

PLANT PATHOLOGY, PHD

The discipline of plant pathology is directed toward understanding and solving disease problems of plants. The field is broad and complex, integrating disciplines as varied as molecular biology, genetics, cell biology, organismal biology, population and community ecology, meteorology, statistics, computer science, chemistry, and physics. Plant pathology encompasses basic and applied research, employs both model systems and economically important plants, and requires both laboratory and field experimentation. Active research programs in the department encompass this full spectrum of questions and approaches, including research on virology, nematology, fungal genetics, tissue culture, soil microbiology and ecology, forest pathology, bacterial plant pathogens, molecular biology of parasite–host interactions, microbial ecology, epidemiology, and integrated disease management strategies.

The graduate program in plant pathology educates students in the science of plant pathology and prepares them for successful careers. Students develop the following skills required to meet diverse professional situations: excellence in research; breadth and depth in plant pathology; breadth in an allied field; strong critical and analytical thinking skills; and effective communication skills. Students become sufficiently knowledgeable in all aspects of plant pathology to identify key research questions, recognize significant discoveries, and think analytically about interpretation of data.

The level of proficiency in specific areas will vary with the student's research area and career goals, and will be appropriate to the student's degree program (MS or PhD). Specific areas of proficiency addressed by the PhD curriculum include etiology, diagnosis, and management of plant disease; ecology and epidemiology; genetics and physiology of plant–microbe interactions; and organismal biology. PhD students may elect an optional professional development experience as part of their curriculum. Graduates of the program attain positions in teaching, research in academic positions, government services, industry, extension services, and private practice.

The program is comprised of about 100 faculty members, graduate students, and research and support staff. It is housed in an eight-story wing of Russell Laboratories, a teaching and research facility on the UW–Madison campus, which is surrounded by other facilities that are also devoted to biological research. Russell Labs, together with the extensive research facilities available on the rest of the UW–Madison campus and at field research stations throughout Wisconsin, provide a rich and comprehensive environment for research and graduate studies in all branches of plant pathology.