Policy P10.06.010 to engage in program review on a seven-year cycle. University Regulation R10.06.010 sets out the minimum requirements for program review, including centrality of program mission, quality, demand, program productivity, effectiveness, and efficiency. Exceptional reviews may be conducted, per University Policy and Regulation, and with the provost's approval. The UAA process integrates information about student learning outcomes assessment and the improvement of student learning, as well as progress on student success measures and the closing of equity gaps, aligning program efforts and resources with institutional priorities. Final decisions include commendations and recommendations, which guide future program efforts. The results of cyclical Academic Program Review are reported to the UA Board of Regents annually and are published on the UAA [Academic Program Review website](#).

This form is composed of four parts: the Program Section, the Dean Section, the Program Optional Response Section, and the Provost Section. Guidance for submission is provided in each section.

Using the Form: The form is pre-loaded with information specific to each program and sent by the dean to the program. The program should download and save their form to begin using it. The form is locked, so instructions are viewable and the only sections of the document that can be edited are the form fields. To ensure the fillable fields function correctly, the form must be completed in Microsoft Word. It will not function properly in Google Docs. Programs that wish to record collaborative discussion of the report might consider creating a separate document to take notes, prior to entering final responses in the official fillable form.

The form uses narrative boxes, text only, and drop-down boxes. Narrative boxes have a character limit, which includes spaces. To undo an answer, press "Control-Z" or "Command-Z."

Responses are to be narrative text only, and must be ADA and FERPA compliant, and must not include the names of any current or former employees. Do not embed any tables or links, including to webpages or other documents. To be FERPA compliant, do not include the names of any current or former students. Rather, use statements such as, "In AY22 four program graduates were accepted to graduate programs in the field." Programs with specialized accreditation or other external recognitions must comply with restrictions regarding what may be published, as per the accreditor or external organization. Do not include appendices. Appendices to this form will not be accepted.

Data: Each program is provided a datasheet, along with this pre-loaded form. For questions about the data, please contact Institutional Research (uaa.oir@alaska.edu).

Assistance: For technical assistance with this form, email Academic Affairs (uaa.oaa@alaska.edu).

Program(s) in the review: BS Natural Sciences

Specialized Accrediting Agency (if applicable): N/A.

Campuses where the program is delivered: Anchorage KOD KPC MSC PWSC

Year of last review: AY20

Final decision from last review: Continued Review

PROGRAM SECTION (Due on March 1)

The program review committee chair and committee members are assigned by the dean. All program faculty should be included in the review process, including faculty on the community campuses. After completing the Program Section below, the program review committee chair will enter their name and date, and email this form to the dean, copying all committee members. If the program is fully delivered on a community campus, copy the appropriate community campus director(s). The program review committee chair's name and date lines are at the end of the Program Section.

Program Review Committee:

Cindy Trussell, Professor, Biological Sciences, Kodiak, Chair
Rachael Hannah, Associate Professor, Biological Sciences, Anchorage
Eric Bortz, Associate Professor, Biological Sciences, Anchorage

1. Demonstrate that the program has responded to previous recommendations.

Recommendation 1: Review and revise as appropriate the Environmental Sciences Option in light of the recommendations related to the Environment and Society baccalaureate program.

How do you know the recommendation has been successfully achieved? (2000 characters or less)

The curriculum committee revised the Environmental Sciences track in light of the loss of the Environment and Society Degree. The changes will take effect in the Fall 2023 catalog.

Actions taken to date (2000 characters or less)

The Bachelor of Science in the Natural Sciences with an Environmental Sciences (NS ES) option has been modified to include several key components of the Environment and Society degree. Previously students took 29 credits in core sciences (BIOL, CHEM, ENVI, and GEOL), now students take 42 credits in core sciences, economics (Environmental Economics and Policy), and philosophy (Environmental Ethics). In addition, the GEOG A470 Environmental Policy and Regulation in Alaska as an integrative capstone course.

Previously a student majoring in NS ES then chose 51 elective credits from 104 different courses in five disciplines in Natural and Physical Sciences, 15 credits from 39 different courses in six disciplines in Math & Computational Skills, and 9 credits from 19 courses in six Social Sciences.

In the newly designed curriculum, students now complete 48 elective credits with 6 from social sciences, 12 from Math & Computational Skills emphasizing GIS courses, 15 credits in the geological sciences, and 15 credits in the biological sciences.

The Natural Sciences program assessment Plan was updated in 2022 to reflect modifications to the program student learning outcomes to further support the environmental sciences option.

Students graduating with a Bachelor of Science in Natural Sciences will be able to: (1) Students will design and implement scientific investigations to explore natural phenomena using experimentation, which includes exploration and discovery and testing ideas (gathering and interpreting data). (2) Students will clearly and accurately communicate scientific ideas, theories, and observations in oral and written forms. (3) Students will apply scientific data, concepts, and models to craft interdisciplinary explanations of scientific ideas across two of the natural sciences.

Evidence of success to date (2000 characters or less)

The new curriculum will be introduced to prospective students in Fall 2023, thus, we have created 4-year course plans for both tracks (Environmental Science and Pre-Health Professions).

- 2. Demonstrate the centrality of the program to the mission, needs, and purposes of the university and the college/community campus. Include how the program is integrating (or planning to integrate) intentionally designed opportunities for students to develop the four core competencies (Effective Communication; Creative and Critical Thinking; Intercultural Fluency; and Personal, Professional, & Community Responsibility). (2500 characters or less)**

Creative and Critical Thinking

The BS in Natural Sciences aligns with the American Association for the Advancement of Science (AAAS) Vision and Change recommendations for interdisciplinary education and research. Being an interdisciplinary STEM degree reinforces and develops critical thinking skills. The complexity of the problems facing society will favor students who are prepared to consider knowledge from multiple disciplines. The degree has two tracks (Environmental Science and Pre-Health Professions) to prepare students for many different occupations. Natural Sciences graduates serve diverse roles in Alaska and outside including work as state and federal agency scientists, teachers, and industry/health professionals.

Effective Communication

The second PSLO for this program is to "Clearly and accurately communicate scientific ideas, theories, and observations in oral and written forms." One of the artifacts we currently use to address this outcome is a pre-proposal letter written to a granting agency in BIOL A492. Another artifact we have used is a presentation on their scientific studies in BIOL A108. We could also solicit artifacts from GEOG A470 to get a more holistic view of their communication skills.

Personal, Professional, & Community Responsibility

All students in this degree must take BIOL A492, Undergraduate Seminar. In this course there are several assignments specifically designed to promote personal flourishing and professional excellence. There are a series of assignments that begin with an elevator pitch for an idea, a panel discussion, and then a letter of intent to apply for a grant. These are all skills that students may require when going out into the workforce. These in-course assignments are further supported by internship opportunities/undergraduate research that students may choose to engage in. Over the years, the Biological Sciences department has established internship opportunities both within the

institution and outside. These internship opportunities help students develop their professional and community responsibilities.

3. Demonstrate program quality and improvement through assessment and other indicators.

a. Program Student Learning Outcomes Assessment and Improvement Process and Actions

i. BS Natural Sciences

- *1) Design and implement scientific investigations to explore natural phenomena using experimentation, which includes exploration and discovery, and testing ideas [gathering and interpreting data]; 2) Clearly and accurately communicate scientific ideas, theories, and observations in oral and written forms; 3) Apply scientific data, concepts, and models to craft interdisciplinary explanations of scientific ideas across two of the natural sciences.*

Describe your key findings for these outcomes. (3000 characters or less)

PSLO#1 - Assessment of core 4-credit courses (BIOL A243: Experiential Learning: Cell Biology and Genetics, and BIOL A273: EL: Ecology and Evolution) used AY20/21 IR grade data as a baseline understanding of the achievement of PSLO #1 (92.5% pass, 86% A or B). Assessment artifacts were graded independently by the committee with a rubric to assess achievement of PSLO#1 for experiential learning BIOL A243, A273, and 4 upper-division courses (BIOL A311: EL: Animal Physiology, A342: EL: Microbial Biology, A442: EL: Animal Behavior, and A465: EL: Molecular Biology). Assessment reflected steady achievement as students progressed from A243/273 EL (median 2.8/4) to A311/342 EL (median 2.8/4), with challenges achieving the expected outcomes at advanced A442/465 EL (median 2.4/4). This finding is based on a small sample size in 400-level ELs but highlights the utility of artifact analysis to provide a basis for feedback for improvement.

PSLO #2 - The findings were somewhat surprising this year because the median and modes were lower in the BIOL A492 course than in the BIOL A108 course. While we cannot say that students did not get worse at communicating, we believe there were some mitigating factors for these findings. The first concern is that the BIOL A492 course is one credit, and the BIOL A108 is six credits. Students may put more effort into a six-credit class. Second, the communications rubric we developed is designed for a research paper format and not for a letter format. Third, in BIOL A108, the artifact we evaluated was the third of its kind, with students having received feedback, whereas the BIOL A492 assignment was the first of its kind.

PSLO #3 - We revised the PSLOs for the BS in Natural Sciences in 2018-2019 and rotate the assessment of the different outcomes. This outcome will be assessed in the current academic year (2022-2023).

Describe actions taken to improve student learning for these outcomes. (3000 characters or less)

Each academic year, the assessment committee shares the results of our assessment report with the full faculty. We have discussions concerning the strengths and weaknesses. This structure

provides a positive feedback loop in that faculty see areas for modification by either altering assignments or the structure of the course.

In one case, the assessment committee recognized that we didn't have a broad enough representation of courses to evaluate PSLO #3, so the curriculum committee added several courses to the core curriculum including ECON A210 (Environmental Economics and Policy), PHIL A303 (Environmental Ethics), and GEOG A470 Environmental Policy and Regulation in Alaska as an integrative capstone course.

Describe evidence that these actions are working. (3000 characters or less)

Even though there is not a specific prefix for Natural Science courses as the program is composed of a diversity of courses from other disciplines, based on the data provided from Institutional Research, the junior-level graduation rate has fluctuated between 57 - 70%. The average pass rate for all full-time students in potential upper-division courses is 86.8%. When accounting for courses that an Environmental Sciences student might take, the pass rate is 88.5% accounting for 637 students that were enrolled in these upper-division courses. Disaggregated data from all potential Natural Sciences courses show our first-generation and Pell Grant recipient students passing at 89.25% and 84.6%, respectively.

- b. Demonstrate program quality and improvement through other means, for example, maintaining specialized accreditation, using guidance from advisory boards/councils, responding to community partners and local needs, maintaining currency of the curriculum, implementing innovative program design, intentionally integrating high-impact teaching and learning practices into the program, and meeting indications of quality in distance education, such as the C-RAC Standards. (3000 characters or less)**

The curriculum committee redesigned the curriculum at the request of the Provost and Dean for the Natural Sciences degree program in 2021-2022, therefore, keeping the curriculum current.

As part of our annual review process, we continue to discuss and expand high-impact teaching and learning practices into the courses that students take. Of note, including active recruitment into undergraduate research, and revamping assessment techniques with equitable measures of assessing student learning beyond high-stakes exams. Several elective courses have received QM certification including BIOL A288 (Principles of Evolution) and BIOL A455 (Bioinformatics).

4. Demonstrate student success and the closing of equity gaps.

- a. Analyze and respond to the disaggregated data in the data sheet for your program. Provide clarifications or explanations for any positive or negative trends indicated by the data, and discuss what you are doing to close any equity gaps. The Student Success program review metrics are Junior Graduation Rate, Associate Graduation Rate, Semesters to Degree – Graduate Programs, and Course Pass Rates by Course Level. (3000 characters or less)**

Data show strong success rates of retention and completion for underrepresented groups. To continue to support student success, faculty that teach Natural Science courses are involved in the HHMI Inclusive Excellence in first-year STEM education work to increase student retention.

In addition, the Junior Graduation Rate was lowest for those who self-reported as white in 2019 (29%) and highest for those self-reporting as Hispanic in 2018, and 2022 (100%) and for those who reported as African American in 2019 (100%).

When summarizing course pass rates, there is no clear trend such that an equity gap cannot be identified. Though not based on the findings we have decided to include demographics and grade data yearly from IR to better capture any equity gaps that may occur in our degree program. In lieu of the ETS, we are taking a deeper dive into artifacts from selected courses meant to address the PSLOs that we are assessing.

- b. Provide evidence of the overall success of students in the program. For example, you might talk about the percent of students in post-graduation employment in the field or a related field, the percent of students who go on to graduate school or other post-graduation training, and/or the percent of students who pass licensure examinations. You might also give examples of students who have been selected for major scholarships or other competitive opportunities. [Please do not use personally identifiable information.] (3000 characters or less)**

We have not collected systematic data on student successes prior to and post-graduation, but we are planning a mechanism for this metric for next academic years. We have gathered qualitative information about graduates and success in applications to professional school programs (medical school, health professions, graduate programs in sciences, teaching certification, et al.), competitive scholarships, and government agency and private sector employment.

5. Demonstrate demand for the program.

- a. Analyze and respond to the data in the data sheet for your program. Provide clarifications or explanations for any positive or negative trends indicated by the data, and discuss what you are doing to improve. The Demand program review metrics are Ratio of Out-of-Discipline Credit Hours to Total Credit Hours, Number of Program Graduates Who Continue Education, Number of Program Graduates Who Return to UAA to Pursue an Additional Program, and Gap between Job Openings and Degree Completions. (Note: Gap between Job Openings and Degree Completions not required for AY23 Program Reviews.) (3000 characters or less)**

The data are difficult to assess for the Ratio of Out-of-Discipline credit hours to total credit hours because there are no courses with a Natural Science designator. However, the interdisciplinary nature of this program expects students to complete credits from many different departments such that they receive broad exposure during their degree. We are working with IR for future data collection for the Natural Sciences program, identifying key courses to pull for evaluation of these different metrics.

The number of program graduates continuing their education and/or returning to UAA to pursue an additional program indicates a positive aspect of this program. Over the 5 years review period, we had 191 program graduates, 116 (61%) continued their education and 72 (38%) returned to UAA to pursue an additional program.

Biological Sciences has recently implemented a non-thesis masters degree. Those students pursuing a Natural Sciences degree would be well poised to enter this degree program upon graduation.

6. Demonstrate program productivity and efficiency.

Analyze and respond to the data in the data sheet for your program. Provide clarifications or explanations for any positive or negative trends indicated by the data, and discuss what you are doing to improve. The Productivity and Efficiency program review metrics are Five Year Degree and/or Certificate Awards Trend, Student Credit Hours per Full-Time Equivalent Faculty, and Full-Time Equivalent Student per Full-Time Equivalent Faculty. (3000 characters or less)

Five-year degree trends for Natural Science have fluctuated over the past 5 years, showing no trend. Potentially, this fluctuation could have been impacted by external events such as the COVID-19 pandemic. Regardless of this fluctuation, obtaining a bachelor's of science degree in Natural Sciences remains a consistent choice for students regardless of the situation. The five-year trend data show a median of 39, mode of 47, a maximum of 47, and a minimum of 24. The minimum graduation occurred during 2020, at the beginning of the COVID-19 pandemic. In 2021, 47 students graduated with a bachelor's of science in Natural Science, almost a 200% increase from the previous year. While in 2022 there was a 28% decrease in students graduating with a Natural Sciences degree from 2021. If the data are evaluated from the median of the five years of 39 students, then the graduation rate fluctuates as a percent change from -38.5% (2020) to an increase of 20.5% (2018, 2021), with one year (2019) showing no change.

As one of the few interdisciplinary science degrees, our students support and enhance enrollments in the SCH, FTE in all departments in which they take credits. In other words, students in the Natural Sciences degree program for the core courses in Chemistry, Physics, Geology, Math, Philosophy, and Economics Departments within the College of Arts and Sciences.

Optional: Discuss the extent to which, if any, extramural funding supports students, equipment, and faculty in the program. (2500 characters or less)

7. Assess program distinctiveness, as well as any duplication resulting from the existence of a similar program or programs elsewhere in the University of Alaska System. Is duplication justified, and, if so, why? How are you coordinating with UAA's community campuses and the other universities in the system? (2000 characters or less)

Both UAS and UAF have programs that appear superficially similar to our Natural Science degree with the environmental pathway. These programs are:

- o Natural Resources and Environment and Wildlife and Conservation Biology at UAF
- o Environmental Science and Environmental Resources at UAS

Place-based research is critical for students to thrive in their community and to address community needs to future scientific challenges. Thus although these programs are minimally duplicative, they

are necessary for students to gain valuable experience in undergraduate research. Moreover, it supports the research needs of the community in which the program resides.

Having similar sounding programs in different locations across the state increases access to undergraduate research opportunities, as each faculty member can only support a certain number of student mentees. By providing broad opportunities with faculty on each campus across the UA system, we will maximize the opportunities for students to engage in this high-impact practice that supports direct job training skills. This practice will translate directly into filling open job positions.

Another reason for duplication across campuses concerns equity and inclusion; UAA is where the majority of the population lives in the state of Alaska. Requiring students to relocate to Juneau or Fairbanks may prevent the student from pursuing a degree in this field. As the only open-access institution in the UA system, this allows students with varied academic backgrounds to explore a science degree.

8. Assess the strengths of your program and propose one or two action steps to address areas that need improvement. (3500 characters or less)

Strengths of the program:

Student demand for this degree program remains steady and the costs of administering the degree are low. In addition, both Natural Sciences degree tracks prepare students for several high-demand job areas. According to the Alaska Occupations by Employment Outlook growth is strong and openings are high for many health-related fields, and the pre-health professions track provides students with the necessary educational background to pursue higher education in those fields. The environmental science track is well suited to prepare students for environmental monitoring jobs, the Employment Outlook is similar to secondary school instructors with low growth, but high openings.

Action steps to improve areas that need improvement

- Work with the new staff in IR to build appropriate metrics for this program, with new PSLOs (2021) and with a redesigned Environmental Sciences track (2022), we will need to collaborate with IR to extract data from the appropriate required and elective courses.
- Increase awareness of the Natural Sciences degree and its two tracks. In particular, we could enhance our web and social media presence and identify associated faculty with each track.

After completing the Program Section above, the program review committee chair should enter their name, date, and email this form to the dean, copying the committee members. If the program is fully delivered on a community campus, copy the appropriate community campus director(s).

Committee chair first name last name: Cindy Trussell

Date: 3/1/2023

END OF PROGRAM SECTION

DEAN SECTION (Due on April 1)

If the program is fully delivered on one or more community campus, the dean should consult with the director(s) of the campus. After completing the Dean Section below and entering their name, the dean should email this form to the committee, and to uaa.oaa@alaska.edu. If the program is delivered on a community campus, copy the appropriate community campus director(s). The program has one week to provide an optional response to the Dean Section using the Program Optional Response Section of this form.

1. Evaluation of Progress on Previous Recommendations

For each recommendation from the last program review, indicate if the recommendation has been met or has not been met and provide commendations and guidance as appropriate. (2000 characters or less for each recommendation)

Recommendation 1: Review and revise as appropriate the Environmental Sciences Option in light of the recommendations related to the Environment and Society baccalaureate program.

Recommendation has been met.

The Environmental Option of the Natural Sciences BS major has been revised to include courses in Biology, Chemistry, Environmental Sciences, Geology, Geography as well as Environmental Ethics and Environmental Economics and Policy.

Provide your analysis of #2-8 below, based on the data provided and the program's responses above.

2. Centrality of the Program. (1750 characters or less)

The Environmental Option of the Natural Sciences BS major is a strong interdisciplinary degree that prepares students to investigate large complex issues such as environmental and climate change.

3. Program Quality and Improvement (1750 characters or less)

The curriculum committee in the Biological Sciences Department assessed several Biology courses that are required for the degree. While some measures were inconclusive, others showed steady student achievement across courses at multiple levels. As suggested in the report, a broader representation of courses should be assessed. Additionally, the assessment results should also be shared more broadly to include faculty in other disciplines included in this program.

4. Student Success and the Closing of Equity Gaps (1750 characters or less)

The faculty in this program have done a thorough analysis of the data provided and have thoughtfully considered the student success metrics especially in regard to the closing of equity gaps. The data shows strong retention and completion rates for all groups. The faculty are encouraged to develop a system to monitor the success of the graduates of the program.

5. Demand (1750 characters or less)

As this is an interdisciplinary degree with courses chosen from a variety of departments, the metric of "out-of-discipline credit hours" does not seem to apply. The majority of graduates continue their education, with a significant portion doing so at UAA.

6. Productivity and Efficiency (1750 characters or less)

Over the past five years, there has been an average of 39 graduates per year. The courses that support this interdisciplinary degree are existing courses that also support other degrees, thus, in terms of efficiency, this program requires no additional resources.

7. Duplication and Distinctiveness (1750 characters or less)

Both UAF and UAS have related programs with emphases on natural resources, wildlife biology, and environmental resources. The UAA program is distinctive in its high degree of interdisciplinarity.

8. Strengths and Ideas for Moving Forward (1750 characters or less)

One of the strengths of this program is its interdisciplinarity, but this is currently also one of its weaknesses as the College does not currently have a well-developed system for supporting interdisciplinary programs such as the Natural Sciences major. We must develop a mechanism to better advertise and market these degrees more broadly, as well as to involve faculty from multiple units in the delivery and oversight of the degree. Additionally, in the development of this report, it has become apparent that we need a better way to distinguish students in the Environmental Sciences track from those in the Pre-Health Professions track of the Natural Sciences degree program. I look forward to working with the faculty on these institutional challenges.

Dean's Final Evaluation

I commend the program for: (number and list the specific commendations in the narrative box, 1500 character limit)

The faculty in the Department of Biological Sciences have done a very good job of developing, assessing and overseeing the Natural Science degree. The interdisciplinary degree includes the study of a variety of scientific disciplines along with specialized courses in the social sciences and humanities that focus on the environment. The faculty are commended for the creation of this degree option.

I recommend that the program: (number and list the specific recommendations in the narrative box, 1500 character limit)

1. Involve faculty from multiple departments (perhaps those who teach core courses in the program) in the assessment and oversight of this program.
2. Explore options for the academic home for this degree, perhaps in an "Interdisciplinary Studies" Department.
3. Work collaboratively with the Dean's Office to better publicize this strong interdisciplinary degree.

6/27/2022

4. Investigate and evaluate the pathways for students in the natural sciences program to enter the MS programs in biological sciences, geological sciences or the interdisciplinary degree program, perhaps including fast track options.

Dean's overall recommendation to the provost: Continuation -- Program is successfully serving its students and meeting its mission and goals. No immediate changes necessary, other than regular, ongoing program improvements.

If an Interim Progress Report is proposed, recommended year: N/A

If a Follow-up Program Review is proposed, recommended year: N/A

Proposed next regular Program Review: AY2030

After completing the Dean Section above, the dean should enter their name, date, and email this form to the committee, and to uaa.ooo@alaska.edu. If the program is fully delivered on a community campus, copy the appropriate community campus director(s). The program has one week to provide an optional response to the Dean Section using the Program Optional Response Section below.

Dean first name last name: Jenny McNulty

Date: 4/1/2023

END OF DEAN SECTION

PROGRAM OPTIONAL RESPONSE SECTION (Due within one week of receiving dean's review)

Programs have the option to submit to the provost a response to the dean's evaluation within one week of receiving the dean's review, using the narrative box below. Please indicate whether or not you will submit an optional response below.

Are you submitting an optional response? If yes, add your response below, enter your name and date, and follow the guidance below for submission. If no, enter your name and date, and follow the guidance below for submission. Yes

Optional Response: (10,000 characters or less)

We thank Dean McNulty for her positive review of the Environmental Sciences (ES) option of the Natural Sciences (NSCI) BS degree housed within the Department of Biological Sciences. After reading the review and recommendations, we have chosen to respond to provide important context, more information regarding actions that are already underway, and to note areas where we will need to seek more clarity from the Dean before moving forward. While the review focused primarily on the ES option (because of recommendations associated with prior expedited program review), the NSCI degree comprises two options, the ES option and the Pre-Health Professions (PHP) option, and so our response necessarily includes information associated with both.

6/27/2022

The department agrees that increasing advertising and improving exposure of the NSCI degree is important. Indeed, we recently learned that Admissions is unaware of the options within this degree despite their greater than 10 yr existence! We are already developing updated recruitment materials to share with them (and to use in outreach). Importantly, we recently expanded our departmental Outreach and Public Relations committee (charge and membership) and fully anticipate increases in our outreach and recruitment activities moving forward that will enhance degree exposure. In addition, under Dean McNulty's leadership we have already seen increases in marketing of a diversity of CAS programs (e.g. via radio ads) and we look forward to working with the Dean and CAS staff to improve marketing of all our degree programs, not just NSCI. We disagree that the interdisciplinary nature can be viewed as a weakness. We do not oversee this degree program in a vacuum, and both recently and historically we have worked with faculty from other departments and programs (e.g. WWAMI, ENSO among others) on updates to the NSCI curriculum and SLOs. Also, given the most recent updates to the ES option which take effect in Fall, 2023, combined with changes in the assessment and program review process at the University level, we have already started discussing how we will expand our assessment efforts to include courses from other disciplines and work directly with those faculty for this purpose.

We are by far the best academic home for the NSCI degree. We have been excellent stewards of this degree program since we created it over 20 years ago, making updates to the curriculum over the years to better serve the needs of students in a changing world. While it is true that there is an interdisciplinary nature to both the ES and PHP degree options, they are both science degrees, not "studies" degrees. Indeed, no more than 30% of the required credits in each degree option comprises courses from the social sciences and math & stats combined, and the ES degree requires only a single humanities course (PHIL). Importantly, evaluation of the curricula makes it clear that in both options the bulk of the science coursework that students are required to take comes from our department. For example, 36% of the required ES science course work comes from BIOL/MBIO, which is 1.7X higher than the next-most highly represented science discipline. The PHP option was created to support students who plan to apply to medical, veterinary, dental and pharmacy school, and the most highly recommended course electives for students interested in those careers are taught by the Department of Biological Sciences (e.g. cell biology, genetics, molecular biology, microbiology, vertebrate anatomy, human anatomy & physiology, and immunology among others). Additional electives of particular relevance to students in PHP include courses in animal physiology, virology, endocrinology, and molecular biology of cancer among others, all of which are BIOL/MBIO courses. Consequently, more of the science selectives included in the PHP option are BIOL/MBIO courses (76%) compared to any other science discipline. Overall, NSCI majors share more classes with Biological Sciences majors than students of any other major, in not only their biology courses, but also chemistry, math, stats and physics courses. In addition, there is often overlap between the career goals of Biological Sciences and NSCI majors. As such, the peer community to which most NSCI students most closely align is within the Department of Biological Sciences. A benefit of this is that we can, when appropriate, provide support and resources collectively to all our majors. Lastly, given the breadth that is the biological sciences (ranging from ecology and environmental science to cell biology and biomedical science), the Department of Biological Sciences is best poised to meet student needs with respect to their degree progression, including opportunities for undergraduate research as well as providing mentoring toward their career aspirations and trajectories. While there is always room for improvement, improvements that support student success as well as increase the exposure of the degree can be made by the Department of Biological Sciences.

6/27/2022

Lastly, we will need to get clarification from the Dean regarding the intent of the final recommendation to “Investigate and evaluate the pathways for students in the natural sciences program to enter the MS programs in biological sciences, geological sciences or the interdisciplinary degree program, perhaps including fast track options”. NSCI students can and do successfully apply to MS degree programs at UAA, including those listed in this recommendation. In addition, we recently created an accelerated track for MS Biological Sciences degree and we have already accepted NSCI students into the program through this track.

After completing this section, the form should be submitted to uaa.oaa@alaska.edu, with a copy to the dean. If the program is fully delivered on a community campus, copy the appropriate community campus director(s) as well.

Committee chair first name last name: Cindy Trussell

Date: 4/7/2023

END OF PROGRAM OPTIONAL RESPONSE SECTION

PROVOST SECTION (Due on August 1)

After completing, signing, and dating the Provost Section of this form, email the completed form to the program review committee and dean, with a copy to uaa.oaa@alaska.edu for posting. If the program is delivered on a community campus, copy the appropriate community campus director(s) as well.

Provost’s commendations, additional or adjusted recommendations, if any, and other general comments (3000 characters or less):

I agree with the dean’s commendations, and I would add a commendation for the program’s robust collaboration with faculty at the community campuses. I also agree with the dean’s recommendations, and would add that, in working with the college to market the program, it will be important to draw attention to the two tracks and the pathways they provide into a range of careers. Finally, I concur that the program should consider the possible benefits of being housed in a broader interdisciplinary unit.

As I did last year in the Program Review process, I am asking programs to think about how they put students first. This includes continuing to monitor any courses with high DFW rates and seeking out strategies for remediation as needed. It also includes continuing to think about what it means to embrace diversity and inclusivity on the course and program level and to demonstrate this in your particular program(s). This could be through the use of proven, high-impact practices at the program level, or through proven pedagogic strategies such as designing assignments using Transparency in Learning and Teaching (TILT). It can also be through implementing OER and ZTC materials, particularly where course materials can be more reflective of diverse perspectives, or by using the same materials across all sections of a course. Finally, I am asking that every program identify at least one opportunity for students to develop each of UAA’s core competency within the program’s curricular and/or co-curricular offerings.

Provost’s decision: Continuation -- Program is successfully serving its students and meeting its mission

6/27/2022

and goals. No immediate changes necessary, other than regular, ongoing program improvements.

Interim Progress Report year: N/A

Follow-up Program Review year: N/A

Next regular Program Review: AY2030

Provost's signature:

A handwritten signature in cursive script that reads "Denise K. Runge". The signature is written in black ink and is positioned above a horizontal line.

Date: 5/12/2023