PLANT SCIENCE (PLSC)

Graduate Degree Program
College: Agriculture and Natural Resources

Abstract

The Plant Science (PLSC) graduate program offers training with concentrations in Agronomy, Cell Biology, Functional Genomics, Molecular Physiology, Conservation Biology and Ecology, Pathology, and Landscape Ecosystems Management. Students are trained by graduate faculty with an emphasis on interdisciplinary education and mastery of their chosen area of study. All PLSC graduate training is thesis-based, and an emphasis is placed on research and discovery learning rather than coursework. Students work directly with internationally-recognized graduate faculty who are leaders in their disciplines. Students are guided in their studies by a major professor as well as a graduate advisory committee selected by the student from experts on the campus, nearby research institutions, and other universities. The program offers Master of Science and Doctor of Philosophy degrees. Tuition, fees, and stipends of Ph. D students are generally supported by extramural funding or by the department through teaching or graduate research assistantships. M.S. students can be externally or self-funded. The objectives of the Plant Science graduate program are: - To provide students with the skills in analyzing and interpreting quantitative and qualitative information; using inductive and deductive reasoning; and communicating in both verbal and written form. - To train a next generation of plant science researchers to lead public and private efforts to provide a secure and nutritious food supply, maintain and restore ecosystems, and provide high quality plant science education. - To advance knowledge in plant sciences that is critical to the improvement of the efficiency, profitability and sustainability of global and national agricultural and natural resources. The Plant Science graduate program seeks to maximize the close association of the many national laboratories (USDA, FDA, NASA, NIST, NIH, DOE, etc.) with have cooperative agreements with the department and the University of Maryland. As a result, graduates of the program are particularly well trained for employment in public and private sector research positions.

Financial Assistance

A limited number of research assistantships and teaching assistantships are available for qualified applicants. There is strong competition for these awards, and candidates are encouraged to submit their applications as early as possible in the semester preceding anticipated enrollment in the Department.

Contact

Jianhua Zhu, PhD
PLSC Graduate Program Chair
Department of Plant Science and Landscape Architecture
2130 Plant Sciences Building
4291 Fieldhouse Drive
University of Maryland
College Park, MD 20742
Telephone: 301.405.0920
Fax: 301.314.9308
Email: jhzhu@umd.edu
Website: http://www.psla.umd.edu

Courses: PLSC

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
- Description of Research
- Faculty of Interest

Admission to the program requires a baccalaureate from an accredited college or university in the United States or the equivalent in a foreign country. Applicants are expected to have a 3.0 cumulative grade point average (4.0 scale) in all previous academic work. All applicants must submit Graduate Record Examination (GRE) scores and an acceptable combined score of 300 on the verbal and quantitative portions of the GRE are desirable.

Equipment and expertise for next generation sequencing, laser scanning confocal, life science imaging, bioinformatics, genomics, proteomics, and metabolomics are available either in the department or on campus. Extensive controlled-environment facilities, including state-of-the-art growth chambers and a large and modern greenhouse complex are complemented by a large network of field research facilities located strategically across the state representing various environments with different climates and soil types. Students have access to computer labs and shared processing arrays and a comprehensive computer center located on campus.

The University Libraries on campus and both the National Agriculture Library and Library of Congress located nearby make the library resources accessible to students among the best in the nation. Many of the Departments projects are conducted in cooperation with other departments on campus and with professionals at the Food and Drug Administration facility near the campus and the headquarters of the USDA Agricultural Research Service located three miles from campus in Beltsville. Scientists at the Geologic Survey, the National Academy of Sciences, NASA, National Institutes of Health, Department of Energy, Smithsonian, and National Park Service, as well as other agencies, have cooperated with the Departments faculty on various projects. Scientists from some of these agencies have adjunct appointments in the Department, have taught special courses at the University, and participate on graduate committees.

Application Deadlines

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<tr>
<th>Type of Applicant</th>
<th>Fall Deadline</th>
<th>Spring Deadline</th>
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<tr>
<td>Domestic Applicants</td>
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<td>US Citizens and Permanent Residents</td>
<td>11 Jan</td>
<td>28 Sep</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

11 Jan | 28 Sep

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

Requirements

• Plant Science, Doctor of Philosophy (Ph.D.) (https://academiccatalog.umd.edu/graduate/programs/plant-science-plsc/plant-science-phd)
• Plant Science, Master of Science (M.S.) (https://academiccatalog.umd.edu/graduate/programs/plant-science-plsc/plant-science-ms)

Facilities and Special Resources

State-of-the-art facilities for conducting research in plant science are located at the College Park campus in the Plant Science Building and Research Greenhouse Complex. Modern laboratories are equipped for genomic, molecular genetic, cell biological, physiological, and biochemical research in plant science. Equipment and expertise for next generation sequencing, life science imaging, bioinformatics, genomics, proteomics, and metabolomics are available either in the department or on campus. Extensive controlled-environment facilities, including state-of-the-art growth chambers and a large and modern greenhouse complex are complemented by a large network of field research facilities located strategically across the state representing various environments with different climates and soil types. Students have access to computer labs and shared processing arrays and a comprehensive computer center located on campus. The University Libraries on campus and both the National Agriculture Library and Library of Congress located nearby make the library resources accessible to students among the best in the nation. Many of the Department’s projects are conducted in cooperation with other departments on campus and with professionals at the Food and Drug Administration facility near the campus and the headquarters of the USDA Agricultural Research Service located three miles from campus in Beltsville. Scientists at the Geologic Survey, the National Academy of Sciences, NASA, National Institutes of Health, Department of Energy, Smithsonian, and National Park Service, as well as other agencies, have cooperated with the Department’s faculty on various projects. Scientists from some of these agencies have adjunct appointments in the Department, have taught special courses at the University, and participate on graduate committees.

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>Carroll</td>
<td>Mark J.</td>
<td>Full Member</td>
<td>B.S., California Polytechnic State University, 1979; M.S., Michigan State University, 1982; Ph.D., Cornell University, 1989.</td>
<td>Associate Professor, Plant Science</td>
</tr>
<tr>
<td>Chang</td>
<td>Caren</td>
<td>Full Member</td>
<td>B.A., University Professor, of California-Berkeley, 1982; Ph.D., California Institute of Technology, 1988.</td>
<td>Affiliate Professor, Plant Science</td>
</tr>
<tr>
<td>Chaverri</td>
<td>Priscila</td>
<td>Full Member</td>
<td>B.S., Instituto Tecnologico de Costa Rica, 1993; Ph.D., Pennsylvania State University, 2005.</td>
<td>Associate Professor, Plant Science</td>
</tr>
<tr>
<td>Coleman</td>
<td>Gary D.</td>
<td>Full Member</td>
<td>B.S., Colorado State University, 1978; M.S., 1986; Ph.D., University of Nebraska-Lincoln, 1989.</td>
<td>Associate Professor, Plant Science</td>
</tr>
<tr>
<td>Cook</td>
<td>Kelly</td>
<td>Full Member</td>
<td>BA, State University of New York, 1999; MLA, State University of New York, 2002; MA, Cornell University, 2007; PhD, Cornell University, 2012</td>
<td>Assistant Professor, Landscape Architecture Assistant Professor, Plant Science</td>
</tr>
</tbody>
</table>
Cooke Todd J. Full Member
B.S., Antioch College, 1974; Ph.D., Cornell University, 1979.
Professor, Biological Sciences Affiliate Professor, Plant Science
Kratochvil Robert James Full Member
B.S., Montana State University, 1972; M.S., University of Maryland-College Park, 1988; Ph.D., 1994.

Cregan Perry B. Adjunct Member
B.A., Washington University, 1968; B.S., Oregon State University, 1972; M.S., North Dakota State University-Fargo, 1975; Ph.D., 1977.
Adjunct Professor, Plant Science
Lea-Cox John D. Full Member

Culver James N. Full Member
B.S., Oklahoma State University-Stillwater, 1985; M.S., Oklahoma State University, 1987; Ph.D., University of California-Riverside, 1991.
Professor, Plant Science Affiliate Professor, Bioengineering Affiliate Professor, Biological Sciences
Liu Zhongchi Full Member
B.S., Wuhan University, 1982; M.A., Harvard University, 1985; Ph.D., 1990.
Associate Professor, Biological Sciences Affiliate Professor, Plant Science
Micallef Shirley Full Member
B.S., University of Malta, 1991; M.S., University of Malta, 1996; Ph.D., University of Massachusetts Boston, 2008
Assistant Professor, Plant Science Affiliate Professor, Biological Sciences

Everts Kathryne L. Full Member
B.S., Colorado State University, 1981; M.S., 1984; Ph.D., Michigan State University, 1989.
Professor, Plant Science
Murphy Angus S. Full Member
B.A., University of California, Santa Cruz, 1993; Ph.D., 1996.
Professor, Plant Science Affiliate Professor, Biological Sciences

Johnson Lea Full Member
I.B., United World College of the American West, 1992; B.A., University of New Mexico, 1996; M.S., New Mexico Highlands University, 2004; M.A., City University of New York, 2005; Ph.D., Rutgers University, 2013
Assistant Professor, Plant Science
Neel Maile Full Member
B.A., Humboldt State University, 1985; M.S., University of California Santa Barbara, 1994; Ph.D. University of California Riverside, 2000
Associate Professor, Entomology Associate Professor, Plant Science Associate Professor, Biological Sciences
<table>
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<tr>
<th>Peer</th>
<th>Wendy A.</th>
<th>Full Member</th>
<th>Degree/Institution/Year</th>
<th>Associate/Full Member</th>
<th>Degree/Institution/Year</th>
<th>Professor/Full Member</th>
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<tr>
<td>Phillips</td>
<td>William Henry</td>
<td>Full Member</td>
<td>B.S., University of Maryland, 1992; M.S., University of Maryland, 1996; Ph.D., University of Maryland, 2005</td>
<td>Assistant Clinical Professor, Plant Science</td>
<td>Tully</td>
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<tr>
<td>Schulz</td>
<td>Burkhard</td>
<td>Full Member</td>
<td>Diploma, Free University of Berlin, 1986; Ph.D., Free University of Berlin, 1990</td>
<td>Assistant Professor, Plant Science</td>
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<tr>
<td>Sullivan</td>
<td>Joseph H.</td>
<td>Full Member</td>
<td>B.A., Erskine College, 1978; M.S., Western Carolina University, 1980; Ph.D., Clemson University, 1985</td>
<td>Professor, Plant Science</td>
<td>Walsh</td>
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<tr>
<td>Swett</td>
<td>Cassandra L.</td>
<td>Full Member</td>
<td>B.S., University of California, Santa Cruz; M.S., University of Hawaii, Manoa, 2007; Ph.D., University of California, Davis, 2013</td>
<td>Assistant Professor, Plant Science</td>
<td>Xiao</td>
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</tr>
<tr>
<td>Swett</td>
<td>Jianhua</td>
<td>Full Member</td>
<td>B.S., National Taiwan University, 1968; M.S., University of California-Davis, 1970; Ph.D., Purdue University, 1975</td>
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<tr>
<td>Sze</td>
<td>Heven</td>
<td>Full Member</td>
<td>B.S., National Taiwan University, 1968; M.S., University of California-Davis, 1970; Ph.D., Purdue University, 1975</td>
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<tr>
<td>Tully</td>
<td>Katherine</td>
<td>Full Member</td>
<td>B.A., Kenyon College, 2004; M.S., Ecology, University of Virginia, 2007; Ph.D. Ecology, University of Virginia, 2001</td>
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<tr>
<td>Thomas R.</td>
<td>Full Member</td>
<td>B.A., Virginia Polytechnic Institute &amp; State University, 1973; M.S., Pennsylvania State University, University Park, 1976; Ph.D., 1980.</td>
<td>Associate Professor, Plant Science</td>
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<tr>
<td>Walsh</td>
<td>Christopher S.</td>
<td>Full Member</td>
<td>B.A., Middlebury College, 1969; M.S., Cornell University, 1977; Ph.D., 1980.</td>
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<tr>
<td>Zhu</td>
<td>Shunyuan</td>
<td>Full Member</td>
<td>B.S., Huazhong Agricultural University, China, 1984; M.Sc., 1987; Ph.D., 1992.</td>
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<tr>
<td>Zhu</td>
<td>Jianhua</td>
<td>Full Member</td>
<td>B.S., Anhui Institute of Education, China, 1998; Ph.D., Purdue University, 2004.</td>
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