

DEPARTMENT OF PLANT SCIENCES

Juliet Marshall, Chair (Aberdeen, ID; phone 208-885-2122; plantsciences@uidaho.edu).

The Department of Plant Sciences is in the College of Agricultural and Life Sciences. We offer a B.S. degree in plant science within which students may focus on majors tailored to the needs of their educational and career goals in agriculture and plant sciences. At the graduate level, we offer M.S. and Ph.D. degrees in plant science.

Our faculty and staff are committed to helping students develop skills needed for professional careers in theoretical and applied sciences to increase future crop production and agricultural sustainability. In addition, we offer courses and laboratory experiences in the use of biotechnology and modern plant breeding to improve and protect the major crops in the Pacific Northwest.

Undergraduate Degree Program

B.S. Degree in Plant Science

The degree offers students broad-based preparation in crop science and management, horticulture, plant biotechnology, plant breeding and genetics, and weed science. The four majors in this degree program are biotechnology and plant genomics, crop management, crop science, and horticulture and urban agriculture.

Biotechnology and Plant Genomics

Students in the biotechnology and plant genomics major will gain experience with the latest molecular genetic techniques to address food and energy needs of the United States and world in the 21st century. Students will learn how scientists investigate and manipulate genetic information at the molecular level to create and select crop plants with improved yield, nutritional value, insect and disease resistance, and temperature tolerance to address the needs of today's farmers and the challenges brought on by the ever-growing world population, competing demands for water, and threats brought on by climate change. Our students are offered numerous opportunities to participate in research projects in our plant biotechnology laboratories. This major prepares students for graduate education or for professional careers in industries that routinely employ genomics, genetic engineering, marker-assisted plant breeding, plant genetics, molecular biology, tissue culture, and molecular responses to disease.

Crop Management

The crop management major is new and designed to meet high demands for graduates qualified in applied field agronomy, production agriculture and production management, and business decision-making that arises in local and nationwide agriculture. Future expanding food and energy needs will require crop production managers and farm managers to ensure high volume and high quality of agricultural products. Students who have an interest in management of crops should enroll in this major rather than crops sciences, which requires more science courses. In addition, students majoring in crop management will be educated in applied crop production and management, combined with courses in agricultural economics and farming systems. This major will be particularly attractive to students who wish to be employed in applied production agriculture. Graduates will be well-rounded and prepared

to manage family or large corporate agro-businesses and work as field agronomists, crop production managers, and farm managers.

Crop Science

Students in the crop science major receive a science-based education in a wide range of disciplines aimed at solving theoretical and applied challenges relating to increasing agricultural productivity and developing systems that advance agriculture sciences into the future. Demand for increased food production is ever present and to compete, agriculture needs to develop new crop genetics and agronomic practices that maximize output while reducing crop inputs and the agricultural footprint on the environment. This major combines physical and biological sciences and related subjects to develop innovative solutions to a wide range of problems that will be met by future agriculture. Courses emphasize environmental concerns, ecological relationships, and sustainability of agricultural systems. This major will prepare students for graduate education or professional careers in field agronomy, agricultural research, plant protection, agricultural consulting, plant breeding and genetics, seed production and certification, and weed science.

Horticulture and Urban Agriculture

The horticulture and urban agriculture major is designed to provide students with a background in production of various horticultural crops in rural and urban locations or experience with care of managed landscapes including parks and sports turf. Students can tailor horticulture course selection to specialize in a particular horticulture career. Management of horticultural crops that are economically significant to Idaho and the nation are emphasized in various courses. Many facets of horticulture, including horticultural crop production, can be studied, particularly since food security and sustainable production practices are needed if graduates are to meet the challenges posed by increased urbanization and more costly resources needed for plant production. Students are prepared for graduate studies or professional careers in management and operation of commercial greenhouses, nurseries, orchards, vineyards or vegetable farms. Students also have the opportunity to focus on managing and maintaining the various components of urban landscapes including trees, shrubs, herbaceous plantings and turfgrass, and urban food production.

Our degree offerings are designed to prepare students for rewarding careers in public or private enterprises or for entrance into graduate and professional programs. We offer students the opportunity to work closely with faculty in classroom, laboratory, and field situations. Our faculty members care about our students' individual needs and interests and offer additional specialization through directed study, special topics, seminars, and other courses as needed. An internship program is available to provide students with practical job experience and to open doors for future careers. In addition, we coordinate closely with the Departments of Soil and Water Systems, Entomology, Plant Pathology and Nematology, Animal and Veterinary Science, and Agricultural Economics and Rural Sociology to broaden education offerings for our students.

Our students have access to the Lambert-Erickson Weed Herbarium that houses one of the nation's outstanding weed collections with all life stages of weeds represented. We have a state-of-the-art biotechnology facility with specially-equipped laboratories for histology, anatomy, and physiology, as well as greenhouse growing space and growth chambers/rooms with controlled temperature and light-programming capabilities. All these facilities can become part of each student's educational experiences. The University has 1,145 acres located close to campus for field crops and livestock. Excellent field and laboratory facilities are also available at our research and extension centers at Aberdeen, Parma

and Twin Falls, including nationally recognized fruit research and potato research programs.

We welcome questions regarding our programs. Prospective students may contact us by email at plantsciences@uidaho.edu or by telephone at 208-885-2122.

Majors

- Biotechnology and Plant Genomics (B.S.Pl.Sc.) (<https://catalog.uidaho.edu/colleges-related-units/agricultural-life-sciences/plant-sciences/biotechnology-plant-genomics-bsplsc/>)
- Crop Science and Management (B.S.Pl.Sc.) (<https://catalog.uidaho.edu/colleges-related-units/agricultural-life-sciences/plant-sciences/crop-science-bsplsc/>)
- Horticulture and Urban Agriculture (B.S.Pl.Sc.) (<https://catalog.uidaho.edu/colleges-related-units/agricultural-life-sciences/plant-sciences/horticulture-urban-agriculture-bsplsc/>)

Minors

- Biotechnology and Plant Genomics Minor (<https://catalog.uidaho.edu/colleges-related-units/agricultural-life-sciences/plant-sciences/biotechnology-and-plant-genomics-minor/>)
- Crop Management Minor (<https://catalog.uidaho.edu/colleges-related-units/agricultural-life-sciences/plant-sciences/crop-management-minor/>)
- Crop Science Minor (<https://catalog.uidaho.edu/colleges-related-units/agricultural-life-sciences/plant-sciences/crop-science-minor/>)
- Horticulture Minor (<https://catalog.uidaho.edu/colleges-related-units/agricultural-life-sciences/plant-sciences/horticulture-minor/>)

Plant Sciences Graduate Programs

Candidates must fulfill the requirements of the College of Graduate Studies and of the Department of Plant, Soil, and Entomological Sciences. See the College of Graduate Studies (<https://catalog.uidaho.edu/colleges-related-units/graduate-studies/>) section for general requirements applicable to each degree.

Master and Doctoral students will choose a major professor with the concurrence of the faculty member involved. This choice is based upon the availability of the faculty member and the compatibility of the student's research interests with those of the professor.

- Plant Science (M.S.) (<https://catalog.uidaho.edu/colleges-related-units/agricultural-life-sciences/plant-sciences/plant-science-ms/>)
- Plant Science (Ph.D.) (<https://catalog.uidaho.edu/colleges-related-units/agricultural-life-sciences/plant-sciences/plant-science-phd/>)