Expected Outcomes: MS Thesis Level of Performance in Biology

MS thesis graduates will 1) demonstrate a mastery of the fundamental aspects of a sub-discipline within the Biological Sciences, 2) demonstrate the ability to apply their knowledge to scientific research, and 3) be capable of writing scientific articles on research performed.

Assessment methods

**Method**: Knowledge of sub-discipline

Students will produce approved and comprehensive literature review sections within their thesis as certified by the students’ advisory committees.

**Findings:**

100% of MS thesis graduates in the 2011-12 period (n=4) produced an approved and comprehensive literature review section within their thesis as certified by the students' advisory committees. Since 2010, 17 of 17 graduates have produced approved literature reviews.

**How did you use findings for improvement?**

Results are shared with the faculty and current grad students annually. In Summer, 2011, the Graduate Studies Committee constructed a modified, easier to use rubric based on faculty comments which will attempt to give us more qualitative information on the various literature reviews by sub-discipline. This will allow comparison of the sub-discipline and a finer assessment of student performance. We have not yet used this rubric for assessment of the MS thesis. We are still testing the new rubric format in the final oral exam component. Once we finalize that we will construct the rubric for the thesis assessment.

**Additional comments:**

None

**Method**: Knowledge of sub-discipline

Students will display a comprehensive knowledge of their sub-discipline at their final oral exam as certified by the students’ advisory committees.

**Findings:**

100% of graduates (n=4) in the Fall 2011-Summer 2012 period displayed comprehensive knowledge of their sub-discipline at their final oral exam as certified by the students’ committees.

**How did you use findings for improvement?**

Results were shared and discussed with the faculty at their annual retreat and with the students at the first Fall Biolunch seminar. The Graduate Studies Committee fashioned a modified rubric for the final exam of the MS-T students to get a more quantitative idea of their performance rather than just the previous pass/fail system. The thesis committees of the 4 students used the new rubric which rate sub-points within 3 major attributes (Overall Quality of Science; Overall Depth of Knowledge, Quality of Communication skills). The score

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of the 4 students within each of the major attributes ranged from 1 (low) - 5 (Outstanding). The average range was 3-4.4. On the three attributes, the average score was: Overall Quality of Science - 4; Overall Depth of Knowledge - 3.9, Quality of Communication skills 3.5

Additional comments:

We are still refining the rubric.

Method: Application of scientific training

Graduates will be successful in obtaining employment or furthering their education by pursuing a higher degree within their research sub-discipline within a 2 year period as determined by alumni tracking records from faculty.

Findings:

50% (2 of 4) graduates are still in the biological sciences field (one is in a PhD program, the other has a job in her field). One is applying to medical school while the other is looking for a job in his field. Combing this years data with last year, 70% (12 of 17) MS-T graduates are pursuing careers in their field.

How did you use findings for improvement?

We will continue to track the students still looking for jobs or education in their field. Results are and will be shared with faculty and current grad students annually. We will also share these data with prospective grad students.

Additional comments:

None

Method: Technical Writing Capability

MS thesis graduates will publish all or part of their thesis in peer-reviewed scientific journals or other scholarly outlets within 3 years of graduation.

Findings:

Of the 4 MS-T graduates, 75% (3/4) have already published at least one paper on their research before graduating. 1 of 4 has submitted a manuscript but it has not yet been published.I has not yet submitted any manuscript. Students in the last four years that published within 1 year of graduating published an average of 1 paper/student. Tracking MS thesis graduates from 2007-2012, 59% (21/37) have published all or part of their thesis within 3 years of graduation.

How did you use findings for improvement?

Results are and will be shared with faculty and grad students annually. The Graduate Program Officer also meets with graduate students on an individual basis yearly to get updates on publication progress (so that publication occurs during or soon after graduation) and to encourage students to publish.

Additional comments:

None.