

UNIT REPORT

## Biology MS - Final Annual Report

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### Department of Biology Mission and Definition

Start: 07/01/2017

End: 06/30/2018

Providing Department: Biology MS

Department/Unit Contact: Robert Kissell

Mission/Vision/Goal Statement:

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Student Learning Outcome 1 - The Department of Biology desires an outcome of 100% of Master of Science candidates demonstrate a command of principles within general biology and the specialized disciplines in their area of interest through oral comprehensive examinations.

## Student Learning Outcome 2

Progress: Ongoing

Define Goal:

Student Learning Outcome 2: All Master of Science candidates in the Department of Biology will participate in extracurricular activities related to their disciplines.

Intended Outcomes / Objectives:

Student Learning Outcome 2 - All Master of Science candidates in the Department of Biology will participate in extracurricular activities related to their disciplines. These activities will include student organization membership, special field trips that are not class related, involvement in research activities of other graduate students, and attendance at scientific meetings.

## Student Learning Outcome 3

Progress: Ongoing

Define Goal:

Student Learning Outcome 3: All Master of Science candidates in the Department of Biology will acquire abilities to use scientific reasoning as codified by the structured process commonly known as the scientific method.

Intended Outcomes / Objectives:

Student Learning Outcome 3 - All Master of Science candidates in the Department of Biology will acquire abilities to use scientific reasoning as codified by the structured process commonly known as the scientific method. This outcome will be demonstrated through the research, written thesis, and oral comprehensive examinations.

## Assessment Goal 1

Goal/ Outcome/ Objective:

Increase individual student enrollment and thus graduation rates through recruitment, retention, and marketing.

Type of Tool: ~~Self-Diagnostic Assessment~~

Retention Rate

Frequency of Assessment: ~~Annually~~

Rating Scale/ Objective:

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On-going progress towards promotion, research projects and proposals, external funding, publications and presentations, extracurricular activities involving graduate students, and number of graduate students are summarized and included in the Departmental Annual Report submitted by the chair to the Dean of the College of Arts and Sciences. In 2002, the Department of Biology modified promotion guidelines such that research and graduate student mentorship were required for promotion to the ranks of Associate Professor and Professor. In addition, the department developed a differential teaching load policy in 2010 that provides faculty actively involved with research and graduate student mentorship with a reduced teaching load should they select the research track. The departmental chair monitors the number of faculty promoted and the number of faculty agreeing to the research track on an annual basis.

### Assessment - Student Learning Outcome 1

Goal/ Outcome/ Objective: All Master of Science candidates in the Department of Biology

Type of Tool: Exit Exam

Frequency of Assessment: Each semester

Rationale:

Comprehensive Oral Exams are conducted at end of each graduate student's degree program. These exams are administered by individual graduate faculty committees near the completion of each student's program.

Oral comprehensive examinations consist of two parts: questions regarding the thesis, and questions evaluating knowledge of general biological principles and topics within the student's area of specialization. Graduate committee membership includes a minimum of three faculty members; two from the Department of Biology whose research interests closely match those of the student, and one from an area outside the area of specialization that may come from another department. Major advisors record questions asked and the number of correct and incorrect responses. Successful completion of the oral examination requires a unanimous vote from all committee members that the student has passed both parts of the exam. The departmental chair tracks examination results and includes the data in the Departmental Annual Report submitted to the Dean of the College of Arts and Sciences.

### Assessment - Student Learning Outcome 2

Goal/ Outcome/ Objective:

All ~~SOBIOBS~~ ~~OKH~~ candidates in the Department of Biology will participate in extracurricular activin

incorrect responses. Successful completion of the oral examination requires a unanimous vote from all committee members that the student has passed both parts of the exam. The departmental chair tracks examination results and includes the data in the Departmental Annual Report submitted to the Dean of the College of Arts and Sciences.

Graduate Seminar Evaluations are conducted near the end of each graduate student's degree program. Departmental faculty attend graduate seminars where students formally present their research and ask questions to ensure that graduate students have a thorough understanding of the scientific method.

Masters of Science degree students nearing the completion of their degree programs must enroll in BIOL 6930 (Graduate Seminar). Departmental faculty members attend graduate seminars and each seminar is independently graded by three departmental faculty members that cannot include the graduate student's major advisor. A seminar evaluation form (Appendix) is completed by each of the three faculty members, and a common grade is assigned based on the three evaluations. The seminar evaluation form includes an evaluation of the research design, such that principles in the scientific method are evaluated. Questions regarding each student's research are included to insure that each student understands the implications of their research and the scientific method.

### Results - Program Goal 1

Goal/Objective/Outcome Number:

Increase graduate student enrollment and thus graduation rates through recruitment, retention, and marketing.

Results:

#### TECH TRENDS

The Department of Biology has monitored enrollment trends for several years and used these trends to develop strategies to meet this goal [Program Goal 1 (Table 1)]. Only 16 M.S. students were enrolled during Fall 2013 and 2016. The number of graduate students increased in 2014 due, in part, to graduate teaching assistantships provided by the Graduate Studies Office. Those four assistantships were terminated in 2016. In 2017 the College of Arts and Sciences restored the four lost the year earlier. Retention of M.S. students has been approximately 100% since 2005, with all but two students graduating.

Table 1. Number of graduate students (M.S.) enrolled as Biology majors by year.

Year	Number of Graduate Students
2013	16
2014	22
2015	21
2016	16
2017	20

### Results - Program Goal 2

Goal/Objective/Outcome Number: Make significant progress toward increasing diversity.

Results:

#### TECH TRENDS

Efforts to increase diversity have met with mixed results (Table 2). Very few minorities have enrolled in our graduate program; four were enr





The departmental Graduate Policies Committee meets several times per year to analyze data and interpret results. Recommendations for enhancing the graduate program are discussed at departmental faculty meetings and policies affecting the program voted upon before implementation. The number of M.S. students increased significantly during the past two years, primarily because of graduate teaching assistantships provided by the College of Arts and Sciences. The M.S. program is expected to grow again in the near future as additional faculty members are hired and research funding sources are identified.


 Strategic Plan: Expand Financial Resources and Modernize Infrastructure

## Modifications and Continuing Improvement to Program Goal 2

Goal/Objective/Outcome Number:

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that can be afforded time devoted to research and still balance teaching. A change to the assessment plan will be made once this is agreed upon by the faculty; discussions of this topic will be on-going in 2017-2018.