Expected Outcomes: PhD level of performance in Biological Sciences

PhD graduate will display 1) a comprehensive understanding of a sub-discipline of Biology, 2) the ability to produce significant research in their sub-discipline, and 3) be able to communicate their findings effectively.

Assessment methods

Method: Comprehensive Understanding of sub-discipline

PhD graduates will produce in their dissertation a comprehensive literature review of their sub-discipline, either as a separate introductory chapter or that which is contained in one or more chapters containing primary and original data that will be rated by their dissertation committee as well as an outside reader.

Findings:

100% of PhD graduates in 2011-2012 (n=13) produced an approved and comprehensive literature review section within their dissertation as certified by the students’ dissertation committees and their outside readers.

How did you use findings for improvement?

Results are shared with faculty and grad students annually. The PhD program was discussed at a faculty retreat in Spring 2012. Current discussions by the departmental Strategic Planning are underway to determine whether a common curricula for our graduate students is necessary to improve their exposure to and understanding of important biological areas. We will be using the results of the MS-T and PhD rubrics we generated in 2010-12 to determine the need for this core curriculum.

Additional comments:

None.

Method: Comprehensive Understanding of sub-discipline

PhD graduates will have been orally examined by their dissertation committee at their defense about the general understanding of the published literature within their sub-discipline.

Findings:

100% of PhD graduates in 2011-12 (n=13) displayed a mastery of the fundamental knowledge of their sub-discipline at their final oral exam as certified by the students’ committees and the outside readers. We used a modified rubric to assess the quality of knowledge and communication displayed by the students during these final exams. There were 3 attributes (Overall Quality of Science, Overall Depth and Breadth of Knowledge, and Quality of Communication Skills) with several sub measure per attributes. Students ranged in scores from 1-5 in various sub measures of the attributes. The overall average score on the three attributes was 4.2.

How did you use findings for improvement?
At a faculty retreat in Spring 2012, we continued to discuss the need for a common curricula for grad students to insure basic, common knowledge. We will apply the findings from the rubric to assess our current curricula and develop, if necessary, our new curricula. The departmental Strategic Planning Committee has been shown the data and the departmental Graduate Office is monitoring the progress of the students in the candidacy exams.

Additional comments:

None

**Method**: Ability to produce significant research

PhD graduates will have produced in their dissertation both independent and original research within their sub-discipline which will be evaluated by the students’ dissertation committees and outside reader.

**Findings**:

100% of PhD graduates in 2011 (n=13) produced both independent and original research within their dissertation that is suitable for publication, as certified by the students’ dissertation committees and outside readers.

How did you use findings for improvement?

Results are shared with faculty and grad students annually. The GSC produced a rubric by which the student’s committee could assess the research. This has not yet been widely used, primarily because of the difficulty of the form. The Graduate Studies Committee reviewed the faculty measures and comments on the forms, assessed the ease of use of the rubric, and have reformatted it to be easier to use and made a better scoring system (for future statistical analysis).

Additional comments:

None

**Method**: Effective Communication of Research

PhD graduates will have conducted research that is communicated to scientists in their sub-discipline by oral and poster presentations at national and international scientific meetings during their degree program.

**Findings**:

100% of our graduates (n=13) in the 2011-12 period have given either a poster or oral presentation at national or international meetings (and average of 3.5 in the course of their PhD program) on all or part of their dissertation research during their degree program.

How did you use findings for improvement?

We continue an excellent record of productivity which we share annually with the faculty and graduate students. The GPO has annual meetings with the students to encourage them to present their research in a timely fashion.

Additional comments:

None.

**Method**: Effective Communication of Research

PhD graduates will have conducted research that is communicated to scientists in their sub-
Findings:

100% of PhD graduates in 2011-12 (n=13) have published all or part of the independent and original research from their dissertation in a peer-reviewed or other scholarly outlet either before or within the first year of graduation. Students who have published in this time period averaged 3.15 paper/student (range 1-13).

How did you use findings for improvement?

This is an excellent record of productivity which we proudly share with our faculty and current grad students. Peer-review publication is the ultimate standard of quality. To have so many of our students publish so well and quickly bespeaks their quality. The GPO meets with all grad students annually, reviews their progress, and encourages them to present and publish their research before they graduate.

Additional comments:

None.