

# BIOCHEMISTRY, MICROBIOLOGY, AND MOLECULAR BIOLOGY

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- virology
- X-ray crystallography

<b>Graduate Program Head</b>	Santhosh Girirajan
<b>Program Code</b>	BMMB
<b>Campus(es)</b>	University Park (Ph.D., M.S.)
<b>Degrees Conferred</b>	Doctor of Philosophy (Ph.D.) Master of Science (M.S.) Dual-Title Ph.D. in Biochemistry, Microbiology, and Molecular Biology and Astrobiology Dual-Title Ph.D. in Biochemistry, Microbiology, and Molecular Biology and Biogeochemistry
<b>The Graduate Faculty</b>	View ( <a href="https://secure.gradsch.psu.edu/gpms/?searchType=fac&amp;prog=BMMB">https://secure.gradsch.psu.edu/gpms/?searchType=fac&amp;prog=BMMB</a> )

The major goal of the program in Biochemistry, Microbiology, and Molecular Biology is to train students for independent research and teaching in the principal areas of those scientific disciplines. Students may enter the program from a variety of backgrounds such as biochemistry, biology, biophysics, cell biology, chemistry, genetics, microbiology, molecular biology, physics, and other related disciplines. The student's research may begin during the first year.

Research areas of faculty include:

- antibiotic discovery
- cell and developmental biology
- cell cycle control
- chromatin structure
- cryo-electron microscopy
- DNA binding proteins
- electron paramagnetic resonance spectroscopy
- enzymology
- genomics
- iron, lipid, cellulose and xenobiotic metabolism
- neurobiology
- metabolomics
- metallobiochemistry
- microbiology
- nuclear magnetic resonance spectroscopy
- parasitology
- pathogenesis
- photosynthesis
- plant biology
- proteomics
- regulation of gene expression
- RNA binding proteins
- RNA structure
- signal transduction
- transcriptomics