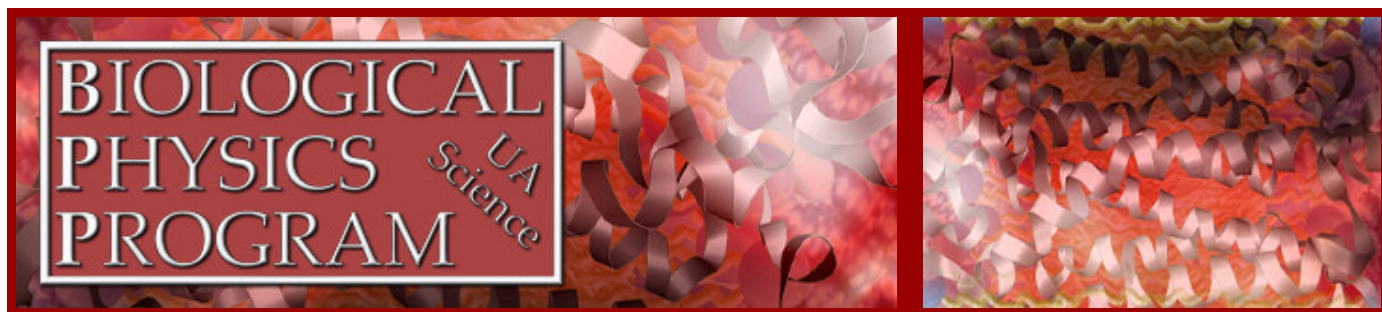


# Biological Physics Program



## About

At the scale of single molecules such as DNA, RNA, and molecular motors, research in our area focuses on issues in protein synthesis, such as how ribosomes move along mRNA. At the sub-cellular level, research explores photosynthesis and the properties of cell membranes and membrane proteins. And at the scale of individual cells, we investigate phenomena like signaling and locomotion. Multi-cellular dynamics, pattern formation, and the physics of evolutionary processes are also key components of our program.

Experimental methods include optical tweezers, single-molecule fluorescence microscopy, particle imaging velocimetry and image processing, and a variety of techniques in molecular and cellular biology and biochemistry. Theoretical work focuses on stochastic processes, elasticity, statistical mechanics, fluid dynamics, and nonlinear dynamics. Our theoretical and experimental groups also actively collaborate with faculty in the life sciences throughout the University of Arizona.

## The Aim

**Biological Physics** studies "the Physics of Life Processes" by applying the quantitative physical sciences approach to outstanding problems in Biology while also feeding crucial insights thus obtained back into Physics.

## Opportunities

- Biological Physics is a rapidly growing field of research. The BPP is a Graduate Program with a broad scope, involving Physics, Chemistry and Biochemistry & Mol. Biophysics.
- Graduate work involves teamwork and collaboration that cuts across the traditional boundaries of academic departments.
- Laboratory rotation and research opportunities in multiple departments.
- Opportunities for research fellowships.

[Graduate](#)<sup>[1]</sup>

Department of Chemistry and Biochemistry at The University of Arizona  
P.O. Box 210041, 1306 East University Blvd., Tucson, AZ 85721-0041  
Phone: 520.621.6354      Fax: 520.621.8407

[UA NetID Login](#)

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