School of Biological Sciences Program Learning Outcomes

The program learning outcomes for the School of Biological Sciences outline the broad areas of knowledge and competencies graduates of our undergraduate majors have had the opportunity to master during their degree work.

Program Learning Outcomes

Students will be able to:

1. Explain how evolution shapes organisms at all levels of biological complexity.

2. Analyze expression and heredity of traits in organisms.

3. Analyze how properties of biological molecules contribute to their functions and interactions.

4. Analyze how energy and molecules are transformed in reactions in biological systems.

5. Analyze how components of biological systems interact and respond to change.

6. Evaluate how human actions cause changes in biodiversity and the environment.

Program Competencies

Students will be able to:

1. Evaluate claims in scientific experiments, scientific papers, popular science, media, and other sources using evidence-based reasoning.

2. Apply appropriate statistical, mathematical, and computational tools to address biological questions.

3. Create informative graphs and other data visualizations.

4. Apply models and simulations to analyze complex biological systems.

5. Appreciate how concepts and skills from other STEM and non-STEM disciplines are used in Biology.

6. Use appropriate language and style to communicate science effectively to targeted audiences (e.g., general public, biology experts, collaborators in other disciplines).

7. Elicit, listen to, and incorporate ideas from teammates with different perspectives and backgrounds to accomplish a shared goal.

8. Recognize systemic socioeconomic, political, and cultural factors that affect how and by whom science is conducted and identify pathways to a more equitable scientific community

9. Apply biological research to propose solutions for societal problems affecting different stakeholders, especially for topical issues such as environmental change and societal justice.

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