Abstract
The Department of Chemistry and Biochemistry offers graduate study leading to the Ph.D. degree in Chemistry. Our Ph.D. program in Chemistry has a strong core in the traditional fields of chemistry, including analytical chemistry, chemical physics (in cooperation with the Institute of Physical Sciences & Technology), environmental chemistry, inorganic chemistry, nuclear chemistry, organic chemistry and physical chemistry. In addition to these traditional areas we also have interdisciplinary programs in contemporary areas such as nanoscience, chemical biology, energy sciences, materials chemistry, theoretical chemistry, and supramolecular chemistry.

Financial Assistance
Ph.D. candidates are normally supported on graduate teaching assistantships during their first year in graduate school as long as they are in good standing. Teaching assistants usually instruct undergraduate laboratory and recitation classes and receive in return a tuition waiver of ten credits each semester, a salary and health care benefits. In subsequent years, Ph.D. candidates are typically supported on graduate research assistantships or fellowships. Financial assistance is not typically available to M.S. candidates.

Contact
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Website: http://www.chem.umd.edu

Courses: BCHM  CHEM

Relationships: Biochemistry (BCHM) (https://academiccatalog.umd.edu/graduate/programs/biochemistry-bchm), Chemical Physics (CHPH) (https://academiccatalog.umd.edu/graduate/programs/chemical-physics-chph)

Admissions
Admission to graduate study at the University of Maryland requires a minimum of a Bachelor of Science (B.S.), Bachelor of Arts (B.A.) or equivalent degree. Previous coursework must normally include a minimum of 30 semester or 40 quarter hours of chemistry, with at least 1 year of physical chemistry, 1 year of organic chemistry and 1 semester of inorganic chemistry, as well as laboratory courses in organic chemistry and physical chemistry. A laboratory course in analytical chemistry is also preferred. The following application materials are required:

1. Graduate application;
2. Personal statement;
3. General Graduate Record Examination (GRE) scores;
4. Grade transcripts;
5. 3 letters of reference.

The chemistry subject GRE score is not required but it can be helpful for a complete evaluation. Applicants from non-English speaking countries must also present the results of the Test of English as a Foreign Language (TOEFL) and the Test of Spoken English (TSE).

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
- Description of Research/Work Experience
- GRE Subject (optional/highly recommended)

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  17 Jan
International Applicants
F (student) or J (exchange visitor) visas; A,E,G,H,I and L visas and immigrants  17 Jan

Other Deadlines: Please visit the program website at http://www.chem.umd.edu

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

Facilities and Special Resources
The Department has state-of-the-art research facilities to support research in the fields listed above. Facilities include "clean" rooms for environmental sample analysis, X-ray crystallographic instrumentation, numerous mass spectrometers, numerous NMR spectrometers including 400, 500, 600 and 800 MHz Fourier-transform NMR spectrometers; an XPS spectrometer, Atomic Force Microscopes, ultracentrifuges, analytical optical spectrometers, and a state-of-the-art computer graphics facility.

Departmental research is supported by a departmental server and many individual faculty workstations. The Department has access to
electronics shop and campus machine shops. The Chemistry Library has an extensive collection in chemistry, biochemistry, and other fields. Electronic access to journals and literature search databases is available. A Macintosh workstation facility (25 units) is available in the Department for student/faculty use.

**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>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>Devoe Howard J. Full Member</td>
</tr>
<tr>
<td>Bellama</td>
<td>Jon M.</td>
<td>Full Member</td>
<td>B.S., Allegheny College, 1960; Chemistry Ph.D., University of Pennsylvania, 1965.</td>
<td>Dickerson Russell R. Full Member</td>
</tr>
<tr>
<td>Blough</td>
<td>Neil V.</td>
<td>Full Member</td>
<td>B.S., University of Pittsburgh, 1977; Ph.D., Northwestern University, 1983.</td>
<td>Falvey Daniel E. Full Member</td>
</tr>
<tr>
<td>Davis</td>
<td>Jeffery T.</td>
<td>Full Member</td>
<td>B.A., Colby College, 1981; Ph.D., Massachusetts Institute of Technology, 1987.</td>
<td>Fenselau Catherine C. Full Member</td>
</tr>
</tbody>
</table>

Dayie Kwaku Full Member B.A. Physics, 1990; Associate Professor, Hamilton Biochemistry College; Ph.D., Associate Professor, Biophysics, 1996, Harvard University Associate Professor, Chemistry


Dickerson Russell R. Full Member B.A., University of Chicago, 1975; M.S., University of Michigan Ann Arbor, 1978; Ph.D., 1980.


Fenselau Catherine C. Full Member A.B., Bryn Mawr College, 1961; Ph.D., Stanford University, 1965.
<table>
<thead>
<tr>
<th>Name</th>
<th>Title</th>
<th>Membership</th>
<th>Education</th>
<th>Position</th>
<th>Affiliation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fourkas</td>
<td>John T.</td>
<td>Full Member</td>
<td>Ph.D. Stanford University 1991</td>
<td>Professor, Chemical Physics, Professor, Chemistry</td>
<td>Herzberg Osnat Full Member B.S., Technion-Israel Institute of Tech-Haifa, 1971; M.S., Weizmann Institute of Science-Rehovoth, 1976, Ph.D., 1982.</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 Director, Biophysics Professor, Biochemistry Professor, Chemical Physics Professor, Chemistry</td>
<td>Isaacs Lyle D. Full Member B.S., University of Chicago, 1991; M.S., University of California-Los Angeles, 1992, Ph.D., Swiss Federal Institute of Tech-Zurich, 1995.</td>
</tr>
<tr>
<td>Greer</td>
<td>Sandra C.</td>
<td>Full Member</td>
<td>B.S., Furman University, 1966; M.S., University of Chicago, 1968; Ph.D., 1969</td>
<td>Professor Emeritus, Chemistry</td>
<td>Grim Samuel O. Full Member B.S., Franklin and Marshall College, 1956; Ph.D., Massachusetts Institute of Technology, 1960.</td>
</tr>
<tr>
<td>Gutierrez</td>
<td>Osvaldo</td>
<td>Full Member</td>
<td>Ph.D., UC Davis, 2009; B.S. and M.S., UCLA, 2012</td>
<td>Assistant Professor, Mathematics, Assistant Professor, Chemistry, Affiliate Professor, Chemical Physics Professor, Emeritus, Chemistry</td>
<td>Gutierrez Osvaldo Full Member Ph.D., UC Davis, 2009; B.S. and M.S., UCLA, 2012</td>
</tr>
</tbody>
</table>
LaRonde  Nicole  Full Member
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Associate Professor, Chemistry

Mullin  Amy  Full Member

Lee Cheng S.  Full Member
B.S., National Cheng Kung University-Taiwan, 1981;
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Nemes Peter  Full Member

Lee Sang Bok  Full Member
B.S., Seoul National University, 1990; M.S.
1992; Ph.D. 1997
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Professor; Chemistry
Affiliate Professor; Materials Science and Engineering

Nie Zhihong  Non-Member
Ph.D., University of Toronto, Canada, 2008

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

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Mignerey Alice C.  Full Member
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1973; Ph.D. 1975.

Miller Gerald R.  Full Member
B.S., University of Wisconsin-Madison, 1958;
M.S., University of Illinois-Urbana/ Champaign,
<table>
<thead>
<tr>
<th>Name</th>
<th>First Name</th>
<th>Last Name</th>
<th>Membership Type</th>
<th>Academic Background</th>
<th>Current Position</th>
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</thead>
<tbody>
<tr>
<td>Papoian</td>
<td>Garegin</td>
<td>Full Member</td>
<td>B.S., 1994, Russian Academy of Science; Ph.D., 1999, Cornell University</td>
<td>Director, Chemical Physics Associate Professor, Biophysics Associate Professor, Chemistry</td>
<td>Tiwary, Pratyush, Full Member, Ph.D., Caltech, 2012, Assistant Professor, Biochemistry Assistant Professor, Biophysics Assistant Professor, Chemistry</td>
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<tr>
<td>Paukstelis</td>
<td>Paul</td>
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<td>B.S., Biology, 1997, University of Kansas; Ph.D. Molecular Biology, University of Texas at Austin</td>
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<td>Vedernikov, Andrei, Full Member, B.S., State University of Kanzan, Russia, 1980; Ph.D., 1986; Doctorized, 1999, Professor, Chemical Physics Professor, Chemistry</td>
</tr>
<tr>
<td>Poulin</td>
<td>Myles</td>
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<td>Walters, William B., Full Member, B.S., Kansas State University, 1960; Ph.D., University of Illinois-Urbana/Champaign, 1964, Professor, Chemistry</td>
<td></td>
</tr>
<tr>
<td>Reutt-Robey</td>
<td>Janice</td>
<td>Full Member</td>
<td>B.A., Haverford College, 1980 Ph.D., University of California-Berkeley, 1986.</td>
<td>Wang, Lai-Xi, Full Member, PhD, Shanghai Institute of Organic Chemistry, Chinese Academy of Sciences Postdoc Fellow, Johns Hopkins University and Massachusetts Institute of Technology, Professor, Biochemistry Professor, Chemistry</td>
<td></td>
</tr>
<tr>
<td>Rodrigues</td>
<td>Efrain</td>
<td>Non-Member</td>
<td>Assistant Professor, Chemical Physics Assistant Professor, Chemistry</td>
<td>Wang, Yu-Huang, Full Member, Ph.D. Rice University, 2004, Assistant Professor, Chemical Physics Assistant Professor, Chemistry</td>
<td></td>
</tr>
</tbody>
</table>
Weeks John D. Full Member B.A., Harvard University, 1965; Ph.D., University of Chicago, 1969. Distinguished University Professor, Biophysics Distinguished University Professor, Chemical Physics Distinguished University Professor, Chemistry Affiliate Professor, Physics

Zachariah Michael R. Full Member B.S., University of California, LA, 1979, M.S., University of California, LA, 1981, Ph.D., University of California, LA, 1986. Professor, Applied Mathematics & Statistics, and Scientific Computation Professor, Chemical Engineering Professor, Chemical Physics Professor, Chemistry Affiliate Professor, Materials Science and Engineering