Department of Plant Sciences and Plant Pathology

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Interim Department Head
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The department offers advanced study leading to a Master of Science degree in plant sciences and plant pathology under either Plan A (thesis) or B (project or professional paper). In addition, a Ph.D. degree is offered in plant sciences with an option in either plant pathology or plant genetics. Supporting minors are also available in each of the degree fields. The department has major research strengths in the following areas: plant breeding and genetics, plant pathology, plant-microbe interactions, mycology, biocontrol, biotechnology, plant physiology, plant systematics, molecular evolution, and biochemistry.

Departmental Facilities
The department is housed in both Leon Johnson Hall and the Plant BioScience Facility located on the Bozeman campus. The research laboratories range in size from 600-720 sq. ft and are assigned to individual researchers. Individual laboratories are well equipped with the instruments and tools necessary to complete each research project. Researchers cooperate to purchase, share and maintain expensive pieces of specialized equipment or facilities such as the Electron Microscope Lab. Laboratories and offices are wired with high-speed computer lines for direct access to the Internet and the World Wide Web. The faculty has access to the Plant Growth Center Facility (a teaching and research facility available to the College of Agriculture staff). The current 60,000 square-foot facility houses 29 glasshouse rooms with 8,300 square feet of bench space – both temperature and lights are micro-computer controlled; 13 walk in growth rooms where all environmental variables are computer controlled; insect quarantine facilities with separate glasshouses and growth chambers; plant pathogen isolation facilities with 4 glasshouse rooms of 320 sq. ft; the Montana Potato Lab which is responsible for providing disease free seed stock to Montana potato producers. Other important accesses to the department are the Horticulture Farm, Post Research Farm, which is a 300 acre site dedicated to plant and soil research activities, and the MSU Herbarium located in Lewis Hall.

Admission
For detailed information on applying, required test scores and more, please see the department pages on graduate application process: http://plantsciences.montana.edu/studentinfo/grad/index.html. (http://plantsciences.montana.edu/studentinfo/grad/) Students seeking admission to graduate status must hold a BS degree and have a record of high scholarship in areas closely related to the plant sciences.

Plant Sciences
Graduate students majoring in this field may obtain a Master of Science degree in plant science or a Ph.D. degree in plant science with a plant genetics option. Areas of concentration include plant breeding and genetics, plant molecular genetics and biotechnology, physiological genetics, plant systematics, and population genetics.

Plant Pathology
Graduate students majoring in this field may obtain a Master of Science degree in plant science or a Ph.D. degree in plant science with a plant pathology option. Areas of concentration include: biocontrol, mycology, plant-pathogen interactions, biochemistry and molecular genetics of plant disease and virology.

Required Courses
There are no set course requirements for Plant Sciences degree programs. Course requirements are set by the student’s graduate committee. However, all students are required to participate regularly in the PSPP seminar series, which includes presenting a research seminar once a year for each academic year enrolled in graduate school. In order to facilitate this seminar participation and presentation requirement, graduate students can enroll in PSPP 594 Seminar (1 credit), which is offered every Fall and Spring semester.

The PSPP Department requires a minimum of thirty (30) credits for a master’s degree, both thesis and non-thesis (Plan A, Plan B, Plan C). For a master’s degree with a thesis, the PSPP Department combines the required comprehensive examination and thesis defense such that they can be offered simultaneously. For additional master’s degree requirements, see The Graduate School web page http://www.montana.edu/gradschool/policy/degreq_masters.html.

The PSPP Department requires a minimum of thirty (60) credits for a PhD degree, of which eighteen (18) to twenty-eight (28) must be dissertation credits. A maximum of thirty (30) credits from a previously earned master’s degree (from MSU or another accredited University) may be applied toward the sixty (60) credit minimum required for the doctoral degree.

Doctoral students who have previously earned a master’s degree must take at least twelve (12) coursework credits and eighteen (18) to twenty-eight (28) dissertation (690) credits beyond the master’s degree credits. For a PhD degree, the PSPP Department combines the required comprehensive examination and thesis defense such that they can be offered simultaneously. For additional PhD degree requirements, see The Graduate School web page http://www.montana.edu/gradschool/policy/degreq_doctoral.html.

Degrees Offered
- M.S. in Plant Pathology (http://catalog.montana.edu/graduate/agriculture/plant-sciences-plant-pathology/ms-plant-pathology/)
- M.S. in Plant Sciences (http://catalog.montana.edu/graduate/agriculture/plant-sciences-plant-pathology/ms-plant-sciences/)
- Ph.D. in Plant Sciences (http://catalog.montana.edu/graduate/agriculture/plant-sciences-plant-pathology/phd-plant-sciences/)