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, & Natural Sciences and the College of Engineering.

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; Cell Mechanics and Motility; Biological Machines and Molecular Motors; Protein and RNA Folding; Experimental and Computational Neuroscience; Membrane Biophysics; Machine Learning in Biology; Statistical Thermodynamics; Mechanobiology; Cellular dynamics in immune signaling and cancer.

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/)
- 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
- Writing Sample(s) (optional, up to 3)
- Description of Research/Work Experience

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 (https://gradschool.umd.edu/admissions/)

APPLICATION DEADLINES

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<th>Type of Applicant</th>
<th>Fall Deadline</th>
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<td>Domestic Applicants</td>
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<td>US Citizens and Permanent Residents</td>
<td>December 16, 2022</td>
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<td>International Applicants</td>
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F (student) or J (exchange visitor) visas; A,E,G,H,I and L visas and immigrants

December 16, 2022

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.