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: Cindy Trussell, Professor, citrussell@alaska.edu

Program(s) covered in this report: Natural Sciences 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): 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:

INSTITUTIONAL STUDENT LEARNING CORE COMPETENCIES

In 2020, UAA launched a consensus-based, deliberative process to identify the key skill sets 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)*
   Many courses in the biological sciences curriculum intentionally engage students to explore their communities and test biologically related question(s). This type of course-related research allows them to connect to their community and potentially increase their identities as scientists. Students have opportunities to volunteer and engage with UAA Brain Bee, UAA Stem Day, and community-engaged projects. BIOL A465 prepares students for UR.

   - **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)*
   BIOL A413, Neurophysiology, students have opportunities to engage in community learning projects that directly impact K-12 students in STEM in addition they have near-peer opportunities.

   - **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)*
   To promote community engagement and professional excellence at the same time, we feel that it would be worth exploring community-based CURE (Course-Based Undergraduate Research Experiences) development in our lower-division lab courses. Our Experiential Learning courses already offer inquiry-based research experiences adding the community component would provide students an opportunity to give back while learning.

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.
Apply scientific data, concepts, and models to craft interdisciplinary explanations of scientific ideas across two of the natural sciences.

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)*

To evaluate the learning outcome in AY 21 our committee of 3 faculty members collected artifacts from both lower division and upper division Experiential Learning (EL) courses (BIOL A243, BIOL A273, BIOL A311, BIOL A342, BIOL A442, and BIOL A465). We then used the Process of Science Rubric and evaluated a sample of these artifacts. We compared median and mode between the lower division and upper division ELs. In addition, we collected IR grade data and demographics for these courses. We continue to college ETS data (not assessed this year because of the PSLO). On October 1 we presented a draft of our findings at a faculty meeting for reflection, discussion, and feedback.

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

Assessment of BIOL_A243 and BIOL_A273 courses used AY 20/21 IR grade data as a baseline understanding of the achievement of PSLO (92.5% pass, 86% A or B). Assessment artifacts were graded independently by the committee with a rubric to assess achievement of PSLO#2 for experiential learning BIOL_A243, 273, and 4 upper-division courses (311, 342, 442, and 465). Assessment reflected steady achievement as students progressed from 243/273 EL (median 2.8/4) to 311/342 EL (median 2.8/4), with challenges achieving the expected outcomes at advanced 442/465 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 to BIOLSCI course instructors for improvement.

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)*

Based on an assessment of EL, we plan to improve our process to capture and provide feedback about challenges in undergraduate success: improve communication with EL faculty by reviewing the PSLO#2 (process of science) rubric prior to each semester; assess advanced independent study EL (498) and thesis (499) artifacts to gain an additional contextual understanding of student achievement; improve quantitative reasoning (our lowest PSLO#2 assessment point) across the curriculum.

Though not based on the findings this year, we have decided to include demographics and grade data 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.

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)*
Redesigning our assessment plans and process to use IR data and more course artifacts.

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)*
We made the decision to remove the ePortfolio as a degree requirement because it put a tremendous burden on our students that did not provide additional support achieving the PSLOs because the reflection of learning is built into the scientific method. In addition, the implementation and process of using ePortfolios were unduly burdensome for faculty as well. We switched to gathering artifacts directly from the faculty which allowed us to assess the PSLO about the process of science this year.

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)*

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?**

   The program is encouraged to implement the findings noted in question 5.

   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.**

   The program does a great job of assessing courses with experiential learning as a component at both the lower and upper division levels.

Dean's signature: *Jenny McNulty*   **Date:** December 14, 2021