

## Biology

### Program Mission Statement

To prepare graduate students for careers in the Biological Sciences. Students will receive discipline specific instruction in state-of-the-art biological techniques, and a holistic education in the many diverse fields of biology. Graduate students will integrate fine scale (e.g., cell and molecular) and emergent (e.g., ecology, evolutionary theory and statistical competence) biological principles into their graduate education. Students will be encouraged to become practicing scientists through exposure to experimental design and implementation, application of the Scientific Method, participation in professional scientific meetings in their disciplines, memberships in professional societies and completion of peer-reviewed publications. After graduation, students will be ready to pursue careers in academic, public, private and governmental realms.

### Student Learning Outcomes

#### Graduates will be able to:

##### Knowledge of Literature of Discipline (req)

- Review, obtain, and use primary literature in their fields.

##### Independent Research/ Professional Practice (req)

- Employ a sophisticated use of the scientific method.
- Formulate, mobilize and execute a scientific auto didactical research effort.

##### Professional Skills (opt)

- Cultivate and expand the breadth and depth of the technical skill sets pertaining to their chosen graduate track.

##### Communication (opt)

- Author a scientific paper.
- Present results of a research effort to professional peers at a scientific meeting.
- Clearly articulate biological principles to the public.

##### Critical Thinking (opt)

- Clearly articulate the basic tenets of evolutionary theory and how this relates to realms of biological inquiry.

### Assessment Approaches

The Biology program utilizes the following approaches to Assessment:

1. Written and oral exams to will determine content/discipline specific knowledge.
2. A thesis proposal, and subsequent manuscript generation, will determine knowledge of the literature of the discipline.
3. Construction and implementation of a novel thesis project will test the ability to engage in independent learning or scholarship.
4. A public thesis defense and dissemination of research findings at scientific meetings will demonstrate intermediate to advanced level professional skills.