

Summary of Assessment Results

PhD in Biological Sciences, Spring 2012

1. Enrolment and degree recipients: during AY 2011-2012 70 students were enrolled in this degree, and 10 students graduated (5 of these with a concentration in Wildlife Biology and Conservation). Both sets of numbers are on par with FY09 and FY10, and higher than in the three previous years. Graduation rates continue to be too low but steady.
2. All students entering the degree without an MS passed a qualifying exam. Of the 29 students who have taken their comprehensive exams, 25 (86%) passed both components on the first try, 2 passed on the second try, and 2 still need to retake the exam. Reports by outside examiners found all exams to be rigorous, and all but one examiner considered communications skills to be high and felt comfortable with the academic standards set by the department.
3. Supplemental information to the annual report was supplied by 39 students. These forms listed 14 journal publications and 2 book chapters published, and 4 journal manuscripts accepted for publication in AY11-12. This yields a publication+ acceptance rate of 0.5 per student per year, which is very good given that new students are unlikely to publish, and substantially higher than rates for MS students. The 10 students who graduated prepared a total of 34 manuscripts for submission to journals (3.4 manuscripts per student), consistent with our expectation of 3-4 manuscripts per student. Of these, 19 manuscripts were published, 6 were in review, and 9 were in preparation at the time of thesis submission.
4. These 39 students presented 42 oral presentations or posters on their research at national (outside of Alaska) or international conferences and 27 presentations at local conferences, and they gave 13 additional presentations (e.g., as an invited speaker) during AY-11-12. This is a rate of 2.1 presentations per student per year, very good given that new students are unlikely to present research results.
5. These same 39 students applied for 42 fellowships, scholarships, and awards (1.08 per student), with at least one application by 22 students (56%). They were awarded 16 fellowships, scholarship, and awards external to UAF (but including those in large federally funded programs such as EPSCoRE or CASE), and 7 fellowships, scholarships and awards from UAF (e.g., Global Change grant). This equates to 0.6 awards per student and a success rate of 55%. They also applied for 16 travel grants and received 6 external and 9 UAF travel awards.

Comments: Student numbers continue to climb slightly, and at 14% per year student graduation rates have increased slightly from the <10% found in FY06-08; however, this is still below the desired rate of 17-20% per year (5-6 years to graduation). Students in the PhD program are clearly overall more productive than those in the MS program (in terms of research presentations and publications), indicating a significant difference in experience or ability and in faculty expectations between the two degrees. Overall, student publication rates meet expectations of approx. 3-4 publications per student.

We have not collected presentation or award data prior to this year, so we have no basis on which to make a comparison between years. Our students are extremely active in presenting their research results to the outside world. Despite this, travel funding is the primary factor limiting more presentations : few of the presentations at conferences were supported by travel awards, and several students commented that they had abstracts accepted but insufficient funds to attend a meeting. However, awards are lower than one would expect at this level, and although participation rates were identical to that for MS students (low at approx. half the students), success rates were lower. This may be in part a reflection of applications to more competitive programs such as NSF DDIGs. We hope that the introduction of a seminar in proposal writing will increase the rate of grant applications and success.

Assessment improvements to be made:

1. We need to implement the collection of assessment data from additional faculty members at defenses.
2. We need to initiate surveys of common employers of PhD students.
3. We need to improve our ability to track student employment. This has been an issue for a number of years and is not easily resolved.

Program and Course Changes

The emphasis over the past year has been in increasing the number of courses available that provide training in professional skills such as writing manuscripts and proposals, strengthening teaching skills and improving statistical capacity. The following offerings reflect this:

1. Scientific Writing, Editing, and Revising was offered twice in 2011-2012. While we would like to be able to offer this every semester, currently the lack of faculty prevents us from doing so.
2. Research Design was offered twice in 2011-2012. We hope to be able to offer this every semester in the future.
3. A new seminar in grant proposal writing will be offered in Fall 2011. We expect to develop this into a regular course. This will initially be an every other year offering but we will change to every year if possible.
4. A new seminar course on basic programming in R was offered in Spring 2012. This course was taught by an adjunct and currently we are not able to offer it regularly, but we are investigating opportunities for doing so.

Other program and course changes:

Program Changes

1. The PhD concentrations in Biology, Botany, and Zoology were eliminated as there were no distinctions between them and students would simply pick a name when they applied for graduation. The Concentration in Wildlife Biology and Conservation remains, a reflection of the clearly distinct nature of this program.

Course Additions

1. Biol 488/688, Arctic Vegetation Ecology: Geobotany. This is part of a newly developed series in arctic vegetation that includes a summer field course.
2. Biol 457/657, Environmental Microbiology. This is a very popular course with interdisciplinary appeal that had been run as a trial course previously.

Course Modifications

1. Biol 689, Vegetation Description and analysis, increased from 2 to 3 credits to better reflect student effort required.

Course Deletions . These courses had not been taught in more than 5 years.

1. Biol 453/653, Molecular Biology
2. Biol 611, Fish Physiology
3. Biol 650, Fish Ecology