

Departmental Objectives for the Undergraduate Degree Program

The Department promotes the advancement and widespread dissemination of knowledge about organisms and their environments from cellular to ecosystem levels of analysis. We prepare students for careers in academia, human and veterinary medicine, and professional disciplines that focus on the interaction between humans and the natural environment. Our overall goal is to produce graduates that (1) understand the core content of our discipline, (2) are competent in the research and communication skills necessary to share that knowledge, and (3) possess the career, social, and ethical awareness to remain lifelong learners who will appreciate, judge, and evaluate the role of scientific inquiry in society. Our specific objectives for the degree program are listed below.

Upon graduation, our majors will:

In the area of *core content knowledge*:

- Understand fundamental principles of evolution and the diversity of evidence that supports this unifying theory for the life sciences;
- Possess a working knowledge of biodiversity and systematics;
- Understand basic principles of ecology, physiology, genetics, and cell biology in terms of their historical foundations and currently active, “frontier” research areas; and
- Be able to articulate the relationships among these core disciplines and how application of an integrative approach to life science research contributes to our understanding of the natural world.

In the area of *research* and *communication skills*:

- Understand the scientific method and its application to the life sciences;
- Understand the concept of scientific peer-review and how to access peer-reviewed literature;
- Demonstrate the critical thinking ability to summarize and evaluate basic information on biological systems published in the scientific literature; and
- Demonstrate the ability to present scientific information clearly and concisely orally and in writing.

In the area of *career*, *ethical*, and *social awareness*:

- Understand the relatedness and distinctions among specialized fields of study within the life sciences as they relate to career options;
- Be prepared for admission into programs of graduate study, schools of human and veterinary medicine and related health professions, or for entry into the job market in fields related to the life sciences;
- Recognize and respect the central importance of scientific integrity to the advancement of science;
- Be able to formulate evidence-based arguments on matters of science that generate controversy in society; and
- Appreciate standards of responsible use of organisms and environments in research as well as in the application of knowledge that comes from that research.