

2021 ANNUAL ACADEMIC ASSESSMENT REPORT FORM
(Due October 15 to the dean)**PROGRAM SECTION (Due to the dean on October 15)****Submission date:** 10/15/2021**Submitted by:** Jonathan Stecyk, Associate Professor of Biological Sciences, Chair, Department of Biological Sciences Graduate Affairs Committee, jstecyk@alaska.edu**Program(s) covered in this report:** Biological Sciences MS

If you selected "Other" above, please identify. (100 characters or less)

College: College of Arts and Sciences**Campuses where the program(s) is delivered:** ☒ Anchorage ☐ KOD ☐ KPC ☐ MSC ☐ PWSC**Specialized accrediting agency (if applicable):** Select Specialized Accrediting Agency or N/A.**If explanation is necessary, such as only some of the certificates and degrees are covered by the specialized accreditation, briefly describe:** N/A**INSTITUTIONAL STUDENT LEARNING CORE COMPETENCIES**

In 2020, UAA launched a consensus-based, deliberative process to identify the key skillsets that help students achieve academic and post-graduation success. After a year-long process that included students, faculty, staff, administrators, alumni, and employers, the UAA community identified four "core competencies" at the heart of a quality UAA education. Students develop mastery of these competencies through curricular (e.g., courses), co-curricular (e.g., internships, conferences), and extra-curricular (e.g., student clubs) learning experiences.

After the stakeholder-based process in AY20, UAA conducted a pilot project focusing on the core competency of Personal, Professional, and Community Responsibility (PPCR). This decision was based on input from the 2020 Annual Academic Assessment Retreat.

Question #1 below is designed to engage program faculty in thinking about how they can or already do promote student learning in this core competency.

1. Personal, Professional, and Community Responsibility: The knowledge and skills necessary to promote personal flourishing, professional excellence, and community engagement.

- **What would you hope a student would say if asked where in your program or support service they had the opportunity to develop proficiency in this Core Competency? (500 characters or less)**

We would hope that our MS graduates communicate that the degree prepared them for a professional career in biological sciences, and/or enabled them to pursue more advanced research opportunities within the professional, agency and scientific research community.

- **Do you have an example that could be a model for the university of an intentionally designed course, assignment, or activity that showcases the student learning in this core competency? ☐ Yes ☒ No**

If yes, please briefly describe. (500 characters or less)

- **Do you have any ideas about where your program or the university might develop other intentionally designed opportunities for students to develop proficiency in this core competency? ☒ Yes ☐ No**

If yes, please briefly describe. (500 characters or less)

We feel there is untapped potential to increase collaboration and partnerships with local (community) agencies to cultivate additional professional development and educational opportunities and to increase enrollment in the program.

PROGRAM STUDENT LEARNING OUTCOMES

2. Please list the Program Student Learning Outcomes your program assessed in AY21. For each outcome, indicate one of the following: Exceeded faculty expectations, Met faculty expectations, or Did not meet faculty expectations.

Example: Communicate effectively in a variety of contexts and formats – Exceeded faculty expectations.

The MS degree for the Department of Biological Sciences has four student learning outcomes, and all were assessed this academic year.

The successful candidate for the MS degree in Biological Sciences will:

1. Have a working knowledge of the fundamental concepts of biology across a broad range of fields, and have a demonstrated mastery of at least one focus area within biology. - Met faculty expectations.
2. Have a working knowledge of the principles of the scientific method, of the methods and technology of biological research, and of appropriate quantitative methods for the analysis of scientific data. - Met faculty expectations.

3. Be capable of writing a publishable scientific paper, and presenting research findings at scientific conferences. - Met faculty expectations.
4. Be prepared for a career in biological sciences, and/or able to pursue more advanced research opportunities. - Met faculty expectations.

3. Describe your assessment process in AY21 for these program student learning outcomes, including the collection of data, analysis of data, and faculty (and other, e.g., advisory board) conversations around the findings. (750 characters or less)

The Dept. of Biological Sciences Graduate Affairs Committee (GAC) works with the administrative assistant to gather data relevant to SLOs. Data is gathered from student annual reports, responses to queries sent to all students and faculty in the program, an exit survey sent to all graduates, and a Google sheet utilized to track student progress. Metrics analyzed include data on student publications and presentations at local, national, and international meetings, semesters to degree completion, number of students in the program, number of graduations, number of faculty advising students, and the number of students per faculty. SLOs are also assessed by a public oral thesis defense and by departmental review of the written thesis.

4. What are the findings and what do they tell the faculty about student learning in your program? (750 characters or less)

A decreasing number of graduates in the program (peak of 13 in 2014; 2 in 2019) that was correlated with the net loss of 10 Biological Sciences faculty, appears to be reversed. 7 students defended their MS in Biological Sciences thesis in AY19/20 and 8 defended in AY20/21. The average number of semesters to degree completely for students defending in AY19/20 and AY20/21 was 6.8, a decrease from 7.7 (2017), 8.0 (2018) and 9.0 (2019). Enrollment has also increased (to 30) from lows of 22 (2015) and 24 (2017). Most importantly, 100% of the graduates that replied to our exit survey continue to indicate that they have gained employment in science research, or related fields, or are continuing their graduate research at the Ph.D. level.

5. Based on the findings, did the faculty make any recommendations for changes to improve student achievement of the program student learning outcomes? Please describe the recommended action, what improvement in student learning the program hopes to see with Created this change, the proposed timeline, and how the program will know if the change has worked. If no recommendations for changes were made, please explain that decision. (750 Characters or less)

The GAC, in consultation with departmental faculty, developed Biological Sciences-specific thesis writing and formatting guidelines. The guide was developed to aid students in successful thesis writing and ensure consistency across the various research specialties represented by our faculty. The impact of the guide will be assessed by review of the comments from departmental reviews of written theses. We also continue to refine information flow to students and faculty regarding student degree progress by adapting the type of information that we are tracking. The Graduate

Student Handbook, which was made electronic in 2019, is also continuously updated to reflect current university and departmental policies.

PROGRAM IMPROVEMENTS AND ASSESSING IMPACT ON STUDENT LEARNING

6. In the past academic year, how did your program use the results of previous assessment cycles to make changes intended to improve student achievement of the program student learning outcomes? Please check all that apply.

- ☒ Course curriculum changes
- ☐ Course prerequisite changes
- ☐ Changes in teaching methods
- ☒ Changes in advising
- ☐ Degree requirement changes
- ☐ Degree course sequencing
- ☐ Course enrollment changes (e.g., course capacity, grading structure [pass/fail, A-F])
- ☒ Changes in program policies/procedures
- ☐ Changes to Program Student Learning Outcomes (PSLOs)
- ☐ College-wide initiatives (e.g., High Impact Practices)
- ☐ Faculty, staff, student development
- ☐ Other
- ☐ No changes were implemented in AY21.

If you checked “Other” above, please describe. (100 characters or less)

7. Do you have any information about how well these or other past improvements are working? Are they achieving their intended goals? Please include any data or assessment results that help you demonstrate this. (750 characters or less)

In order to meet demand, expand student opportunities and increase tuition revenue, the Department of Biological Sciences developed a non-thesis MS option in Biological Sciences. The degree option was submitted and approved through the multiple levels of curriculum review during AY20/21 and was implemented in fall 2021. Two students enrolled in the program for fall 2021, but one subsequently delayed her start date due to family reasons. We will be assessing the success non-thesis option in future years and will continuously refine the program if necessary based on feedback from the assessment process.

STUDENT SUCCESS AND THE CLOSING OF EQUITY GAPS

8. Programs are not required to respond to question #8 below for their report due on October 15, 2021. Question #8 will be required for the next round and moving forward.

- 9. Do you have any examples of post-graduate success you want to highlight? For example, major scholarships, the percent of students who pass licensure examinations, the percent of students accepted to graduate programs, the percent in post-graduation employment in the field or a related field. (750 characters or less)**

The Biological Sciences MS program, with its strength in Biomedical and Ecosystem Health Sciences research, is clearly contributing to fulfilling the diverse employment needs of the State of Alaska and beyond. We survey all graduates annually and all graduates since 2011 have gained employment in science research, or related fields, or are continuing their graduate research at the Ph.D. level. Our program's strengths are its breadth, and its focus on individualized research and educational experiences that students can tailor to their future goals. Employment opportunities for our graduate students remain strong with no indication of market saturation.

DEAN SECTION (Due to the program on January 15)

- 1. Based on the program's responses above, what guidance and support do you have for the program moving forward? Is there a particular area the program should focus on?**

There seems to be untapped potential to increase collaboration and partnerships with local (community) agencies. This could be used to cultivate additional professional development and educational opportunities, and also to increase enrollment in the program.

It is recommended that all programs review their Program Assessment Plan to ensure clear inclusion of the new UAA Core Competencies and in particular to address the closing of any equity gaps in the program.

- 2. Is there something the program is doing particularly well in terms of its processes for the assessment and improvement of student learning, including the closing of equity gaps, that might serve as a model for other programs? If yes, please explain. You may skip this question. (750 characters or less)**

The non-thesis option is a very good idea as it promises to reduce time to completion within the degree while still serving the industry. As the program develops, it will be important to monitor its success as it could serve as a model for other programs.

Dean's signature: *Jenny McNulty*

Date: December 14, 2021