BIOCHEMISTRY AND MOLECULAR BIOLOGY, B.S. (BERKS)

Begin Campus: Any Penn State Campus
End Campus: Berks

Program Learning Objectives

• Collaboration and Communication:
  • Students will be able to:
    • demonstrate the ability to work in teams to solve biochemical problems
    • communicate in a variety of formal and informal ways to discuss biochemical data

• Core Concepts:
  • Students will be able to:
    • trace energy/matter transformation, storage, and mobilization in biological systems
    • explain how genetic information is exchanged and stored
    • recognize how changes in biological structures can have varying effects on function
    • describe how evolutionary processes are an integral part of the molecular life sciences
    • explain examples of how organisms maintain cellular and molecular homeostasis

• Process of Science:
  • Students will be able to:
    • develop a hypothesis, design and conduct appropriate experiments
    • analyze and interpret data using appropriate quantitative modeling and simulation tools
    • keep an accurate laboratory notebook
    • participate in the peer review/revision process

• Quantitative Reasoning and Data Science:
  • Students will be able to:
    • apply basic quantitative competencies such as algebra, probability, statistics, unit conversions, and fundamental biological equations
    • organize, summarize, and interpret quantitative data
    • find and analyze data from large databases

• Science and Society:
  • Students will be able to:
    • explore the impacts of scientific research on society and how society influences/relied on research to inform decision-making
    • evaluate the ethical implications of biochemical research
    • recognize ethical issues in a variety of settings

• Scientific Evidence Evaluation:
  • Students will be able to:
    • discriminate among scientific claims presented in a variety of sources based on the strength of evidence
    • find appropriate published scientific literature