

BIOPHYSICS, PHD

Biophysics is an inter-disciplinary PhD program in the biosciences. It brings together students from diverse backgrounds (from biology to biochemistry, chemistry, physics, bioengineering, computational biology, neuroscience, cell biology, and so on) who are interested in research at the cross-section between these disciplines.

Our broad inter-departmental program consists of approximately 60 faculty trainers (<https://biophysics.wisc.edu/labs/>) from departments that belong to five different colleges (Letter & Science, Agriculture & Life Sciences, Engineering, and the Schools of Medicine and Pharmacology).

This highly collaborative environment offers a spectrum of opportunities that include, for example, protein structure/function and engineering, nucleic acid and membrane biophysics, neuroscience, virology, as well as synthetic and system biology applied to both bacterial and eukaryotic organisms. These areas of research share the common goal of understanding biological systems in physical and mechanistic terms, the use of cutting-edge quantitative instrumental methods, and, frequently, the integration of computation and machine learning. Please find an overview of our research areas (<https://biophysics.wisc.edu/research/>) on our website.

UW-Madison is a center of excellence in structural biology, with major instrumentation facilities such as the National Magnetic Resonance Facility, the CryoEM Research Center, and the Midwest Center for Cryo-Electron Tomography. Trainers who participate in these centers offer outstanding research opportunities to students who want to become experts in the application and/or development of structural biology.

In addition, many other accessible facilities and instrumentation in our trainers' laboratories provide advanced training in spectroscopy, microscopy and single-molecule imaging, high-throughput methods, and the integration of experimental and computational methods applied to the analysis and modeling of macromolecules and biological systems.

Biophysics is an inclusive and collaborative community whose goal is to prepare students of diverse backgrounds with rigorous interdisciplinary and quantitative training for a future in research and teaching in academia, industry, and alternative careers. The program is flexible in its formal course requirements, emphasizing excellence in research. For this reason, the coursework can be tailored to the specific research interests and the diverse backgrounds of each student.

For more information, please visit the Biophysics Graduate Program website (<https://biophysics.wisc.edu/>).