

PLANT PATHOLOGY AND PLANT-MICROBE BIOLOGY (GRADUATE FIELD)

Program Website (<https://cals.cornell.edu/school-integrative-plant-science/degrees-programs/msphd-graduate-fields/msphd-field-plant-pathology-plant-microbe-biology/>)

Field Description

Plant pathology and plant-microbe biology are the study of plant diseases and the biology of plant-microbe interactions at the molecular to ecosystem levels of organization. The field of plant pathology and plant-microbe biology at Cornell offers graduate degree programs in plant pathology and the biology, genetics, and evolution of fungi and oomycetes.

In addition to plant pathology and plant-microbe biology, Cornell University offers graduate programs that cover the full spectrum of plant sciences. View more information on graduate studies (<https://cals.cornell.edu/school-integrative-plant-science/degrees-programs/sips-msphd-graduate-fields/>) in related fields of plant sciences.

Data and Statistics

- Research Master's Program Statistics (<https://gradschool.cornell.edu/about/program-metrics-assessments-and-outcomes/research-masters-program-statistics/?SelectGradField=59>)
- Doctoral Program Statistics (<https://gradschool.cornell.edu/about/program-metrics-assessments-and-outcomes/doctoral-program-statistics/?SelectGradField=59>)

Field Manual

- Manual (<https://cals.cornell.edu/school-integrative-plant-science/degrees-programs/msphd-graduate-fields/msphd-field-plant-pathology-plant-microbe-biology/graduate-field-requirements-plant-pathology-plant-microbe-biology/>)

Subject and Degrees

Plant Pathology

- Plant Pathology (MS) (<https://catalog.cornell.edu/programs/plant-pathology-ms/>)
- Plant Pathology (PhD) (<https://catalog.cornell.edu/programs/plant-pathology-phd/>)

Concentrations by Subject

Plant Pathology

- fungal and oomycete biology
- plant pathology
- plant-microbe biology

Faculty

Maricelis Acevedo (<http://cals.cornell.edu/maricelis-acevedo/>)

- **Campus:** Ithaca
- **Concentrations:** *Plant Pathology:* fungal and oomycete biology; plant pathology
- **Research Interests:** cereal rust pathology and pathogen population biology, international plant pathology aspects, host resistance

Lindsey Elizabeth Becker (<http://cals.cornell.edu/people/lindsey-becker/>)

- **Campus:** Ithaca
- **Concentrations:** *Plant Pathology:* fungal and oomycete biology; plant pathology; plant-microbe biology
- **Research Interests:** Microbiomes, Plant-microbe interactions

Adam Bogdanove (<http://cals.cornell.edu/adam-j-bogdanove/>)

- **Campus:** Ithaca
- **Concentrations:** *Plant Pathology:* fungal and oomycete biology; plant pathology; plant-microbe biology
- **Research Interests:** bacterial pathogens of plants; especially molecular interactions of *Xanthomonas oryzae* with rice; TAL effector biology and application; genome editing for disease resistance; fungal effector biology

Collins Buggingo (<http://cals.cornell.edu/people/collins-buggingo/>)

- **Campus:** Ithaca
- **Concentrations:** *Plant Pathology:* fungal and oomycete biology; plant pathology
- **Research Interests:** Seed biology, Seed pathology, plant pathology, horticulture

Kathryn Bushley (<http://cals.cornell.edu/kathryn-bushley/>)

- **Campus:** Ithaca
- **Concentrations:** *Plant Pathology:* fungal and oomycete biology; plant pathology; plant-microbe biology
- **Research Interests:** Characterization of secondary metabolism in fungi and investigating roles of secondary metabolites in host-fungal interactions. Emphasis on root endophytes and insect pathogenic and nematode parasitic fungi.

Lance E. Cadle-Davidson (<http://cals.cornell.edu/lance-cadle-davidson/>)

- **Campus:** Ithaca
- **Concentrations:** *Plant Pathology:* fungal and oomycete biology; plant pathology; plant-microbe biology
- **Research Interests:** genetics and genomics of disease resistance; fungal and oomycete pathogens of grapevine

Clare L Casteel (<http://cals.cornell.edu/clare-casteel/>)

- **Campus:** Ithaca
- **Concentrations:** *Plant Pathology:* plant pathology; plant-microbe biology
- **Research Interests:** Viral pathogens of plants; vector-borne plant pathogens; ecological and molecular basis of virus-host and virus-vector-host interactions; molecular basis of plant defense responses to viruses and vectors

Scott David Cosseboom (<http://cals.cornell.edu/scott-cosseboom/>)

- **Campus:** Ithaca - (Minor Member)
- **Concentrations:** *Plant Pathology*: fungal and oomycete biology; plant pathology
- **Research Interests:** Plant Pathology, Tree Fruit Pathology, Epidemiology, Disease Management, Extension

Kerik D. Cox (<http://cals.cornell.edu/kerik-d-cox/>)

- **Campus:** Ithaca
- **Concentrations:** *Plant Pathology*: fungal and oomycete biology; plant pathology; plant-microbe biology
- **Research Interests:** orchard fungal ecology; extension pathology; pesticide management; fruit pathology

Zhangjun Fei (<http://btiscience.org/explore-bti/directory/zhangjun-fei/>)

- **Campus:** Ithaca
- **Concentrations:** *Plant Pathology*: plant-microbe biology

Melanie Filiatrault (<http://cals.cornell.edu/melanie-filiatrault/>)

- **Campus:** Ithaca
- **Concentrations:** *Plant Pathology*: plant-microbe biology
- **Research Interests:** Role of small non-coding RNAs and RNA binding proteins in the biology of bacterial plant pathogens; the development of new approaches to perform global transcriptome profiling

Marc Fuchs (<http://cals.cornell.edu/marc-f-fuchs/>)

- **Campus:** Ithaca
- **Concentrations:** *Plant Pathology*: plant pathology; plant-microbe biology
- **Research Interests:** virus diseases of fruit and vegetable crops; biology, epidemiology and management; development of virus-resistant fruit crops by genetic engineering

Katie Gold (<http://cals.cornell.edu/kaitlin-gold/>)

- **Campus:** Ithaca
- **Concentrations:** *Plant Pathology*: fungal and oomycete biology; plant pathology
- **Research Interests:** Grape Disease Ecology & Epidemiology, oomycete biology, epidemiology, and control; data science; digital agriculture; vegetative spectroscopy; proximal and remote sensing.

Zachariah Robert Hansen (<http://cals.cornell.edu/zachariah-hansen/>)

- **Campus:** Ithaca
- **Concentrations:** *Plant Pathology*: fungal and oomycete biology; plant pathology
- **Research Interests:** Potato pathology, plant pathology, plant disease management, plant-pathogen interactions.

Maria J. Harrison (<http://cals.cornell.edu/maria-harrison/>)

- **Campus:** Ithaca
- **Concentrations:** *Plant Pathology*: fungal and oomycete biology; plant-microbe biology
- **Research Interests:** elucidation of the molecular basis of the arbuscular mycorrhizal symbiosis and phosphate transport in plants

Frank Stewart Hay (<http://cals.cornell.edu/frank-hay/>)

- **Campus:** Ithaca - (Minor Member)
- **Concentrations:** *Plant Pathology*: fungal and oomycete biology; plant pathology
- **Research Interests:** Plant Pathology, Disease Management, Fungal Biology, Nematodes, Vegetables

Michelle L Heck (<http://www.ars.usda.gov/northeast-area/ithaca-ny/robert-w-holley-center-for-agriculture-health/emerging-pests-and-pathogens-research/docs/michelle-cilia/>)

- **Campus:** Ithaca
- **Concentrations:** *Plant Pathology*: plant pathology; plant-microbe biology

Kathie Hodge (<http://cals.cornell.edu/kathie-therese-hodge/>)

- **Campus:** Ithaca
- **Concentrations:** *Plant Pathology*: fungal and oomycete biology; plant pathology; plant-microbe biology
- **Research Interests:** systematics and ecology of pathogenic and symbiotic fungi, especially those that are pathogens of insects; director of the Cornell Plant Pathology Herbarium

Dominique Holtappels (<http://cals.cornell.edu/dominique-holtappels/>)

- **Campus:** Geneva
- **Concentrations:** *Plant Pathology*: fungal and oomycete biology; plant pathology; plant-microbe biology
- **Research Interests:** Biological control, controlled environment agriculture, bacterial diseases, plant pathology, disease management, plant-microbe interactions

Jian Hua (<http://cals.cornell.edu/jian-hua/>)

- **Campus:** Ithaca
- **Concentrations:** *Plant Pathology*: plant-microbe biology
- **Research Interests:** genetics of temperature responses in plants; regulation of plant defense responses

Lori Huberman (<http://blogs.cornell.edu/huberman/>)

- **Campus:** Ithaca
- **Concentrations:** *Plant Pathology*: fungal and oomycete biology; plant pathology; plant-microbe biology
- **Research Interests:** How fungi interact with the environment Nutrient sensing in filamentous fungi High-throughput functional genomics

Awais Khan (<http://cals.cornell.edu/awais-khan/>)

- **Campus:** Ithaca
- **Concentrations:** *Plant Pathology*: plant pathology; plant-microbe biology
- **Research Interests:** Genetics of host disease resistance; Genetic improvement of disease resistance; Pathogen population genetics; International Agriculture; Current research focus is fungal (apple scab) and bacterial (fire blight) diseases and pathogens of apples

Hannah Mary McMillan (<http://cals.cornell.edu/people/hannah-mcmillan/>)

- **Campus:** Ithaca
- **Concentrations:** *Plant Pathology:* fungal and oomycete biology; plant pathology; plant-microbe biology
- **Research Interests:** Plant-microbe interactions, Microbiomes

Rebecca Judith Nelson (<http://cals.cornell.edu/rebecca-judith-nelson/>)

- **Campus:** Ithaca
- **Concentrations:** *Plant Pathology:* fungal and oomycete biology; plant pathology; plant-microbe biology
- **Research Interests:** genetics of quantitative disease resistance; international agriculture; current focus on two diseases of maize that are important both in the United States and in Africa: northern corn leaf blight and gray leaf spot

Camilo Humberto Parada Rojas (<http://cals.cornell.edu/people/camilo-h-parada-rojas/>)

- **Campus:** Ithaca
- **Concentrations:** *Plant Pathology:* fungal and oomycete biology; plant pathology; plant-microbe biology
- **Research Interests:** Field crop pathology, Population Genomics, Disease management, Extension

Teresa Pawlowska (<http://cals.cornell.edu/teresa-e-pawlowska/>)

- **Campus:** Ithaca
- **Concentrations:** *Plant Pathology:* fungal and oomycete biology; plant pathology; plant-microbe biology
- **Research Interests:** biology and evolution of arbuscular mycorrhizal (AM) fungi (phylum Glomeromycota)

Sarah Jane Pethybridge (<http://cals.cornell.edu/sarah-jane-pethybridge/>)

- **Campus:** Ithaca
- **Concentrations:** *Plant Pathology:* fungal and oomycete biology; plant pathology; plant-microbe biology

Silvia Restrepo (<http://btscience.org/silvia-restrepo/>)

- **Campus:** Ithaca
- **Concentrations:** *Plant Pathology:* fungal and oomycete biology; plant pathology; plant-microbe biology
- **Research Interests:** Potato pathology, plant-microbe interactions, plant pathology

Jocelyn K. C. Rose (<http://cals.cornell.edu/jocelyn-kenneth-campbell-rose/>)

- **Campus:** Ithaca
- **Concentrations:** *Plant Pathology:* fungal and oomycete biology; plant-microbe biology
- **Research Interests:** structure, function and dynamics of the plant cell wall and apoplast during development and plant-pathogen interactions; coupling biochemistry with newly developed approaches involving genomics and proteomics; tomato issued as a model system to study wall and apoplastic dynamics in ripening fruits and in vegetative tissues in response to microbial challenge

Christine Durbahn Smart (<http://cals.cornell.edu/christine-durbahn-smart/>)

- **Campus:** Ithaca
- **Concentrations:** *Plant Pathology:* fungal and oomycete biology; plant pathology; plant-microbe biology
- **Research Interests:** biology and management of vegetable diseases; host-pathogen interactions

Paul Stodghill (<http://www.cs.cornell.edu/stodghil/>)

- **Campus:** Ithaca
- **Concentrations:** *Plant Pathology:* plant pathology; plant-microbe biology
- **Research Interests:** Computational methods for analyzing large datasets from high-throughput biological experiments

Bryan Swingle (<http://cals.cornell.edu/bryan-swingle/>)

- **Campus:** Ithaca
- **Concentrations:** *Plant Pathology:* plant pathology; plant-microbe biology
- **Research Interests:** Bacterial phytopathogen biology and functional genomics

Barbara Gillian Turgeon (<http://cals.cornell.edu/barbara-gillian-turgeon/>)

- **Campus:** Ithaca
- **Concentrations:** *Plant Pathology:* fungal and oomycete biology; plant-microbe biology
- **Research Interests:** genetics and molecular biology of fungal pathogens

Gregory Martin Vogel (<http://cals.cornell.edu/greg-vogel/>)

- **Campus:** Ithaca
- **Concentrations:** *Plant Pathology:* fungal and oomycete biology; plant pathology; plant-microbe biology
- **Research Interests:** Disease resistance, Plant-Microbe Interactions, Vegetable Diseases

Xiaohong Wang (<http://cals.cornell.edu/xiaohong-wang/>)

- **Campus:** Ithaca
- **Concentrations:** *Plant Pathology:* plant pathology; plant-microbe biology
- **Research Interests:** molecular basis of plant-nematode interactions; host resistance to the potato cyst nematodes