BIOENGINEERING (BIOE)

Graduate Degree Program
College: Engineering

Abstract
Welcome to the Graduate Program in the Fischell Department of Bioengineering at the A. James Clark School of Engineering, University of Maryland. Our program represents the strong intellectual interdisciplinary infrastructure and collaborative culture that links engineering, biology, and medicine at our university.

Our program provides a basic understanding of bioengineering at the molecular and cellular level, focusing on:

- biomolecular and cellular rate processes
- biomaterials and tissue engineering
- drug delivery
- cellular and tissue biomechanics
- electrophysiology of the cell
- cellular and physiological transport phenomena
- biomedical imaging
- biosensors
- medical diagnostics systems
- bio-devices
- vaccines

With strong, funded research programs and innovative partnerships with the National Institutes of Health, Food and Drug Administration, and University of Maryland School of Medicine, the Fischell Department of Bioengineering is an exciting place for graduate study.

Financial Assistance
Graduate assistantships and fellowships are available on a competitive basis to Ph.D. students. No separate financial support application is required. Students will automatically be considered for eligible forms of support.

Contact
Please see the program's website for program description, admission requirements, and financial aid information.

Graduate Program
The Fischell Department of Bioengineering
3102A James Clark Hall
8278 Paint Branch Drive
University of Maryland
College Park, MD 20742
Telephone: 301.405.8268
Fax: 301.405.9953
Email: bioe-grad@umd.edu

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

Courses: BIOE

Relationships: Materials Science and Engineering (ENMA) (https://academiccatalog.umd.edu/graduate/programs/materials-science-engineering-enma)

Admissions
General Requirements
- Statement of Purpose
- 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

Admission to the Graduate Program in Bioengineering requires a bachelor of science degree in an engineering discipline from a recognized undergraduate institution. Admission also may be granted to students with a degree in another scientific discipline, such as biology, chemistry, physics, or mathematics. In some cases, students may be required to take undergraduate courses to rectify deficiencies in their background before they will be given permission to enroll in the required core graduate courses. Because of the structure of the first year curriculum, students seldom are admitted to begin the Ph.D. program in the spring semester. In addition, students are rarely admitted that only wish to pursue a master's degree. Therefore, applicants are strongly encouraged to apply for fall admission to the Ph.D. program.

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

Application Deadlines

<table>
<thead>
<tr>
<th>Type of Applicant</th>
<th>Fall Deadline</th>
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<tr>
<td>Domestic Applicants</td>
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<tr>
<td>US Citizens and Permanent Residents</td>
<td>8 Jan</td>
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<td>International Applicants</td>
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<td>F (student) or J (exchange visitor) visas; A,E,G,H,J and L visas and immigrants</td>
<td>8 Jan</td>
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Other Deadlines: Please visit the program website at http://www.bioe.umd.edu

Requirements
- Bioengineering, Doctor of Medicine and Doctor of Philosophy (dual degree) (M.D. and Ph.D.) (https://academiccatalog.umd.edu/graduate/programs/bioengineering-bioe/bioengineering-dual-degree-md-phd)
- Bioengineering, Doctor of Medicine and Master of Science (dual degree) (M.D. and M.S.) (https://academiccatalog.umd.edu/graduate/programs/bioengineering-bioe/bioengineering-dual-degree-md-ms)
- Bioengineering, Doctor of Philosophy (Ph.D.) (https://academiccatalog.umd.edu/graduate/programs/bioengineering-bioe/bioengineering-phd)
Facilities and Special Resources

The Department has access to well-equipped bioengineering research laboratories and associated departmental facilities of its faculty. In addition, there are core facilities available for bioengineering research. Animal facilities are available if necessary.

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>
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<tbody>
<tr>
<td>Al-Sheikhly</td>
<td>Mohamad I.</td>
<td>Full Member</td>
<td>B.Sc., University of Baghdad, 1974; Ph.D., University of Newcastle, 1981.</td>
<td>Professor, Materials Science and Engineering Affiliate Professor, Bioengineering Affiliate Professor, Chemical Engineering</td>
</tr>
<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, Neuroscience and Cognitive Science Associate Professor, Bioengineering Associate Professor, Biophysics Affiliate Professor, Materials Science and Engineering</td>
</tr>
<tr>
<td>Bentley</td>
<td>William E.</td>
<td>Full Member</td>
<td>B.S., Cornell University, 1982; M.Eng., 1983; Ph.D., University of Colorado-Boulder, 1989.</td>
<td>Distinguished University Professor, Applied Mathematics and Statistics, Distinguished University Professor, Bioengineering Affiliate Professor, Biological Sciences Affiliate Professor, Chemical Engineering</td>
</tr>
<tr>
<td>Chen</td>
<td>Yu</td>
<td>Full Member</td>
<td>Position: Assistant Professor CV. B.S., Peking University, 1997; M.S., University of Pennsylvania, 2001; Ph.D., 2003.</td>
<td>Associate Professor, Bioengineering</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, Biological Sciences Professor, Biophysics Affiliate Professor, Bioengineering</td>
</tr>
<tr>
<td>Culver</td>
<td>James N.</td>
<td>Full Member</td>
<td>B.S., Oklahoma State University-Stillwater, 1985; M.S., Oklahoma State University, 1987; Ph.D., University of California-Riverside, 1991.</td>
<td>Professor, Plant Science Affiliate Professor, Bioengineering Affiliate Professor, Biological Sciences</td>
</tr>
<tr>
<td>Name</td>
<td>Title</td>
<td>Degree, Institution and Dates</td>
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<tr>
<td>DeVoe</td>
<td>Donald Lad</td>
<td>Full Member, University of Maryland-College Park, 1991; M.S., 1993; Ph.D., University of California-Berkeley, 1997.</td>
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<tr>
<td>Dwyer</td>
<td>Daniel</td>
<td>Adjunct Member, University of Maryland-1992; M.S., 1994; Ph.D., 1996.</td>
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<tr>
<td>Eisenstein</td>
<td>Edward</td>
<td>Full Member, B.S., St. Joseph's University, 1979; Ph.D., Georgetown University, 1985.</td>
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<tr>
<td>Fisher</td>
<td>John P.</td>
<td>Full Member, B.S., The Johns Hopkins University, 1995; M.S., University of Cincinnati, 1998; Ph.D., Rice University, 2002.</td>
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<tr>
<td>Flatau</td>
<td>Alison</td>
<td>Full Member, B.S., University of Connecticut, 1978; M.S., University of Utah, 1985, Ph.D., 1990.</td>
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</table>
Kahn  Jason D.  Full Member  B.A., Harvard University, 1983; Ph.D., University of California-Berkeley, 1990.  Associate Professor, Biochemistry  Associate Professor, Biological Sciences  Associate Professor, Chemistry  Affiliate Associate Professor, Bioengineering

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

Montas  Hubert J.  Full Member  B.S., McGill University-Montreal, 1988; M.S., 1990; Ph.D., Purdue University, 1996.  Associate Professor, Bioengineering

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

Payne  Gregory F.  Full Member  Ph.D., University of Michigan, 1984.  Professor, Bioengineering

Sochol  Ryan  Adjunct Member  Affiliate Assistant Professor, Bioengineering

Tao  Yang  Full Member  B.S., Nanjing Institute of Technology, 1982; M.S., University of Nebraska-Lincoln, 1988; Ph.D., Pennsylvania State University-University Park, 1991.  Professor, Bioengineering

Karlsson  Amy  Full Member  BS Iowa State University, 2003  Assistant Professor, Chemical Engineering  Affiliate Assistant Professor, Bioengineering

White  Ian  Full Member  Ph.D., Stanford University, 2002  Associate Chair, Bioengineering  Associate Professor, Bioengineering  Associate Professor, Chemical Physics

Kjellerup  Birthe  Full Member  M.Sc., Aalborg University, 1997; Ph.D., Environmental Engineering, Aalborg University, 2004  Assistant Professor, Civil and Environmental Engineering  Affiliate Professor, Microbiology, Bioengineering  Affiliate Professor, Bioengineering

Kofinas  Peter  Full Member  B.S., Massachusetts Institute of Technology, 1989; M.S., 1989; Ph.D., 1994.  Professor, Bioengineering  Professor, Chemical Physics  Affiliate Professor, Materials Science and Engineering  Affiliate Professor, Chemical Engineering