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, Materials Science and Bioengineering. The Biophysics Program is open to students with undergraduate degrees in chemistry, physics or biology as well as students with majors in mathematics, computational science or engineering. Because student backgrounds are diverse, we tailor the curriculum to suit the needs of the individual. The online application is located at apra@umd.edu.

Research areas include Membranes and channels, Theory of molecular machines and 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. 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

Sergei Sukharev
Professor and Biophysics Program Director
3216 Biology-Psychology Building
4094 Campus Drive
University of Maryland
College Park, MD 20742
Telephone: 301.405.6923
Fax: 301.314.9404
Email: sukharev@umd.edu

Souad Nejjar
Program Coordinator
2123 Institute for Physical Science & Tech
8108 Regents Drive
University of Maryland
College Park, MD 20742
Telephone: 301.405.9307
Fax: 301.314.9404
Email: snejjar@umd.edu

Website: http://www.marylandbiophysics.umd.edu

Courses: BCHM BIOE BIOL BIPH BSCI CHEM ENMA PHYS


Admissions

General Requirements

• Statement of Purpose: In addition to the questions requested by the Graduate School, applicants should include content, both backwards and forwards looking, about 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)
• CV/Resume
• Publications/Presentations

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

<table>
<thead>
<tr>
<th>Type of Applicant</th>
<th>Fall Deadline</th>
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<tbody>
<tr>
<td>Domestic Applicants</td>
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<tr>
<td>US Citizens and Permanent Residents</td>
<td>3 Jan</td>
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<tr>
<td>International Applicants</td>
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<tr>
<td>F (student) or J (exchange visitor) visas; A,E,G,H,I and L visas and immigrants</td>
<td>3 Jan</td>
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Other Deadlines: Please visit the program website at http://www.marylandbiophysics.umd.edu

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

Eleven of the eighteen faculty run experimental laboratories. Multiple experiments are conducted at the same time with graduate students working on the experiments. 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, and these students must sign in each week. Faculty form three-person committees to mentor students, as mentioned above. Symposia consisting of about six nationally and internationally known scholars are conducted once a semester on various topics. These are well attended by students, postdocs, faculty and visitors from local institutions such as NIH and Johns Hopkins.

Faculty

<table>
<thead>
<tr>
<th>Last Name</th>
<th>First/Middle Name</th>
<th>Graduate Faculty Status</th>
<th>Academic Credentials</th>
<th>Positions</th>
</tr>
</thead>
<tbody>
<tr>
<td>Aranda-Espinoza</td>
<td>Jose Helim</td>
<td>Full Member</td>
<td>B.S., University of Zacatecas, Mexico 1990; M.S., University of San Luis Potosi, Mexico 1993; Ph.D., University of San Luis Potosi, Mexico 1998.</td>
<td>Associate Chair, Bioengineering Associate Professor, Neurosciences and Cognitive Science Associate Professor, Bioengineering Associate Professor, Biophysics Affiliate Associate Professor, Materials Science and Engineering Professor, Biochemistry Professor, Biophysics Professor, Chemistry</td>
</tr>
<tr>
<td>Beckett</td>
<td>Dorothy</td>
<td>Full Member</td>
<td>B.A., Barnard College, 1980; Ph.D., University of Illinois-Urbana/Champaign, 1986.</td>
<td>Professor, Biochemistry Professor, Biophysics Professor, Chemistry</td>
</tr>
<tr>
<td>Briber</td>
<td>Robert M.</td>
<td>Full Member</td>
<td>B.S., Cornell University, 1979; M.S., University of Massachusetts, Amherst, 1981; Ph.D., 1984.</td>
<td>Professor, Materials Science and Engineering Professor, Biophysics Professor, Chemical Physics</td>
</tr>
<tr>
<td>Butts</td>
<td>Daniel</td>
<td>Full Member</td>
<td>B.A., Oberlin College, 1994; Ph.D., University of California Berkeley, 2000.</td>
<td>Professor, Biophysics Associate Professor, Applied Mathematics &amp; Scientific Computation Associate Professor, Neurosciences and Cognitive Science Associate Professor, Biological Sciences Professor, Biophysics Associate Professor, Bioengineering Associate Professor, Biophysics Associate Professor, Chemistry</td>
</tr>
<tr>
<td>Colombini</td>
<td>Marco</td>
<td>Full Member</td>
<td>B.S., McGill University-Montreal, 1970; Ph.D., 1974.</td>
<td>Professor, Biophysics Associate Professor, Applied Mathematics &amp; Scientific Computation Associate Professor, Neurosciences and Cognitive Science Associate Professor, Biological Sciences Professor, Biophysics Associate Professor, Bioengineering Associate Professor, Biophysics Associate Professor, Chemistry</td>
</tr>
<tr>
<td>Dayie</td>
<td>Kwaku</td>
<td>Full Member</td>
<td>B.A., Physics, 1990, Hamilton College; Ph.D., Biophysics, 1996, Harvard University</td>
<td>Associate Professor, Biochemistry Professor, Biophysics Associate Professor, Chemistry</td>
</tr>
<tr>
<td>Feijo</td>
<td>Jose</td>
<td>Full Member</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Fushman</td>
<td>David</td>
<td>Full Member</td>
<td>M.S., University of Kazan, 1978; Ph.D., University of Kazan, 1985.</td>
<td>Associate Professor, Biophysics Professor, Biochemistry Professor, Chemical Physics Professor, Chemistry</td>
</tr>
</tbody>
</table>
Girvan Michelle Full Member
B.S., Massachusetts Institute of Technology, 1999; Ph.D., Cornell University, 2003; Ph.D., 2004.
Associate Professor, Applied Mathematics & Statistics, and Scientific Computation Associate Professor, Physics Associate Professor, Biophysics

Lorimer George H. Full Member
B.S., University of St. Andrews, 1965; M.S., University of Illinois-Chicago, 1968; Ph.D., Michigan State University, 1972
Distinguished University Professor, Biochemistry Distinguished University Professor, Biophysics

Kanold Patrick Full Member
Ph.D., Johns Hopkins University, 1999.
Professor, Neurosciences and Cognitive Science Professor; Biological Sciences Professor; Biophysics Affiliate

Losert Wolfgang Full Member
M.S., University of Munich, 1995; Ph.D., City College of New York 1998
Professor, Physics Professor, Biophysics Associate Professor, Chemical Physics

Klauda Jeffery Full Member
Ph.D., University of Delaware
Associate Professor, Biophysics Associate Professor, Chemical Engineering Graduate Director, Chemical Engineering

Matysiak Silvina Full Member
Ph.D., Rice University, 2007
Assistant Professor, Bioengineering Assistant Professor, Biophysics

Losert Wolfgang Full Member
M.S., University of Munich, 1995; Ph.D., City College of New York 1998
Professor, Physics Professor, Biophysics Associate Professor, Chemical Physics

Levy Doron Full Member
B.Sc., Tel-Aviv University, 1991; M.Sc., Tel-Aviv University, 1994; Ph.D., Tel-Aviv & Statistics, University, 1997 and Scientific Computation
Distinguished Scholar-Teacher, Mathematics Professor, Biophysics

Matysiak Silvina Full Member
Ph.D., Rice University, 2007
Assistant Professor, Bioengineering Assistant Professor, Biophysics

Losert Wolfgang Full Member
M.S., University of Munich, 1995; Ph.D., City College of New York 1998
Professor, Physics Professor, Biophysics Associate Professor, Chemical Physics

Lorimer George H. Full Member
B.S., University of St. Andrews, 1965; M.S., University of Illinois-Chicago, 1968; Ph.D., Michigan State University, 1972
Distinguished University Professor, Biochemistry Distinguished University Professor, Biophysics

Matysiak Silvina Full Member
Ph.D., Rice University, 2007
Assistant Professor, Bioengineering Assistant Professor, Biophysics

Papoian Garegin Full Member
B.S., 1994, Russian Academy of Science; Ph.D., 1999, Cornell University
Director, Chemical Physics Associate Professor, Biophysics Associate Professor, Chemistry

Papoian Garegin Full Member
B.S., 1994, Russian Academy of Science; Ph.D., 1999, Cornell University
Director, Chemical Physics Associate Professor, Biophysics Associate Professor, Chemistry

Papoian Garegin Full Member
B.S., 1994, Russian Academy of Science; Ph.D., 1999, Cornell University
Director, Chemical Physics Associate Professor, Biophysics Associate Professor, Chemistry

Speer Colenso Full Member
Ph.D., University of California, Davis, 2010
Assistant Professor, Biological Sciences Assistant Professor, Biophysics

Speer Colenso Full Member
Ph.D., University of California, Davis, 2010
Assistant Professor, Biological Sciences Assistant Professor, Biophysics

Speer Colenso Full Member
Ph.D., University of California, Davis, 2010
Assistant Professor, Biological Sciences Assistant Professor, Biophysics

Stroka Kimberly Full Member

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<tr>
<th>Name</th>
<th>Title</th>
<th>Degree Details</th>
<th>Previous Position</th>
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<tbody>
<tr>
<td>Sukharev, Sergei I.</td>
<td>Full Member</td>
<td>M.S., Russia, 1980; Ph.D., M.V. Lomonosov Moscow State University, 1987.</td>
<td>Director, Biophysics Professor, Biological Sciences</td>
</tr>
<tr>
<td>Thirumalai, Devarajan</td>
<td>Adjunct Member</td>
<td>M.S., Indian Institute of Technology-Kanpur, 1977; Ph.D., University of Minnesota-Twin Cities, 1982.</td>
<td>Adjunct Professor, Biophysics</td>
</tr>
<tr>
<td>Tiwary, Pratyush</td>
<td>Full Member</td>
<td>Ph.D., Caltech, 2012</td>
<td>Assistant Professor, Biochemistry Professor, Biophysics Assistant Professor, Biophysics Assistant Professor, Chemistry</td>
</tr>
<tr>
<td>Upadhyaya, Arpita</td>
<td>Full Member</td>
<td>B.E. &amp; M.S., Birla Institute of Technology and Science, India, 1994; Ph.D., University of Notre Dame, 2000.</td>
<td>Associate Professor, Physics Assistant Professor, Biophysics Assistant Professor, Chemical Physics</td>
</tr>
<tr>
<td>Weeks, John D.</td>
<td>Full Member</td>
<td>B.A., Harvard University, 1965; Ph.D., University of Chicago, 1969.</td>
<td>Distinguished University Professor, Biophysics Distinguished University Professor, Chemical Physics Distinguished University Professor, Chemistry Affiliate Professor, Physics</td>
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