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:

- Medical Devices
- Biocomputational Systems
- Optical Technologies
- Imaging
- Drug Delivery
- Therapeutics Design
- Biomolecular Engineering
- Cell and Tissue Engineering
- Biomaterials
- BioChips

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

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’s degree in a science or engineering discipline from an accredited undergraduate institution. Applicants with degrees in non-engineering disciplines, such as biology, chemistry, physics, or mathematics, are expected to have the following prerequisite courses: Calculus I, II, III; Differential Equations; and Thermodynamics. These courses would ideally have been completed by the time of application, but they may also be in progress.

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

Application Deadlines
Type of Applicant Fall Deadline
Domestic Applicants
US Citizens and Permanent Residents 8 Jan
International Applicants
F (student) or J (exchange visitor) visas; A,E,G,H,I and L visas and immigrants 8 Jan

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)
- Bioengineering, Master of Science (M.S.) (https://academiccatalog.umd.edu/graduate/programs/bioengineering-bioe/bioengineering-ms)
# Facilities and Special Resources

The Department is located in A. James Clark Hall, a 184,000 square foot building serving as a central hub for new partnerships and collaboration for organizations throughout the Maryland and Washington, D.C. region.

Approximately 7,332 sq. feet of classroom space and 11,402 sq. feet of class lab space is used to support instructional capabilities. To help create an organic flow of ideas between many disciplines, the building features flex classrooms and two stories of flexible laboratories to the campus – including wet and dry spaces as well as a vivarium.

Optical laser and imaging laboratories feature state-of-the-art technology in digital fabrication, rapid prototyping, 3D printing, optics, and bioinformatics. In the imaging suite, researchers have the ability to examine molecular resolution of pathogens – whether in the GI tract or bloodstream – that show how a nano-carrier delivers a drug to a specific tumor site. Additionally, laser devices and magnetic resonance imagers will allow a close examination of cross-sections of the body and brain.

## 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>
<th>Associate Professor CV</th>
<th>Position</th>
<th>Associate Professor CV</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, Bioengineering Associate Professor, Biophysics Affiliate Associate Professor, Materials Science and Engineering Distinguished University Professor, Applied Mathematics &amp; Statistics, and Scientific Computation Distinguished University Professor, Bioengineering Affiliate Professor, Biological Sciences Affiliate Professor, Chemical Engineering</td>
<td></td>
<td></td>
<td></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></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Chen</td>
<td>Yu</td>
<td>Full Member</td>
<td></td>
<td></td>
<td>Assistant Professor, Bioengineering</td>
<td>B.S., Peking University, University of Pennsylvania, 1991; M.S., University of Pennsylvania, 2001; Ph.D., 2003</td>
<td></td>
</tr>
<tr>
<td>Culver</td>
<td>James N.</td>
<td>Full Member</td>
<td>B.S., Oklahoma University-Stilwater, 1985; M.S., Oklahoma State University, 1987; Ph.D., University of California-Berkeley, 1991</td>
<td></td>
<td>Plant Science Professor, Bioengineering University Professor, Bioengineering Affiliate Professor, Biological Sciences</td>
<td></td>
<td></td>
</tr>
<tr>
<td>DeVoe</td>
<td>Donald Lad</td>
<td>Full Member</td>
<td></td>
<td></td>
<td></td>
<td>Associate Professor, Bioengineering</td>
<td>B.S., University of Maryland-College Park, 1991; M.S., 1993; Ph.D., University of California-Berkeley, 1997</td>
</tr>
<tr>
<td>Duncan</td>
<td>Gregg</td>
<td>Full Member</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Dwyer</td>
<td>Daniel</td>
<td>Adjunct Member</td>
<td></td>
<td></td>
<td>Assistant Professor, Bioengineering</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Eisenstein</td>
<td>Edward</td>
<td>Full Member</td>
<td></td>
<td></td>
<td>Associate Professor, Bioengineering</td>
<td>B.S., St. Joseph’s University, 1979; Ph.D., Georgetown University, 1985</td>
<td></td>
</tr>
<tr>
<td>Name</td>
<td>Title</td>
<td>Full Member</td>
<td>Bioengineering Department</td>
<td>Bioengineering Affiliate</td>
<td>Biochemistry</td>
<td>Biological Sciences</td>
<td>Biophysics</td>
</tr>
<tr>
<td>--------</td>
<td>----------------</td>
<td>-------------</td>
<td>---------------------------</td>
<td>--------------------------</td>
<td>--------------</td>
<td>---------------------</td>
<td>------------</td>
</tr>
<tr>
<td>Fisher</td>
<td>John P.</td>
<td>Full Member</td>
<td>Chair, Bioengineering</td>
<td>Huang Chiao</td>
<td>Full Member</td>
<td>B.S., National Taipei University of Technology, 2005; Ph.D., Arizona State University, 2012</td>
<td>Assistant Professor, Bioengineering</td>
</tr>
<tr>
<td>Flatau</td>
<td>Alison</td>
<td>Full Member</td>
<td>Professor, Aerospace</td>
<td>Professor, Aerospace</td>
<td>Full Member</td>
<td>B.S., University of Georgia, 2004; Ph.D., Yale University, 2009.</td>
<td>Assistant Professor, Bioengineering Affiliate</td>
</tr>
<tr>
<td>Ghodssi</td>
<td>Reza</td>
<td>Full Member</td>
<td>Bioengineering Affiliate</td>
<td>Professor, Aerospace</td>
<td>Full Member</td>
<td>B.S., Lehigh University, 2003; M.S., University of Wisconsin-Madison, 2005; Ph.D., 2008.</td>
<td>Assistant Professor, Biological Sciences</td>
</tr>
<tr>
<td>He</td>
<td>Xiaoming</td>
<td>Adjunct</td>
<td>Professor, Aerospace</td>
<td>Professor, Aerospace</td>
<td>Full Member</td>
<td>B.A., Harvard University, 1983; Ph.D., University of California-Berkeley, 1990.</td>
<td>Associate Professor, Biochemistry</td>
</tr>
<tr>
<td>Herold</td>
<td>Keith E.</td>
<td>Full Member</td>
<td>Professor, Bioengineering</td>
<td>Associate Professor, Bioengineering</td>
<td>Full Member</td>
<td>Ph.D., Johns Hopkins University, 1999.</td>
<td>Associate Professor, Biophysics Affiliate</td>
</tr>
</tbody>
</table>

B.S., The Johns Hopkins University, 1995; M.S., University of Cincinnati, 1998; Ph.D., Rice University, 2002.


B.S., University of Wisconsin-Madison, 1990; M.S., 1992; Ph.D., 1996.

B.S., Xi'an Jiaotong University, 1995; M.S., Xi'an Jiaotong University, 1998; Ph.D., University of Minnesota, 2004.

B.S., University of Akron, 1977; M.S., Ohio State University-Columbus, 1979; Ph.D., 1985.
<table>
<thead>
<tr>
<th>Name</th>
<th>Title</th>
<th>Full Member</th>
<th>Institution and Dates</th>
</tr>
</thead>
<tbody>
<tr>
<td>Karlsson Amy</td>
<td>Full Member</td>
<td>BS Iowa State University, 2003 Ph.D., University of Wisconsin Madison, WI, 2009</td>
<td>Assistant Professor, Chemical Engineering, Assistant Professor, Bioengineering, 2003; Ph.D., University of Maryland - Baltimore County, 2006</td>
</tr>
<tr>
<td>Kjellerup Birthe</td>
<td>Full Member</td>
<td>M. Sc., Environmental Engineering, Aalborg University, 1997; Ph.D., Environmental Engineering, Aalborg University, 2004</td>
<td>Assistant Professor, Civil and Environmental Engineering, 2006; Ph.D., University of Maryland - College Park, 2011</td>
</tr>
<tr>
<td>Kofinas Peter</td>
<td>Full Member</td>
<td>B.S., Massachusetts Institute of Technology, 1989; M.S., 1989; Ph.D., 1994.</td>
<td>Professor, Bioengineering, Associate Professor, Chemical Physics, 2006; Ph.D., University of Nebraska-Lincoln, 1988; Ph.D., Pennsylvania State University, 1991.</td>
</tr>
<tr>
<td>Matysiak Silvina</td>
<td>Full Member</td>
<td>Ph.D., Rice University, 2007</td>
<td>Assistant Professor, Bioengineering, Assistant Professor, Biophysics, 2002</td>
</tr>
<tr>
<td>Montas Hubert J.</td>
<td>Full Member</td>
<td>B.S., McGill University-Montreal, 1988; M.S., 1990; Ph.D., Purdue University, 1996.</td>
<td>Associate Professor, Bioengineering, 1992; Ph.D., University of Maryland - College Park, 2006</td>
</tr>
<tr>
<td>Muro Silvia</td>
<td>Full Member</td>
<td>B.S., Universidad de Granada, 1995; Ph.D., Universidad Autonoma de Madrid, 1999</td>
<td>Associate Professor, Bioengineering, 2002; Ph.D., University of Maryland - College Park, 2006</td>
</tr>
<tr>
<td>Scarcelli Giuliano</td>
<td>Full Member</td>
<td>B.S., University of Bari, 2001; M.S., University of Maryland - Baltimore County, 2003</td>
<td>Assistant Professor, Bioengineering, 2006</td>
</tr>
</tbody>
</table>