Housed within the Mellon College of Science, the Department of Biological Sciences has been a leader in science education for decades. Our goal is to give students the opportunity to experience the cutting edge of scientific training and innovation from their first day on campus. Providing a solid foundation to scientific practice is critical; therefore, we offer first-year students a variety of inquiry-based, hands-on courses that incorporate a wide range of topics and interests within Biological Sciences. All of these courses are taught by faculty that are leaders in their research field, and the interactions found in the classroom often lead to lifelong mentoring relationships. These courses facilitate the transformation of science students to scientists:

**Phage Genomics Research (03-115, 03-116)**
In this two-semester laboratory course, participants identify and characterize novel bacteriophages (viruses that infect bacteria) and then use modern computational tools to analyze the newly sequenced genome. Additional experiments to understand phage biology will also be performed based on analysis of the preliminary experimental results.

**Cellular Response to the Environment (03-126)**
This discovery-based research course introduces students to molecular biology, genetics, microscopy, and cell biology through analysis of protein localization changes in response to environmental changes. This mini course is designed primarily for students that seek a short term, hands-on experience before participating in independent, mentored research.

**How Biological Experiments Work—A Project Course (03-127)**
In the lecture half of this course, students learn about the techniques of modern biological research in molecular detail. In the project half, they will work in groups to use this information to create animation story boards that will be turned into high-end animations in collaboration with the Pittsburgh Supercomputing Center. This course is designed for students interested in learning molecular and cell biology techniques who may also have an interest in computer animation.

**Introduction to Computational Biology (03-310)**
This course provides an introduction to the computational tools and analytic approaches used in molecular and cell biology. Topics covered include genomic analysis, biological modeling, and image analysis. This introduction will prepare students to use computational approaches later in independent, mentored research projects.

These transformative experiences will provide the groundwork for short-term and long-term opportunities within biology, including upper-level coursework and independent research positions. Whether you intend to pursue a career in academics, industry, law, medicine, or politics and policy, it will be critical to understand and interpret scientific research findings for your professional success. The first-year experience is the initial step in your metamorphosis into a scientist. Choosing our program will provide a premier foundational experience to your academic and professional endeavors.