Division of Plant and Soil Sciences

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Degrees Offered
• Master of Science
• Doctor of Philosophy

The Davis College of Agriculture, Natural Resources, and Design offers graduate studies leading to the degree of doctor of philosophy in agricultural sciences. The doctoral program offers two majors: animal and food sciences, and plant and soil sciences. The objective of the degree program is to provide doctoral students an opportunity to study and conduct research with faculty in areas of excellence within the college. Students entering this program may select research and classes in ten areas of emphasis: agricultural biochemistry, animal nutrition, animal physiology, production management, crops agronomy, entomology, environmental microbiology, horticulture, plant pathology, and soil sciences.

Faculty

Director
• Barton S. Baker - Ph.D. (WVU)
  Division Director, Graduate Program Coordinator

Professors
• Barton S. Baker - Ph.D. (West Virginia University)
  Agronomy, Forage Crops
• Alan R. Biggs - Ph.D. (The Pennsylvania State University)
  Plant Pathology, Tree Fruits
• Gary K. Bissonnette - Ph.D. (Montana State University)
  Applied and Environmental Microbiology, Aquatic Microbiology
• William L. MacDonald - Ph.D. (Iowa State University)
  Plant Pathology, Forest and Shade Tree Diseases
• Louis M. McDonald - Ph.D. (University of Kentucky)
  Soil Science, Soil Chemistry
• Joseph B. Morton - Ph.D. (Montana State University)
  Plant Pathology, Mycorrhizal Interactions, Field Crop Diseases
• Daniel Panaccione - Ph.D. (Purdue State University)
  Plant Pathology, Mycology, Mycotoxins, Molecular Biology
• Alan J. Sextone - Ph.D. (Michigan State)
  Applied and Environmental Microbiology, Soil Microbiology
• Jeffrey Skousen - Ph.D. (Texas A&M University)
  Soil Science, Land Reclamation, Soil and Water Conservation, Watershed Restoration

Associate Professors
• James B. Kotcon - Ph.D. (University of Wisconsin)
  Plant Pathology, Agroecology, Nematology, Organic Farming Practices
• Yong-Lak Park - Ph.D. (Iowa State University)
• Eugenia M. Pena-Yewtuhiw - Ph.D. (University of Kentucky)
  Soil Science
• James A. Thompson - Ph.D. (University of Minnesota)
  Soil Science, Pedology, and Land Use
• Sven Verlinden - Ph.D. (Purdue University)
  Horticulture, Post Harvest Physiology, Molecular Biology

Assistant Professors
• Vagner A. Benedito - Ph.D. (Wageningen University, The Netherlands)
  Genetics and Developmental Biology; Plant Geonomics, Functional Genetics, and Plant Physiology
• Thomas Griggs - Ph.D. (Texas Tech University)
  Agronomy, Field and Forage Crops
Admission and Performance Standards

In order for a student to be admitted to the program, the applicant normally must fulfill the following admission criteria to be considered:

- Possess a baccalaureate degree.
- Have a minimum undergraduate grade point average of 2.75 (3.0 for acceptance as a regular graduate student).
- Have an adequate academic aptitude at the graduate level as measured by the Graduate Record Examination (GRE) or other tests/evidence.
- Provide three letters of reference from persons acquainted with the applicant’s professional work, experience, or academic background.
- Submit a written statement of approximately 500 words indicating the applicant’s goals and objectives relative to receiving a graduate degree.

International students have the additional requirement to submit a TOEFL examination if their native language is not English. Interviews are encouraged but not required.

Students enrolled in the M.S. in plant and soil sciences must complete STAT 511, STAT 512, and three semesters of seminar in their area of emphasis. Other class requirements will be determined by the student’s graduate committee and made a part of the student’s plan of study. This degree requires a minimum of thirty graduate credit hours, six of which may be research.

Each student must develop a plan of study, conduct original research, and prepare a thesis. The plan of study which is to be developed within the first year of study must contain the courses to be taken plus an outline of the research to be conducted. The thesis must be satisfactorily defended in an oral examination given by the student’s graduate committee.
Agricultural Sciences Ph.D.

Core Courses

Doctoral students must satisfactorily complete a set of core courses before they will be admitted to candidacy for the Ph.D. degree. All core courses will be at the 600 or 700 level, except where indicated below. Certain course requirements may be waived if the student has received equivalent training in prior coursework. Additional coursework pertaining to the student’s area of specialization will be determined by the student’s major professor and graduate committee.

Core courses for students in the doctoral program in agricultural sciences will be in the following areas:

- A minimum of six credit-hours must be completed in biology or earth sciences (excluding courses within a student’s major field of study).
- A minimum of six credit-hours must be completed in biochemistry or advanced chemistry (400 level or above), depending on the student’s research concentration.
- A two-semester sequence (minimum of six credits) must be completed in graduate-level statistics plus a course in experimental design, or a two-semester sequence (minimum of six credits) must be completed in graduate-level statistics plus one semester (minimum of three credits) of computer science beyond the introductory level.
- One seminar must be presented during each year or part of year in residence. A final dissertation research seminar will be presented as a college or university-wide seminar.
- Oral and written comprehensive (qualifying) examinations will be administered by the student’s graduate committee before the end of the second year following admission to the program. Satisfactory completion of the comprehensive examinations and core course requirements will admit the student to candidacy for the Ph.D.

Each candidate for the Ph.D. will be expected to meet the following general requirements:

- A minimum of three semesters in residence
- Successful completion of coursework requirements with a grade point average of 3.0 or higher
- Successful completion of comprehensive examinations prepared and evaluated by the student’s graduate committee (Oral and written qualifying exams will be taken before the end of the second year following admission to the program.)
- A dissertation (The dissertation research must be applied toward an approved experiment station project or an approved independently funded research project.)
- Successful oral defense of the dissertation

Although not required, presentation of research results at meetings of a professional society and submission of manuscripts for publication are encouraged.