

2022 ANNUAL ACADEMIC ASSESSMENT REPORT FORM
(Due October 15 to the dean)**PROGRAM SECTION (Due to the dean on October 15)****Submission date:** 10/14/2022**Submitted by:** Rachael M. Hannah Ph.D, Associate Professor of Biological Sciences,
rmhannah@alaska.edu**Program(s) covered in this report:** Biological Sciences BA/BS

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):** N/A**If explanation is necessary, such as only some of the certificates and degrees are covered by the specialized accreditation, briefly describe:****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 is phasing in the integration of the core competencies into ongoing processes, including program student learning outcomes assessment. Personal, Professional, and Community Responsibility (PPCR) was integrated into the AY21 Annual Academic Assessment Report. The AY22 Annual Academic Assessment Report now also integrates Effective Communication.

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

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

- **If last year you provided your program's current or planned example of an intentionally designed course, assignment, or activity that develops and showcases the student learning in this core competency, please discuss that implementation and any observations you have regarding how well it is working. (500 characters or less)**

BIOL A413 Neurophysiology was identified last year as a course that meets this objective, however for AY 2021-2022 it was not offered. However, several past students of this course engaged in external science educational events such as the UAA Brain Bee in the Spring of 2022, and one student did their honor's thesis based on the materials learned in this course.

- **If last year you *did not* identify a current or planned example of an intentionally designed course, assignment, or activity that provides students the opportunity to develop and showcase this core competency, please identify one now. (500 characters or less)**

B. ***Effective Communication: The knowledge and skills necessary to engage in effective communication in diverse contexts and formats.***

- **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)**

Students would recognize that they developed proficiency in this core competency in the following courses: BIOL A108, BIOL A243, BIOL A273, BIOL A310, BIOL A311, and BIOL A492.

- **Provide your program's current or planned example(s) of an intentionally designed course, assignment, or activity that showcases the student learning in this core competency. (500 characters or less)**

The third PSLO for the Biological Sciences program is to "Read, analyze and synthesize primary literature, and communicate scientific concepts and data in written and oral form." Artifacts to support student proficiency include; a pre-proposal letter written to a granting agency in BIOLA492, presentations on their scientific studies in BIOLA108, BIOLA243, BIOLA273, BIOLA311. Additionally, BIOLA498 students present their research at UAA's annual student research and scholarly activity symposium.

PROGRAM STUDENT LEARNING OUTCOMES

2. Please list the Program Student Learning Outcomes your program assessed in AY22. 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.

(3) Read, analyze and synthesize primary literature, and communicate scientific concepts and data in written and oral form. This work met faculty expectations.

3. Describe your assessment process in AY22 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)

To evaluate the learning outcome in AY 22 our committee of 3 faculty members collected artifacts from lower division and upper division courses (BIOL A108, and BIOL A492) that contained assignments that allow students to share their science writing skills. We then used the Vision and Change Oral and Written Communication Rubric and evaluated a sample of artifacts. We compared median and mode between the lower division and upper division courses. On October 7 we presented our findings at a faculty meeting for discussion.

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

Students are attaining proficiency in standard methods of science communication within BIOL A108. However, our rubric does not appropriately account for other types of scientific communication outside of the traditional lab report format. Thus the work completed in BIOL A492 does not accurately reflect the student's scientific written proficiency based on the measures assessed within our communication rubric. Science communication is rapidly evolving and our instructors are keeping pace with these changes, but our assessment rubric has not evolved to keep pace with the current modes and methods of scientific communication.

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 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)

Faculty have made several suggestions to both improve the assessment process and also to improve student achievement. First, we are now communicating the PSLO we are assessing to the entire faculty at the beginning of the academic year and reminding them of the rubric we use to score the artifacts. We believe this will allow students and faculty to reflect on the level of communication we hope they achieve. Additional artifacts will be collected from at least two other courses, possibly

BIOL A273/243, BIOL A310, BIOL A311, and BIOL A455. While student achievement might remain similar, we will have a fuller picture of their communication abilities.

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 AY22.

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)**

Much of the changes in the past academic year were in response to pandemic restrictions. Many faculty have been engaging in professional development that supports inclusive learning paradigms and implementing zero cost textbooks within their courses. Many of these changes do not have immediate results, rather, they support a holistic approach to learning and student persistence. It remains to be seen whether or not students are persisting within our degree program to a greater extent than previous academic years. Due to the changing nature of science communication we have dropped the eportfolio requirements that have resulted in a reduced stress for students for a component that is not utilized within our field.

8. PROGRAMS ARE NOT REQUIRED TO RESPOND TO QUESTION #8 FOR THEIR REPORT DUE ON OCTOBER 15, 2022. IT IS HERE JUST FOR THEIR REFERENCE.

- 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)**

We do not have these data in percentages, but we do know that one student is now at a SUNY MD/PhD program. At least two students have found employment in a related field, one at ANTHC and another at ADF&G. Two undergraduate researchers were coauthors on a paper with Dr. Stecyk. Another undergraduate student published with Dr. Bortz. Two other students presented at national conferences (SACNAS and CUR). One of our majors also made the Olympic team!

DEAN SECTION (Due to the program on January 15)

After completing the Dean Section and signing it, the dean should email this form to the program, and copy uaa_oaa@alaska.edu for posting. If the program is delivered on one or more community campus, the dean should consult with the appropriate community campus director(s) on the response and copy the appropriate community campus director(s) when emailing the response to the program.

- 1. Based on the program's responses above, what guidance and support do you have for the program moving forward? (750 characters or less)**

Since Biology, like many programs, has gone to a rotation method of upper division courses, it may be wise to have the major-specific core competencies built into and assessed in a variety of courses. The department has acknowledged the need for updating their assessment processes and rubrics to more accurately reflect "current modes and methods of scientific communication" and they are encouraged to follow up on this. Also acknowledged was the need to communicate the current assessment PSLO(s) as earmarked, to faculty, to incorporate this up front into the curriculum. This should result in more clearly identifiable areas for assessment and evaluation.

- 2. What is the program doing particularly well in terms of its processes for the assessment and improvement of student learning, for example, the achievement of the Program Student Learning Outcomes, the closing of equity gaps, or addressing the core competencies? (750 characters or less)**

The department has introduced an assessment process that involves multiple faculty and thus has a larger impact on teaching and learning. The department is also commended for assessing science writing skills at various points in a students' career is important to demonstrate growth. The departments' review of their grading rubric as well as adopting ZCT and inclusive learning practices is also commendable.



Academic Affairs
UNIVERSITY of ALASKA ANCHORAGE

3211 Providence Drive
Anchorage, AK 99508-4614
907.786.1050

Dean's signature:

Jenny McNulty

Date: 1/9/2023