PhD Position in Soft Matter
University at Buffalo, The State University of New York

Job Title	PhD Position in Soft Matter
Department	Mechanical and Aerospace Engineering
	https://sail-yong.github.io/
Institution	University at Buffalo, The State University of New York
	Buffalo, New York
Date Posted	Apr. 16, 2025
Application Deadline	Open until filled
Position Start Date	Fall 2025
Job Categories	Graduate Student
Academic Field(s)	Mechanical Engineering
Apply By Email	xinyong@buffalo.edu

Job Description

The Soft Matter and Interfacial Phenomena Laboratory (SaIL) in the Department of Mechanical and Aerospace Engineering at the University at Buffalo is seeking a talented PhD student to join in Fall 2025.

The University at Buffalo (UB) is a flagship institution in the 64-campus State University of New York (SUNY) system and a member of the prestigious AAU. Located in Western New York, UB is the largest, most comprehensive public university in SUNY, with a student population of more than 30,000 on three campuses – the Downtown Campus, South Campus, and North Campus. UB is No. 36 among 225 public universities in U.S. News & World Report's 2025 Best Colleges rankings and 76th among best national universities, which includes public and private colleges and universities. UB's graduate mechanical engineering program ranked No.55 in the country.

At SaIL, we take a transdisciplinary approach to uncovering new physics and mechanics in soft

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materials and biological systems, with the goal of advancing material design and manufacturing for novel products and industries. Our research combines theoretical analysis, computational simulations, data-driven modeling, and experimental investigations to explore complex transport phenomena at material interfaces, establish process-structure-property relationships, and design new functional materials. We focus on applications in advanced manufacturing, health care, and environmental sustainability. Our lab has a strong record of preparing researchers for academic careers, with alumni securing tenure-track positions at top research universities like the University of Alabama and Hong Kong University of Science and Technology. Current research topics include but are not limited to

- Membrane biomechanics and biophysics
- Colloidal assembly and transport in complex environments
- Biological locomotion and active matter
- Electrospray deposition

Qualifications:

- Interested in fundamental research in soft matter. Be passionate and self-motivated to venture into new areas and do important/revolutionary work.
- B.S. or M.S. in mechanical engineering, chemical engineering, biomedical engineering, or biomolecular engineering. M.S. with project/research experience and publication records is strongly preferred.
- Strong background in applied math and physics. Knowledge of colloid science, multiphase flow, biophysics, and soft matter physics is beneficial.
- Good programming skills in C/C++, Python, or MATLAB are required.
- Experience with microfluidics, microscopy, image analysis, or all-atom molecular dynamics simulations and software (specifically GROMACS, AMBER, or NAMD) is preferred.
- Communicate well and are open to collaboration.

How to Apply:

Interested candidates are invited to email Dr. Xin Yong (xinyong@buffalo.edu) a CV with TOEFL and GRE scores, unofficial B.S. (and M.S.) transcripts, contact information of 2-3 references, and a brief description of your research experience and motivation. More information about admissions and applications can be found at: https://engineering.buffalo.edu/mechanical-aerospace/graduate/admissions.html.

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EEO/AA Policy

The University at Buffalo is committed to ensuring equal employment and educational opportunity, as well as equal access to services, programs, and activities without regard to an individual's race, color, national origin, sex, religion, age, disability, gender, pregnancy, gender identity, gender expression, sexual orientation, predisposing genetic characteristics, marital status, familial status, veteran status, military status, domestic violence victim status, reproductive health care choices or criminal conviction status.

Contact Information

Please reference Academickeys in your cover letter when applying for or inquiring about this job announcement.

Contact

Buffalo, NY