

## **M.S. in Biology**

### **Program Purpose**

Graduate training in Biology fosters excellence in research in a wide variety of disciplines while emphasizing a holistic, interactive approach and an evolutionary perspective. Research in Biology utilizes theoretical and computational approaches, laboratory bench work and field work. Teaching excellence is fundamental to academic scientists, and students participate in teaching as part of their training.

### **Expected Learning Outcomes**

Students advance to full MS candidacy in at the end of their first year after successfully completing a preliminary exam with written and oral components. Independent research projects culminate with defense of a thesis dissertation, generally with all requirements completed in 2-3 years.

At the completion of their graduate program each student will have accomplished the following expected learning outcomes:

1. Acquire the skills necessary to conduct original scientific research in their area of interest, including project design, development and acquisition of techniques, data collection, analysis and publication. Students will acquire these skills through formal course work and hands-on training in active research laboratories.
2. General mastery of the scientific literature in biology, with advanced mastery of the scientific literature in the student's area of study. Mastery will be assessed by the student's ability to converse in both formal and informal settings that include discussions among colleagues, with visiting scientists, attendance at professional meetings and serving as an effective teaching assistant for at least one semester.
3. Ability to communicate the student's research and its relationship to the larger questions underpinning their research. During their time in graduate school, students will be expected to present a Research In Progress talk at least once before they graduate.
4. Completion of a thesis/dissertation that represents a significant contribution to scientific knowledge, and which is publishable in peer-reviewed scientific journals.
5. Ability to write an effective grant proposal. This ability will be assessed during the preliminary exam process.
6. Development of a professional portfolio that might include a curriculum vitae, résumé, summary of research and teaching experience and research interests and any other documents relevant to the student's career path.

Each student's progress towards these expected learning outcomes will be assessed by annual meetings with the student's supervisory committee, the preliminary exam, dissertation/thesis defense, and the completion of an exit interview at the end of the student's program of study.