**BIOPHYSICS (BIPH)**

Graduate Degree Program  
College: Computer, Mathematical, and Natural Sciences

**Abstract**

The Biophysics Program in the Institute for Physical Science and Technology offers Ph.D. degrees in Biophysics. It is affiliated with the College of Computer, Mathematical, and Natural Sciences, and the College of Engineering. Doctoral degrees are offered.

The Maryland Biophysics Program aims to train graduate students in the use of theoretical, computational, and experimental methods to gain quantitative insights into biological systems. The post genomic era is bringing tools for unprecedented characterization and control of living systems. To fully harness these tools for quantitative insights in biology, biomedicine, and bioengineering requires expertise from a number of disciplines. Thus, our program includes faculty from Chemistry, Physics, Biology, Mathematics, Materials Science, and Bioengineering. The Biophysics Program is open to students with undergraduate degrees in Chemistry, Physics, Biology, Mathematics, Computational Science, or Engineering. Because student backgrounds are diverse, we tailor the curriculum to suit the needs of the individual.

Research areas include Computational Biology and Complex Networks; Molecular simulations; Membranes and channels; Biological thermodynamics; Biological Machines and Molecular Motors; Cell mechanics; Motility and the cytoskeleton; Theoretical studies of protein and RNA folding and aggregation; Single molecule biophysics; Theory of hydrophobic and electrostatic interactions Scattering Techniques in RNA and Polymers Protein Structure; Nonlinear dynamics and biophysics of biological regulation; Mechanisms of allostery and protein assembly; Non-Linear Dynamics Signaling and Cancer; Experimental and Computation Neuroscience; Membrane Biophysics; Cell Biology.

The core courses that include but are not limited to Statistical Mechanics, Chemical Thermodynamics, Biophysical Chemistry, Membrane Biophysics and Cell Biology, constitute the basis for further specialization.

**Financial Assistance**

TAships, RAships, Fellowships, arrangements for support from the National Institutes of Health.

**Contact**

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**Courses:**  
- BCHM (https://academiccatalog.umd.edu/graduate/courses/bchm)  
- BIOE (https://academiccatalog.umd.edu/graduate/courses/bioe)  
- BIOL (https://academiccatalog.umd.edu/graduate/courses/biol)  
- BIPH (https://academiccatalog.umd.edu/graduate/courses/biph)  
- BSCI (https://academiccatalog.umd.edu/graduate/courses/bsci)  
- CHEM (https://academiccatalog.umd.edu/graduate/courses/chem)  
- ENMA (https://academiccatalog.umd.edu/graduate/courses/enma)  
- ENMG (https://academiccatalog.umd.edu/graduate/courses/enmg)  
- PHYS (https://academiccatalog.umd.edu/graduate/courses/phys)

**Relationships:**  
- Chemical Physics (CHPH) (https://academiccatalog.umd.edu/graduate/programs/chemical-physics-chph)  
- Chemistry (CHEM) (https://academiccatalog.umd.edu/graduate/programs/chemistry/chem)  
- Materials Science and Engineering (ENMA) (https://academiccatalog.umd.edu/graduate/programs/materials-science-engineering-enma)  
- Physics (PHYS) (https://academiccatalog.umd.edu/graduate/programs/physics-phys)  
- Fischell Department of Bioengineering (BIOE) (https://bioe.umd.edu/)

**Admissions**

**GENERAL REQUIREMENTS**

- Statement of Purpose: In addition to the questions requested by the Graduate School, applicants should include their interests in the University of Maryland's Biophysics Ph.D. program  
- Transcript(s)  
- TOEFL/IELTS/PTE (international graduate students (https://gradschool.umd.edu/admissions/english-language-proficiency-requirements))

**PROGRAM-SPECIFIC REQUIREMENTS**

- Letters of Recommendation (3)  
- Graduate Record Examination - GRE (optional)  
- GRE Subject (optional)  
- CV/Resume  
- Description of Research/Work Experience  
- Publications/Presentations  
- Writing Sample(s) (optional)

Students dedicated to a career in experimental or theoretical biophysics are sought.

For more admissions information or to apply to the program, please visit our Graduate School website: https://gradschool.umd.edu/admissions
APPLICATION DEADLINES

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<td>F (student) or J (exchange visitor) visas; A,E,G,H,I and L visas and immigrants</td>
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RESOURCES AND LINKS:
Other Deadlines: marylandbiophysics.umd.edu (http://www.marylandbiophysics.umd.edu)
Program Website: marylandbiophysics.umd.edu/admissions/ (http://www.marylandbiophysics.umd.edu/admissions/)

Requirements
- Biophysics, Doctor of Philosophy (Ph.D.) (https://academiccatalog.umd.edu/graduate/programs/biophysics-biph/biophysics-phd/)
- Biophysics, Master of Science (M.S.) (https://academiccatalog.umd.edu/graduate/programs/biophysics-biph/biophysics-ms/)

Facilities and Special Resources
Incoming students are provided with private desk space and up to date computer facilities. A Biophysics Seminar is run on the average of once a week generally given by visiting scholars. For those students electing to take the Seminar for credit (one credit is offered) must sign in each week. Three-person committee to mentor students. Symposia consisting of about six nationally and internationally known scholars are conducted once a year on various topics. Seminars and Symposia are well attended by students, postdocs, faculty, and visitors from local institutions such as NIH and Johns Hopkins.