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**ACADEMIC PROGRAM REVIEW  
INTERIM PROGRESS REPORT FORM**

This form is composed of three parts: the Program Section, the Dean 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 posted on the [Program Review website](#). 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.

The form uses narrative, text, and drop-down boxes. Narrative boxes have a character limit, which includes spaces. When using text and drop-down boxes, if you want to undo an answer, press “Control-Z” or “Command-Z.”

Responses are to be narrative only, and must be ADA and FERPA compliant. Do not embed any 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 AY21 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 can be published, as per the accreditor or external organization. Do not include appendices. Appendices to this form will not be accepted.

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

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**Submission Date:** 3/1/2021

**Name and title of person(s) submitting the report:** Jonathan Stecyk, Associate Professor; Khrys Duddlestone, Professor and Director.

**Program(s) in the report:** MS Biological Sciences

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

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

**Year of last review:** AY2020

**Final decision from last review:** Revision

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**PROGRAM SECTION**

*After completing the Program Section, the program should email this form to the dean, and copy [uaa.oaa@alaska.edu](mailto:uaa.oaa@alaska.edu) for posting. If the program is delivered on a community campus, copy the appropriate community campus director(s) as well.*

**For each current recommendation listed below, provide a timeline for addressing the recommendation, an indication of how you will know when the recommendation has been successfully achieved, a brief**

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description of actions taken to date, and any evidence that the actions have been successful. Programs can access current data on the [IR-Reports Program Review site](#).

***Recommendation 1: Develop a non-thesis option. To inform the revision, conduct an analysis of the recent increase in the number of semesters to graduation, which might be causing a decrease in the number of awards per year. The revision should be completed in AY21 for implementation in fall 2021.***

**Timeline (2000 characters or less)**

Fall 2020: Develop non-thesis option for the Biological Sciences MS degree and gain faculty approval to submit the proposed changes to the UAA curriculum review process: Completed

Spring 2021: Gain approval through the UAA curriculum review process: In progress. On-track. The changes to the curriculum to incorporate a non-thesis option and distinguish it from the thesis option were approved by the College Curriculum Committee in January 2021 and by the Graduate Academic Board in February 2021. Currently, the revisions are scheduled to be reviewed by Faculty Senate.

Fall 2021: Implement non-thesis option: In Progress. On track. Pending approval at all remaining levels of the process, the non-thesis option for the MS in Biological Sciences will be implemented in Fall 2021.

**How will you know the recommendation has been successfully achieved? Include description of data or metrics used and method used to determine success. (2000 characters or less)**

Evidence of success will be the approval of the non-thesis option for the MS in Biological Sciences by all levels of the UAA curriculum review process. Once implemented, the non-thesis option will be assessed annually following the MS in Biological Sciences Assessment Plan.

**Actions taken to date and evidence of success to date. (2000 characters or less)**

As detailed in our original Program Review submission, the decreasing number of graduates in the program from a peak of 13 in 2014 to 2 in 2019, was highly correlated with the net loss of 10 Biological Sciences faculty. The trend also reflects the cyclical nature to the number of external awards that faculty acquire.

To reverse the trends and increase program vigor, the department implemented and continues to support a number of programmatic changes to encourage faculty to accept more students. These include: 1. recruiting TAs; 2. increased flexibility in graduate supervisory policy to allow any UAA faculty to serve as primary graduate advisor, and 3. informing and encouraging students to apply for sources of external funds.

Evidence of success to date exists in a reversal of the trend of decreasing number of students graduating from the program and strong enrollment numbers. There are currently a total of 35 Biology and 7 Interdisciplinary Studies MS students housed in Biology. In fiscal year 2020, 10 Biology students and 3 Interdisciplinary Studies housed in Biology graduated. To date, in fiscal year 2021, 7 students have graduated with an MS in Biological Sciences. Additionally, 1 student has defended, but not yet

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graduated. The average number of semesters to degree completely for students graduating in 2020 was 6.8, a decrease from 7.7, 8.0 and 9.0 in 2017, 2018 and 2019, respectively.

Most importantly, and in complete agreement with the data for our MS graduates from 2011-2019 that demonstrated that MS BIOS graduates have been 100% successful in obtaining professional positions in biologically relevant fields, 100% of the 2020 graduates that replied to our exit survey indicated that they have gained employment in science research, or related fields, or are continuing their graduate research at the Ph.D. level.

**Future actions to take, if applicable. (2000 characters or less)**

We will continue to annually assess the thesis and non-thesis options (pending approval) for the MS in Biological Sciences following the MS in Biological Sciences Assessment Plan. The assessment includes, among other criteria, tracking of the number of students in the program, the number of students supervised per faculty, the number of graduates per year, the number of semesters to degree completion and employment success of the graduates. We will also continue to track students using our in-house developed student tracking protocol and encourage students to submit their thesis for graduation as quickly as possible after a successful defence. Indeed, for individual reasons, some students do not graduate the semester or subsequent semester following a successful defence, thus increasing time to degree completion.

***Recommendation 2: Narrow or erase the gap between the costs (teaching, research and service), needs (e.g., specialized staff support), and revenue generated (tuition, direct expenses, and indirect recovery for grants, etc.).***

**Timeline (2000 characters or less)**

Academic Year 18/19 to 20/21: Faculty workloads. Adjust faculty workloads, decrease term faculty FTEs, and decrease adjunct hires.

Spring 2020-Spring 2021: Curriculum. We have developed and added a non-thesis option to our Master of Science degree. One benefit we anticipate is increased enrollment in our MS program, and therefore increased tuition revenue at the graduate level. We anticipate that enrollment in this option will begin next academic year (academic year 21/22), and increase (along with the revenue stream) over the next 5-7 years.

Spring 2020-Fall 2020: Program Delivery. We have stacked several courses that were previously undergraduate only. Although this is counter to prior recommendations by NWCCU, this approach enables us to offer the courses necessary to deliver the non-thesis (more course-intensive) degree option without increasing labor costs while simultaneously boosting tuition revenue. To date we have stacked five additional BIOL courses and four additional MBIO courses.

Spring 2021-Spring 2022: Program Delivery. We will evaluate more undergraduate courses for potential stacking. We anticipate stacking 1 to 5 more courses.

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Spring 2021 and ongoing: Program Promotion and Marketing. We have created a trifold and flyer to advertise our graduate program and introduce the non-thesis degree. We have already begun circulating the flyer broadly via electronic means, including social media. At future scientific conferences we will advertise with the flyer and hand out the trifold to students and colleagues. Our goal is to encourage and increase enrollment, which will increase tuition revenue. We recently contacted advancement to work with us on more formal advertisement campaigns.

**How will you know the recommendation has been successfully achieved? Include description of data or metrics used and method used to determine success. (2000 characters or less)**

We will regularly assess efficiency. Costs considered include labor (faculty and graduate teaching assistantship paid from general funds), undergraduate workers, instructional and administrative, start-up if applicable, and appropriate proportion of grant administrator salaries. Revenues include tuition (80%) and the proportion of indirect allocated to the college, department and faculty member (36.4%).

We cannot accurately estimate efficiency of the graduate program using data from the UAA Official Program Review 2020 Updates table. The data are Total Faculty Pay from "Course Tuition by Faculty Pay" on the institutional research site, which includes pay from general funds and grants, the latter of which is a savings, not a cost. Also, most of our graduate courses are stacked 400/600, and the institutional research data divided costs of stacked courses equally across both levels, despite the proportion of 600-level enrollees ranging from 1% to 27% of total enrollment. Lastly, because instructional cost/credit is determined by dividing 100% of faculty salary by the credits faculty teach each semester, the data are biased against departments with significant workload research time. For example, the cost attributed to 13 faculty instructing 1cr of Directed Research/semester in 2019/2020 was \$288,354, an average of \$22,181/credit. The cost attributed to the Director of Biological Sciences teaching 1cr in fall, 2019, was \$45,111.

It is more appropriate to assess overall departmental efficiency rather than per degree program efficiency. Not only are most of our graduate courses stacked, but we do not have separate graduate faculty. All faculty who teach graduate courses also teach undergraduate courses, including lower division. In addition, faculty mentor both graduate and undergraduate students in their research programs, and it is difficult if not impossible to distinguish the proportion of research in a workload attributable specifically to the graduate program.

**Actions taken to date and evidence of success to date. (2000 characters or less)**

1. Created a non-thesis option in the graduate program, which will contribute additional tuition revenue at the graduate level. This is brand new so there is not yet evidence of success.
2. Stacked several 400-level courses with grad-level courses. This should increase tuition revenue at the graduate level. These actions are new; thus, there is no evidence of success yet.
3. We increased teaching by 30% and decreased research by 25% from academic years 18/19 to 19/20 (sustained in 20/21). We also reduced term FTE from 4.75 to 2.5. Via a variety of enrollment management strategies, we have decreased adjunct hires over the same time frame. These actions have resulted in an overall decrease in labor costs from academic years 18/19 to 19/20 of ~26%.

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In fiscal year 19/20, departmental costs (see above for list of costs included) = \$2,732,341. Revenue (tuition and indirect to the college) totaled \$2,972,634, resulting in an overall efficiency of 109%.

Five faculty left the department in academic year 19/20. While clearly these faculty losses were not by design, the downstream effect was a decrease in labor costs. Indeed, in fall 2020, as per Institutional Research "Course Tuition by Faculty Pay" table, Biological Sciences generated \$1,318,836 in tuition and spent \$1,047,649 in labor, resulting in an efficiency so far of 126%. No other costs or revenues have been considered in this calculation.

**Future actions to take, if applicable. (2000 characters or less)**

1. As noted above, we have reached out to advancement to work with them on developing a more formal and broad-reaching advertising campaign for our graduate program.
2. We will continue to engage in enrollment management across all levels to the best of our abilities. The challenges faced by the department to meet this recommendation are numerous, and given the degree of integration of faculty and programs across all levels, elimination of the graduate program will do little to solve fiscal gaps. Declining enrollments across the institution and department have resulted in declining tuition revenues that offset efforts to decrease labor costs. In spring 2021, overall enrollment in all BIOL+MBIO courses declined ~5.6% compared to spring 2020; however, enrollment in majors (undergrad and grad) BIOL + MBIO courses is up ~3.5% compared to spring 2020. Our overall enrollment declines are driven by decreased enrollment in service courses to the College of Health, namely BIOL A111 and BIOL A112 (~-11%). Indeed, enrollments in these courses have declined over the years, and we have decreased seat offerings by 24% in response to lowered demand. Seat offerings at extended campuses have declined only 5% in the same timeframe.
3. The department lost 5 tripartite faculty in a single year. These losses have the potential to negatively impact our graduate program tuition revenue, as we lost mentoring capacity for ~10 students/yr. These losses may also negatively affect total grant awards and therefore direct grant expenditures and indirect cost recovery. We are currently searching for a tripartite tenure track faculty member, and hope to hire additional faculty over the next few years.

***Recommendation 3: 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.***

**Timeline (2000 characters or less)**

As detailed in our original Program Review submission, the decreasing number of graduates in the program from a peak of 13 in 2014 to 2 in 2019, was highly correlated with the net loss of 10 Biological Sciences faculty. Similarly, it must be stressed again that with the loss of 5 research faculty in AY19/20, and based upon the average number of graduate students per tripartite faculty in our department, we lost the potential to mentor ~10 graduate students. Indeed, we only had 3 new graduate students commence their studies in Fall 2020 and none for Spring 2021.

Nevertheless, The department has pursued two paths to increase graduate student opportunities, and ultimately, the number of MS degrees awarded: 1. development and implementation of a non-thesis MS

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option; 2. pursual of new tripartite tenure-track faculty. Moreover, faculty are currently replacing their students that graduated in 2019 and 2020 (noted above). We are encouraged by the 9 applications to the Masters program for Fall 2021. Currently, 35 Biology students and 7 Interdisciplinary Studies graduate students are housed in our department.

A timeline and progress report for the development and implementation of the non-thesis MS option is detailed under Recommendation 1 above. The timeline for new faculty hires is detailed below.

Spring 2020: Formulate request for new faculty hires in the Department of Biological Sciences: Completed

Fall 2020: Request approval to engage in search for new faculty hires: Completed. Department was approved to conduct a search for an assistant professor of Ecology.

Spring 2021: Establish search committee, review applicants and hire a new faculty member for Fall 2021 start: In Progress. On track. Search committee established, screening documents developed, position advertised. Review of applications will commence in March 2021.

**How will you know the recommendation has been successfully achieved? Include description of data or metrics used and method used to determine success. (2000 characters or less)**

Evidence of success will be an increase in the total number of MS BIOS graduates per year and a decrease in semesters to degree completion. These metrics, among others, are assessed following the MS in Biological Sciences Assessment Plan. The expectation will be that the number of thesis-option graduates will be sustained at a level realistic for the number of and percent research workload of Biological Sciences faculty.

**Actions taken to date and evidence of success to date. (2000 characters or less)**

As noted under Recommendation 1, to reverse the trends and increase program vigor, the department implemented and continues to support a number of programmatic changes to encourage faculty to accept more students. These include: 1. recruiting TAs; 2. increased flexibility in graduate supervisory policy to allow any UAA faculty to serve as primary graduate advisor, and 3. informing and encouraging students to apply for sources of external funds.

Evidence of success to date exists in a reversal of the trend of decreasing number of students graduating from the program. In fiscal year 2020, 10 Biology students and 3 Interdisciplinary Studies housed in Biology graduated. To date, in fiscal year 2021, 7 students have graduated with an MS in Biological Sciences. Additionally, 1 student has defended, but not yet graduated. The average number of semesters to degree completely for students graduating in 2020 was 6.8, a decrease from that of prior year graduates (7.7, 8.0 and 9.0; 2017-2019).

**Future actions to take, if applicable. (2000 characters or less)**

We will continue to request to hire tenure-track faculty in the Department of Biological Sciences to ensure the student demands can be met. We will also continue to annually assess the thesis and non-thesis options (pending approval) for the MS in Biological Sciences following the MS in Biological Sciences Assessment Plan. The assessment includes, among other criteria, tracking of the

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number of students in the program, the number of students supervised per faculty, the number of graduates per year, the number of semesters to degree completion and employment success of the graduates.

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**DEAN SECTION**

After completing the Dean Section and signing it, the dean should email this form to the program, and copy [uaa.aaa@alaska.edu](mailto:uaa.aaa@alaska.edu) for posting. If the program is delivered on a community campus, copy the appropriate community campus director(s) as well.

For each recommendation, comment on the progress to date and provide commendations and guidance as appropriate. (2000 characters or less for each recommendation)

**Recommendation 1:** *Develop a non-thesis option. To inform the revision, conduct an analysis of the recent increase in the number of semesters to graduation, which might be causing a decrease in the number of awards per year. The revision should be completed in AY21 for implementation in fall 2021.*

**Recommendation 2:** *Narrow or erase the gap between the costs (teaching, research and service), needs (e.g., specialized staff support), and revenue generated (tuition, direct expenses, and indirect recovery for grants, etc.).*

**Recommendation 3:** *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.*

Dean's overall recommendation to the provost: Select a recommendation.

If recommending Suspension with Follow-up Program Review, that review will need to be in AY2022 or AY2023. Please indicate which year: Select Academic Year.

Dean's signature:



Date: Select date.

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**PROVOST SECTION**

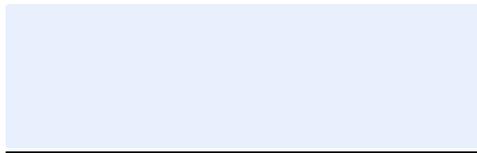
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*After completion and signature, the Provost will email the final decision to the program and dean, with a copy to [uaa.oaa@alaska.edu](mailto:uaa.oaa@alaska.edu) for posting. If the program is delivered on a community campus, copy the appropriate community campus director(s) as well.*

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

**Final decision:** Select a final decision.

**Provost's signature:**



**Date:** Select date.