

MOLECULAR, CELLULAR AND INTEGRATIVE BIOSCIENCES

Graduate Program Head	Melissa Rolls
Program Code	MCIBS
Campus(es)	University Park (Ph.D., M.S.)
Degrees Conferred	Doctor of Philosophy (Ph.D.) Master of Science (M.S.) Dual-Title Ph.D. in Molecular, Cellular and Integrative Biosciences and Astrobiology Dual-Title Ph.D. in Molecular, Cellular and Integrative Biosciences and Microbiome Sciences Joint M.D./Ph.D. with the College of Medicine
The Graduate Faculty	View (https:// secure.gradsch.psu.edu/gpms/? searchType=fac&prog=MCIBS)

The Intercollege Graduate Degree Program (IGDP) in Molecular, Cellular, and Integrative Biosciences (MCIBS) is designed to prepare researchers across an array of specializations in the biological sciences that share an emphasis on trans-disciplinary training, an approach that considers the whole organism and spans the continuum of understanding from fundamental mechanisms of action at the molecular/cellular level of discovery, to the function of the organism in its environment, with applications that enhance health and well-being. To achieve this goal, the IGDP in MCIBS serves as an umbrella portal for the entry and subsequent training of the next generation of researchers for academic, industrial, non-profit foundation, government, and other research entities in the biomedical sciences. Researchers will be trained across a wide range of specializations in the biological sciences that share the goal to elucidate mechanisms of action at the molecular, cellular, and organismal level, including disease.

The program currently offers educational and research emphasis areas in Cancer Biology; Cell and Developmental Biology; Immunology and Infectious Disease; Microbiome Sciences; Molecular and Evolutionary Genetics; Molecular Toxicology; and Neurobiology, but is structured to remain contemporary with evolving or emerging fields within the biological/health sciences. Incoming students enroll in core courses of instruction covering basic biochemistry and molecular biology of cellular processes; ethics; and current research topics related to the diverse pathological mechanisms that underlie disease etiologies in humans and animals. In addition, students take specialized courses associated with one of the above programmatic emphasis areas or the option, as well as elective courses that complement and support their research interests and foci.

Calling upon the expertise of an extensive list of life science research faculty members representing an array of different departments across multiple colleges, the IGDP in MCIBS offers a unique opportunity to learn about and work in multiple bioscience disciplines. The MCIBS graduate program is supported by modern telecommunications facilities and equipment, and students not only explore new conceptual connections at the frontiers of research, but also engage in active group learning experiences and explore a variety of potential career opportunities before graduation.