

## Preparation

Students entering the PhD. Graduate program are expected to have:

- A bachelor's degree in an appropriate, related discipline
- Classes in biochemistry, biological sciences, chemistry, and mathematics
- GPA  $\geq$  3.0 on a 4.0 scale
- Total GRE scores  $\geq$  60<sup>th</sup> percentile
- If first language is not English, a TOEFL score  $\geq$  620 (paper exam) or  $\geq$  95 (computer exam).

All students are accepted into the Department rather than into individual labs. Please feel free to contact faculty with specific questions regarding research, but individual professors do not evaluate applicants to their laboratories.

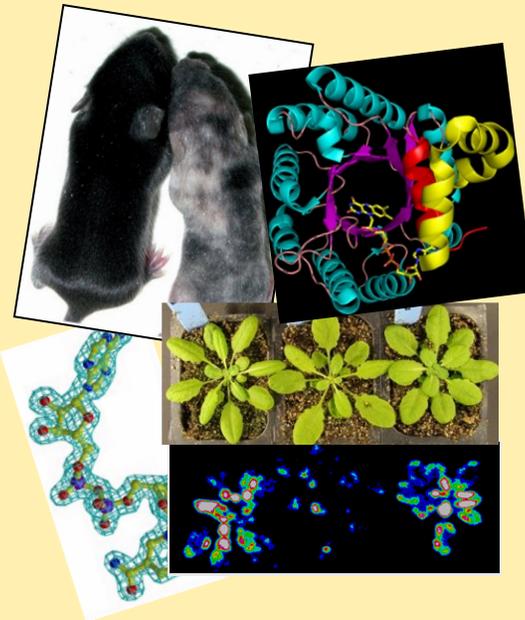


### Department of Biochemistry

117 Schweitzer  
University of Missouri  
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**A top-rated department**  
**with world-class**  
**faculty and a**  
**collaborative, supportive**  
**environment.**



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## Graduate PhD Program



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## Why Biochemistry at Mizzou?

*“The interactions with faculty and students both in the classroom and outside were essential in providing me with skills I continually use to navigate the academic world.”* (Jermaine L. Jenkins; Assist. Research Professor, Univ. of Rochester School of Medicine & Dentistry)

*“Favorite Part of Mizzou Biochemistry: how diverse the department is in their research fields, which gives you a wide variety of options!”* (Megan Sheridan; postdoc, Univ. of Cambridge, England)

*“I chose ... Mizzou because of its top notch professors in plant biochemistry and its collaborative environment.”* (Erica LaMontagne, Ph.D. candidate, MU Biochemistry)

*“Why Mizzou: Their interdisciplinary approach to science is exceptional.”* (Kwaku Tawiah, Ph.D. candidate, MU Biochemistry)

*Mizzou Biochemistry promotes a strong scientific community that encourages collaborative science and actively cares about the happiness and well-being of its people* (Jordyn Lucas, Ph.D. candidate, MU Biochemistry)



For more information, see [biochem.missouri.edu/grad-program/index.php](http://biochem.missouri.edu/grad-program/index.php)

## Research Areas

Students rotate through 3 or 4 labs during their first year before choosing a PhD thesis home laboratory.

**Beamer, Lesa** Structural biology: X-ray crystallography of medically important proteins  
**Zachary Berndsen** Molecular biophysics: Cryo-EM, structure-based vaccine design, lipoprotein structure/function  
**Burke-Aguero, Donald** Ribozyme mechanism and evolution; drug resistant HIV-1  
**Chapman, Michael** Structural Biology: Viral-Host Interactions and Enzyme Dynamics  
**Chen, Shi-Jie** Computational prediction of RNA folding and small molecule interaction; RNA nanotechnology  
**Cornish, Peter V.** RNA folding and dynamics, single molecule fluorescence  
**Deutscher, Susan L.** Peptide and antibody-based targeting of cancer; phage display for targeting agent identification  
**Durie, Clarissa** Protein complex structure & function in bacterial pathogenesis: Cryo-EM, protein translocation, enzyme kinetics  
**Folk, William R.** Gene expression and replication; plant medical uses; science education  
**Gates, Kent** DNA damage by antitumor agents, toxins and mutagens  
**Hannink, Mark** BTB-Kelch substrate adaptor family in development, oncogenesis and neurodegeneration  
**Heese, Antje** Protein trafficking in immune signaling; plant-pathogen interaction  
**Heng, Xiao** Virus:host interactions during the early replication of HIV-1; RNA structural biology  
**King, Gavin M** Single molecule biophysics  
**Koo, Abraham (Jeong-Kyu)** Biotic interactions, stress signaling, lipid metabolism in plants  
**Lubahn, Dennis** Biochemical genetics and epigenetics of estrogens and related receptors  
**Mawhinney, Thomas P.** Carbohydrates in cancer and bacterial infection; cystic fibrosis

**Peck, Scott** Signaling during host-pathogen interactions; proteomics of biotic and abiotic stress responses  
**Petris, Michael** Regulation of metal nutrition; impacts of copper on cancer and infectious disease  
**Phillips, Charlotte** Inherited and acquired disorders of muscle and bone; medical genetics  
**Quinn, Thomas P.** Cancer diagnostics, radiopharmaceutical imaging and therapy, nanomedicine  
**Schenck, Craig** Evolution of plant chemical diversity, core and specialized metabolism  
**Sharma, Krishna** Molecular basis of human disease  
**Stacey, Gary A.** Functional genomics of plant-microbe interactions and plant development  
**Sumner, Lloyd W.** Integrated metabolomics technology development and applications, plant specialized metabolism  
**Tanner, John** Structural biology of amino acid metabolism, structure-based drug discovery targeting cancer and eukaryotic pathogens  
**Thelen, Jay** Proteomics and phosphoproteomics of seed development, metabolism in oilseeds  
**Tipton, Peter A.** Mechanistic enzymology applied to agriculturally and medically important enzymes  
**Van Doren, Steven** Biophysical enzymology, molecular recognition by NMR, metabolomics of pulmonary disease,  
**Weisman, Gary A.** Nucleotide receptors and signaling in inflammation, cardiovascular and autoimmune exocrine disease  
**Zhang, Shuqun** MAP kinases and signaling in plant defense responses