Plant Science, MS, PhD

Department: Plants, Soils, and Climate Department
College: College of Agriculture and Applied Sciences

Overview

About This Degree

USU is home to the only agriculturally focused plant science degrees in the state. The plant science graduate degrees are centered on the biology, genetics, and management of plants and other issues related to agricultural and horticultural production. In particular, USU's plant science programs focus on regional issues pertaining to the West and current environmental issues, such as the management of invasive weed species, specifically the weed problems of the Intermountain West, and the challenges of organic and sustainable agriculture in the West's arid climate.

Each graduate student in the department follows a unique and completely customized plan of study. Students work closely with faculty on research projects and receive individual attention and mentoring as they complete their research. Students can focus their research in a variety of areas as they develop solutions to current problems. Those areas may include environmental plant physiology, genetics, molecular biology, plant breeding, crop production, sustainable and organic crop and forage production systems, weed science, urban landscape management, and water management in agricultural and horticultural crops, including turf and other ornamentals.

Career Options

Graduates in plant science can pursue the following careers:

- Plant breeder
- Plant genetics
- Fertilizer development
- Pesticide research and development
- Weed control
- Weed scientist
- Consulting scientist
- Plant disease control
- Research and development
- Sales
- Manage operations for large farms

What it takes

Admissions Requirements

Students without an undergraduate or graduate degree in plants, soils, biometeorology, or a closely related field may be required to complete selected undergraduate courses prior to admission.

Application Requirements:

- Complete the online application
- Pay the $55 application fee
- Score at or above the 40th percentile on the GRE
- Have a 3.0 or higher GPA on your last 60 semester or 90 quarter credits
- Provide transcripts of all college/university credits
- Provide three contacts for letters of recommendation

International students have additional admissions requirements.

Admissions Deadlines

Applications for graduate programs are accepted year-round. However, chances for acceptance are best if students apply between October and January of each academic year. The time it takes to process an application is primarily dependent on the speed with which the School of Graduate Studies receives letters of recommendation, transcripts, and test scores. For most students, this process may take six to eight weeks. Applicants should plan accordingly.

Master's Degree Plan Options

Students can receive the MS by pursuing one of two options:

- In the **Plan A** option, students complete graduate-level coursework and must write a thesis.
- The **Plan B** option requires the production of a paper or creative work of art and is expected to reflect equivalent scholarship standards as a thesis.

Students are encouraged to pursue the Plan A option.

Financial Assistance

The department typically funds all of its graduate students with research assistantships.

A variety of additional funding opportunities are available, including fellowships, scholarships, tuition awards, and travel support. Additionally, students may be eligible for subsidized health insurance through qualifying assistantships.

Program Requirements

Click here to see course requirements for the **Master of Science**.

Click here to see course requirements for the **Doctor of Philosophy**.

PhD Qualifying Exams:

Each student must undergo some sort of qualifying experience. Depending on the student's particular research and their faculty committee, the exam can either be a traditional oral and written exam, a scholarly proposal, or another option best suited to the student's individual situation.

Contact

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Get Involved

Professional Organizations, Honor Societies, and Clubs

American Chemical Society: With more than 163,000 members, the ACS is the world's largest scientific society and one of the world's leading sources of authoritative scientific information. A nonprofit organization, chartered by Congress, ACS is at the forefront of the evolving worldwide chemical enterprise and the premier professional home for chemists, chemical engineers, and related professions around the globe.

American Geophysical Union: AGU is a nonprofit corporation dedicated to the furtherance of the geophysical sciences through the individual efforts of its members and in cooperation with other national and international scientific organizations.

American Meteorological Society: AMS promotes the development and dissemination of information and education on the atmospheric and related oceanic and hydrologic sciences and the advancement of their professional applications. AMS publishes nine journals, sponsors more than 12 conferences annually, and offers numerous programs and services.

American Society of Agronomy, Crop Science Society of America, and Soil Science Society of America: ASA, CSSA, and SSSA are prominent international scientific societies headquartered in Madison, Wisconsin. Because of their common interests, all three societies share a close working relationship as well as the same headquarters office staff. Society members are dedicated to the conservation and wise use of natural resources to produce food, feed, and fiber crops while maintaining and improving the environment.

American Society for Horticultural Science: ASHS supports the science for specialty crops, global solutions for nutritious food sources, and healthy, beautiful environments. ASHS members (researchers, faculty, and other educational personnel, Extension agents, federal and state experiment station representatives, and growers and distributors of horticultural products) continue to make significant advances in these areas, and are well-positioned to lead the rapid evolution of horticultural science through the 21st century.

American Water Works Association: AWWA is the authoritative resource on safe water, with more than 60,000 members worldwide sharing knowledge on water resource development, water and wastewater treatment technology, water storage and distribution, and utility management and operations.

Ecological Society of America: ESA is a nonpartisan, nonprofit organization of scientists founded in 1915 to improve communication among ecologists, raise public awareness of the importance of ecology, and influence environmental decision making by enhancing communication between the ecological community and policy makers.

Labs, Centers, Research

Center for Atmospheric and Space Sciences: CASS is recognized nationally and internationally as a progressive research center with advanced space and upper atmospheric research programs. CASS scientists are tackling the adverse consequences of space weather. Undergraduate and graduate students are involved in numerous research projects in CASS that provide opportunities to program computers, analyze data, and build instrumentation.

Center for Integrated BioSystems: The CIB leads a progressive, interdisciplinary effort in research, core services, and education serving agriculture and life sciences. The CIB is where the first hybrid animal, a mule, was cloned, and was named one of "30 Awesome College Labs" by Popular Science magazine. The CIB has a research program with several active projects in diverse areas of life science that encompass plant, animal, and microbe functional genomics.

Rocky Mountain NASA Space Grant Consortium: RMNSGC is one of 52 National Space Grant Consortia in the United States. As a member of the consortium, USU has awarded more than 100 fellowships to students interested in aerospace-related education and careers. The majority of Space Grant student awards include a mentored research experience with university faculty and NASA scientists, engineers, and technologists.

Space Dynamics Laboratory: SDL is known for sending 500+ successful experiments into space and brings in $54 million per year in revenue, the majority coming from grants, contracts, and appropriations. SDL's expertise in the development of sensors and calibration, small satellites and real-time intelligence has made it an internationally known organization in the space arena.

USDA ARS Poisonous Plant Research Laboratory: The Poisonous Plant Research Laboratory identifies toxic plants, and its interdisciplinary teams of chemists, geneticists, pathologists, physiologists, plant and range scientists, toxicologists and veterinarians provide an interdisciplinary approach of applied and basic research to develop solutions to intoxication.

Utah Agricultural Experiment Station: The UAES is part of a network of researchers and facilities at the nation's land-grant universities and is committed to improving agriculture and managing natural resources for the people of Utah. At research facilities on the USU campus and throughout the state, UAES supports hundreds of research projects that promote agriculture and human nutrition and enhance the quality of rural life.

Utah Botanical Center: The UBC, located in Kaysville, Utah, is home to research and demonstration projects focused on sustainable living in the Intermountain West. Studies of water conservation, horticulture, water quality enhancement, wetland ecology, integrated pest management, urban forestry, agriculture, fish and wildlife, highway enhancement, and storm-water management combine to make the center a living laboratory.