



Date: February 21, 2020

To: John Stalvey, Interim Provost

From: John Petraitis, Interim Dean, College of Arts and Sciences

Cc: Khrys Duddleston, Professor; Director, Biological Sciences
Jonathan Stecyk, Associate Professor

Re: AY20 Expedited Program Review Findings

Program/s in this review: Biological Sciences MS

Specialized accrediting agency (if applicable): None

Campuses where the program is delivered: Anchorage

Members of the program review committee:

Khrys Duddleston, Professor and Department Director
Jonathan Stecyk, Associate Professor

Centrality of Program Mission and Supporting Role

UAA's mission is to discover and disseminate knowledge through teaching, research, engagement and creative expression. UAA is committed to serving the higher education needs of the state, its communities and its diverse peoples. It is also committed to instruction at multiple academic levels, success of all students regardless of their higher education goals, and service to the diverse peoples and communities of the state. UAA's core themes are (1) Teaching and Learning, (2) Research, Scholarship and Creative Activity, (3) Student Success, (4) UAA Community, and (5) Public Square. UAA values international and intercultural education, diversity of experiences and perspectives, and the diversity of our unique location in Southcentral Alaska that comes from the Alaska Native peoples of this area.

The College of Arts and Sciences contributes to UAA's mission with a suite of programs that provide, among other things,

1. general education courses for undergraduates in CAS and other Colleges,
2. opportunities for undergraduates to pursue majors in the humanities, social sciences, natural sciences, and the arts, and

3. opportunities for faculty and students to pursue research and creative activities in CAS's academic disciplines,
4. graduate programs for advanced studies.

Given decreased enrollments across UAA and significant budget cuts to CAS, the challenge is to serve UAA's and CAS's missions with only 75% of the funds it had in 2018-2019. CAS's shrinking budget is especially challenging for programs that rely on state financial appropriations through CAS because the programs have a gap between (a) the total costs of everything the program does and needs, and (b) the tuition CAS receives to cover those costs. This describes most programs in CAS: most rely on state appropriations and CAS has 30% less than it had two years ago.

CAS's Department of Biological Sciences MA contributes to CAS's and UAA's mission, and is unusually important in serving UAA's research mission, by connecting graduate students with research-active faculty in state-of-the-art facilities. Faculty in the MS program are embedded in the BA-BS program in Biological Sciences. Students in the MS program are also embedded in the BA-BS program in the Department. Beyond contributing to faculty research and their own research, graduate students in the MS program cover many of the lower-division labs for general education students and undergraduates in Biological Sciences.

Program Demand (including service to other programs), Efficiency, and Productivity

As to program demand, the MS in Biology retains a steady number of students, and with 26 students in 2019 it was at the CAS median for number of students in graduate programs. As to efficiency, however, the program has financial challenges. The gap between UAA's estimate of (a) the program's instructional costs and (b) the program's tuition revenue is so steep that it is more than two standard deviations larger than the average gap in CAS's graduate programs. According to UAA's budget calculations, the program only brings in 25% of its instructional costs, the lowest return of any of CAS's masters or doctoral programs. With so many large undergraduate classes in Biological Sciences, the BA/BS program easily covers its costs with tuition, but the surplus from the undergraduate program is more than surpassed by the deficit in the MS program. As a result, when all costs for running all programs in Biological Sciences are combined (including costs for instruction, research time, and service), the Department operated at a deficit in 2019, requiring the allocation of state appropriations to cover the overall gap. As to productivity, there are challenges, too. Since 2013 the program average 5.4 awards per year, far below the average of 13.8 in CAS's graduate program, and the number of awards in Biological Sciences fell to 4, then 2, and then 2 again in the academic years of 2017, 2018, and 2019, respectively.

Program Quality, Improvement and Student Success

The program has high quality, anchored by research-active faculty who are doing important work with graduate students by their side in the lab and field. Those faculty and their students are involved in large-scale collaborative research efforts and working with important community partners. Program graduate do well after finishing the degree, getting either jobs or admission into doctoral programs. The program is also developing a non-thesis option that could get more students through the program faster.

Program Duplication / Distinctiveness

Although UAF has an MS in Biological Sciences, the two programs are not the same and, even if they were the same, duplication is defensible: both programs have 20+ students (a reasonable critical mass), and as long as both programs require a thesis then both programs require onsite supervision from research-active faculty. Eliminating either UAA's program or UAF's program likely means fewer master-level trained biologists for Alaska.

Commendations and Recommendations

Program faculty are commended for doing some of the most important research in Alaska, and being among the leaders in helping UAA in one of its core missions: research. The faculty should also be commended for the hard work they put into their expedited program review submission.

Decision

Revise. Budget cuts are forcing CAS to evolve quickly, doing less of some things it did in the past, especially in programs and departments where the various revenues do not cover the program's or department's costs for all the things faculty and program-specific staff do. Unfortunately, with its modest state appropriations, CAS likely cannot sustain the MS program in Biological Sciences in its current form. To be sustainable in the long-run with less state appropriations, the Biological Sciences Department must revise this program. UAA's program review process gives the following examples of area for revision:

- *faculty or staff workloads and assignments,*
- *curriculum,*
- *program delivery,*
- *student success initiatives,*
- *outreach and/or partnerships with the community or industry, program promotion and*
- *marketing, and facilities.*

All of these options should be on the table. The program must greatly narrow (if not erase) the gap between

- the costs of all the Department does (namely, teaching, research and service), all that it needs (e.g., specialized staff support), and
- all of the revenue they generate (namely, tuition, direct expenses and indirect recovery for grants, etc.).

It must also reverse the downward trend in the number of degrees awarded and show that the reversal is sustained. The program should report on its progress by Spring 2022.