

# Plant Pathology

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## Department Information

- **Department Chair:**  
Jack Rasmussen, Ph.D.
- **Department Location:**  
Walster Hall
- **Department Phone:**  
(701) 231-8362
- **Department Web Site:**  
[www.ag.ndsu.edu/plantpath/](http://www.ag.ndsu.edu/plantpath/) (<http://www.ag.ndsu.edu/plantpath/>)
- **Application Deadline:**  
International applications are due May 1 for fall semester and August 1 for spring and summer semesters. Domestic applicants should apply at least one month prior to the start of classes.
- **Credential Offered:**  
Ph.D., M.S.
- **English Proficiency Requirements:**  
TOEFL ibt 79; IELTS 6.5; Duolingo 105

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## Program Description

The Department of Plant Pathology offers graduate study leading to the M.S. and Ph.D. degrees. Advanced degrees may involve specialized training in the following areas: host-parasite genetics, molecular biology and genomics, epidemiology, soil and seed-borne diseases, microbial ecology, and integrated disease management.

Student research and academic programs are tailored to individual needs and interests.

Five graduate faculty members are housed in the Northern Crops Science Laboratory located on campus. This relationship provides additional opportunities for research and consultation.

The Department of Plant Pathology graduate program is open to all qualified graduates of universities and colleges of recognized standing. In addition to the Graduate School requirements (<http://catalog.ndsu.edu/past-bulletin-archive/2021-22/graduate/admission-information/>), the applicant must have adequate preparation in Plant Pathology or Biology.

## Financial Assistance

Research assistantships and part-time positions are available in the department. Applicants are considered on the basis of scholarship and potential to undertake advanced study and research. To be considered for an assistantship, a completed Graduate School application, official transcripts, and three letters of reference must be submitted. In addition to these materials, international applicants must also submit TOEFL scores. These items must be submitted to the Graduate School.

### Master of Science

Completion of a Master of Science degree is dependent on the completion of 30 semester hours in Plant Pathology or approved courses from related departments. Not less than 10 credits must reflect research in the desired area. No minor area of study is required with an MS degree, but a minor may be elected.

### Doctor of Philosophy

Completion of a Doctor of Philosophy degree is dependent on the completion of 60 semester hours beyond the MS degree or 90 credits total. Courses may include Plant Pathology or approved courses from related departments. Not less than 10 credits must reflect research in the desired area. A minor area of study is required with a PhD degree. Options are available in plant science, agronomy, plant breeding, microbiology, entomology and others.

Thomas Baldwin, Ph.D.

University of Georgia, 2013

Research Interests: Barley-Pathogen Interactions, RNA-Interference, Fungal Genetics, Fusarium head blight

Luis del Rio, Ph.D.

Iowa State University, 1999

Research Interests: Epidemiology of Plant Diseases, Chemical and Biological Control of Fungal Diseases, Management of Canola Diseases

**Malaika Ebert, Ph.D.**

Wageningen University & Research, 2018

Research Interests: Dry Bean and Pulse Crop Pathogens, Molecular Host-Microbe Interactions, Effectors, Secondary Metabolites, Proteins

**Andrew Friskop, Ph.D.**

North Dakota State University, 2013

Research Interests: Extension Plant Pathology, Chemical Control, Corn Diseases, Small Grain Diseases, IPM

**Upinder Gill, Ph.D.**

Washington State University, 2012

Research Interests: Management of rust diseases of wheat and other field crops, Genetics and genomics of host-pathogen interactions

**Mohamed Khan, Ph.D.**

Clemson University, 1998

Research Interests: Sugarbeet Management

**Janet J. Knodel, Ph.D.**

North Dakota State University, 2005

Research Interests: Extension Entomology, IPM of Field Crop Insects, Insect-Disease Surveys, Emerging Insects, Chemical Control

**Zhaohui Liu, Ph.D.**

North Dakota State University, 2006

Research interests: Molecular biology and genetics of host-pathogen interactions in wheat leaf spot diseases

**Samuel Markell, Ph.D.**

University of Arkansas, 2007

Research Interests: Extension Plant Pathology, Rust Diseases, IPM, Emerging Diseases, Chemical Control

**Steven W. Meinhardt, Ph.D.**

University of Illinois, 1984

Research Interests: Structure/Function Relationships in Enzymes and Toxins

**Berlin D. Nelson, Ph.D.**

Washington State University, 1979

Research Interests: Oilseed Diseases, Biological Control, Mycology

**Jack B. Rasmussen, Ph.D.**

Michigan State University, 1987

Research Interests: Molecular Biology and Role in Disease of Pathogen-Produced Toxins, Genetics of Resistance to Cereal Rust Diseases

**Gary A. Secor, Ph.D.**

University of California-Davis, 1978

Research Interests: Potato Diseases Management and Control, Biotechnology for Cultivar Improvement

**Julie Sherman Pasche, Ph.D.**

North Dakota State University, 2012

Research Interests: Potato disease management, fungicide efficacy and resistance management, pathogen detection and diversity

**Guiping Yan, Ph.D.**

Washington State University, 2006

Research Interests: Detection, biology and management of soybean cyst nematode and other plant-parasitic nematodes in field crops

**Shaobin Zhong, Ph.D.**

North Dakota State University, 2000

Research Interests: Fusarium Head Blight of Wheat, Fungal Biology and Genetics, Genomics and Functional Genomics of Host-Pathogen Interaction in Cereal Crops

## Adjunct

**Melvin Bolton, Ph.D.**

USDA/ARS

North Dakota State University, 2006

**Timothy L. Friesen, Ph.D.**

USDA/ARS

North Dakota State University, 2001

Research Interests: Host Parasite Interactions of Foliar Diseases of Cereals

**Michael C. Edwards, Ph.D.**

USDA/ARS

Cornell University, 1983

Research Interests: Virology, Cereal Virus Diseases

**Rubella Goswami, Ph.D.**

University of Minnesota, 2005

Research Interests: Pathogen Interactions, Fungal Biology, Molecular Biology and Genomics

**Thomas J. Gulya, Ph.D.**

USDA/ARS

Iowa State University, 1978

Research Interests: Downy Mildew, Rust, Phomopsis Stem Canker, Sclerotinia Wilt of Sunflower

**Michael Wunsch, Ph.D.**

Cornell University, 2010

Research Interests: Varietal Disease Resistance, Fungicide Efficacy and Timing, and Use of Cropping Systems t