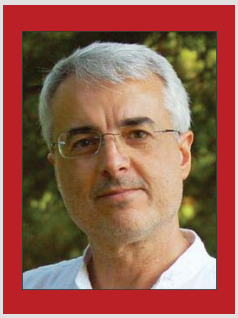
THE OHIO STATE UNIVERSITY
COLLEGE OF FOOD, AGRICULTURAL, AND ENVIRONMENTAL SCIENCES

Molecular and Chemical Ecology of Trees

DEPARTMENT OF PLANT PATHOLOGY



Enrico Bonello

2016-17 Lab Members
(from left to right in picture on left)

Katie D'Amico (*PhD student*)
David Showalter (*Postdoc*)
Caterina Villari (Postdoc)
Enrico Bonello (*P.I.*)
Beth Kyre (*Undergraduate*)

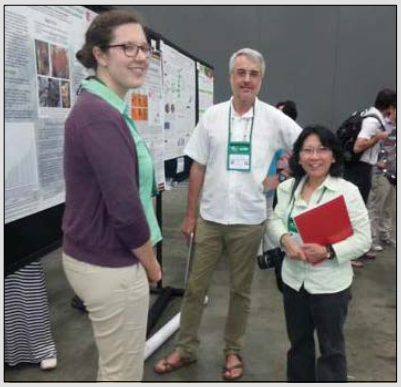
Pictured elsewhere:
Amna Fayyaz (*Visiting scholar), (pictured at bottom of poster)*
Carrie Ewing (*incoming Masters student*)

David applies methyl jasmoate phytohormone as an experimental treatment for emerald ash borer.

- Characterizing resistance mechanisms in coast live oak to the invasive pathogen, *Phytophthora ramorum*, the causal agent of sudden oak death
- Screening British ash germplasm for resistance to emerald ash borer
- Assessing the effects of climate and drought conditions on Austrian pine susceptibility to canker fungi in the genus *Diplodia.*
- Developing an infrared spectroscopy-based technique to phenotype tree resistance
- Determining the causal agent of the emerging beech leaf disease
- Identifying fungi associated with citrus withertip through molecular identification and comparative genomic analyses

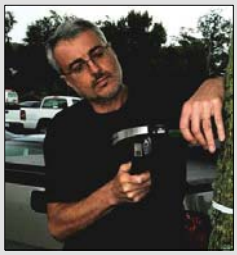
Amna Fayyaz performing lab work

David prepares a phytohormone solution in the field.



Former graduate student Anna Conrad, Enrico, and Monica Lewandowski at APS

Carrie sampling for beech leaf disease in NE Ohio.



Enrico collecting phloem samples

Katie sampling coast live oak phloem in California

Enrico and former graduate student Justin Whitehill sample ash trees.

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Soybean Pathology and Host Resistance Lab

DEPARTMENT OF PLANT PATHOLOGY

Anne Dorrance

2017 Lab Members

(from left to right, top to bottom):

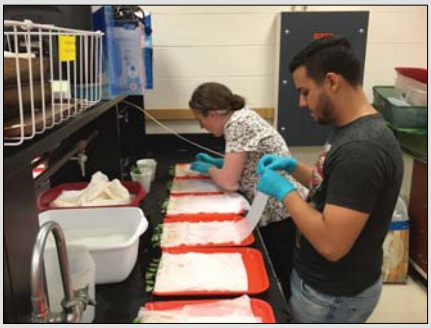
Amilcar Vargas (*MS Student*), Cassidy Gedling (PhD Student), Kelsey Scott (*MS Student*), Jonell Winger (*MPHM Student and Field Tech*), Anne Dorrance (*P.I.*), Sarah Veney (*summer intern*), Whitney Welker (*summer intern*), Linda Weber (*MS Student*), Anna Stasko (*PhD Student*), Ella Hayward-Lara (*summer intern*), Krystel Navarro (*PhD Student*), Jaqueline Huzar Novakowiski (*PhD Student*), Deloris Veney (*Lab Tech*)

Not pictured:
Jack Waldock (*MPHM Student*), Nathan Detwiler (*MPHM Student*), and Katie Kline (*summer intern*)

Our lab in the middle of a large eQTL tray assay

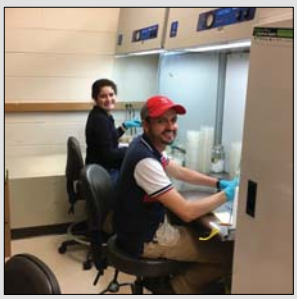
- Characterize Ohio soybean pathogen populations via traditional plating and microbiome approaches
- Identify sources of resistance for Ohio's key pathogens and characterize them for the number of loci and genes associated with resistance. More importantly, develop "perfect" markers for breeding.
- Contribute to private and public efforts to develop more resistant soybean cultivars
- Identify and compare quantitative resistance in soybean to *Pythium* spp. and *Phytophthora sojae*
- Evaluate IPM strategies through foliar fungicide and seed treatment efficacy tests for soybean diseases in Ohio
- Characterize population genetics of *Phytophthora sojae* and *Pythium* spp. across Ohio
- Identify the mechanisms of host resistance in soybean for *Fusarium graminearum* and *P. sojae*

Krystel, Anna, Meredith Eyre, and Jaqueline rejoicing after a day of rating for Sclerotinia stem rot



Deloris and Joel (SROP student) doing a tray assay

Jonell preparing to plant a field



Krystel and Amilcar isolating pathogens

Amilcar preparing a tray assay

Kelsey hand harvesting soybeans

Jaqueline scoring a white mold assay

Linda harvesting soybeans at Snyder

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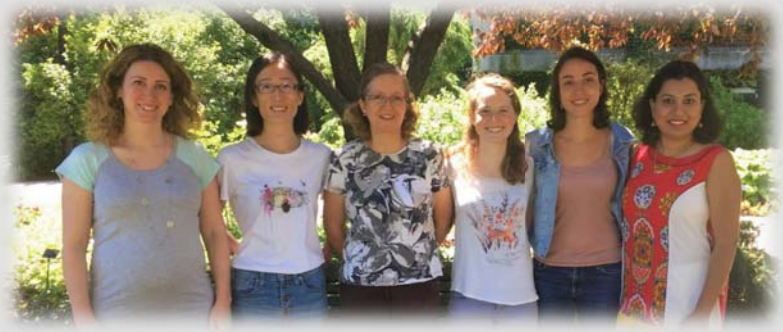
Ornamental and Turf Pathology Lab

DEPARTMENT OF PLANT PATHOLOGY

Francesca Peduto Hand



2017 Lab Members

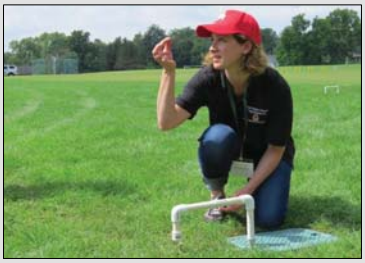
(from left to right):

Francesca Peduto Hand (*PI*),
Shan Lin (*PhD student*),
Maria Bellizzi (Lab Tech),
Dana Martin (*Master student*),
Coralie Farinas (*PhD student*),
Veena Devi Ganeshan (*Post-Doc*)

Pictured elsewhere:
Paige Thrush (*Research assistant*)

Team work inoculating Winterberry Holly

- Develop science-based plant health management strategies to address the disease problems faced by the floriculture, nursery and turf industries of Ohio
- Develop educational material to enhance knowledge of pathogens' biology and epidemiology among extension clientele
- Assess the biology, epidemiology, and management of Winterberry fruit rot disease
- Perform phylogenetic analyses of *Alternaria sp.* from Winterberry Holly
- Identify biological alternatives for the management of common diseases in greenhouse bedding plants
- Screen and characterize *Phlox* germplasm for resistance to powdery mildew
- Employ genotyping by sequencing and genome-wide association analysis of *Golovinomyces magnicellulatus*
- Perform disease management trials for fungicide and biofungicide efficacy on turf and ornamentals



Spore trapping *Magnaporthe oryzae* on turf

Team work with our undergraduate worker, Nathan Gifford

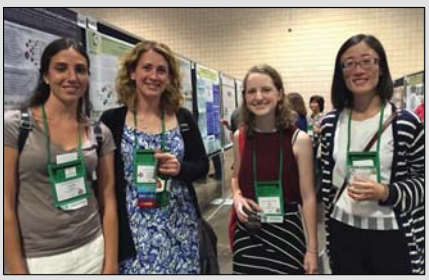
2017 APS meeting, Florida

Maria and her petunias

2016 Team: Paige, Coralie, Caterina Villari *(Post-Doc)*, Jenna Moore (*Research assistant*), Dana, Shan, and Dr. Peduto Hand

Veena and petunia

Kanuga conference, North Carolina



APS conference, Florida

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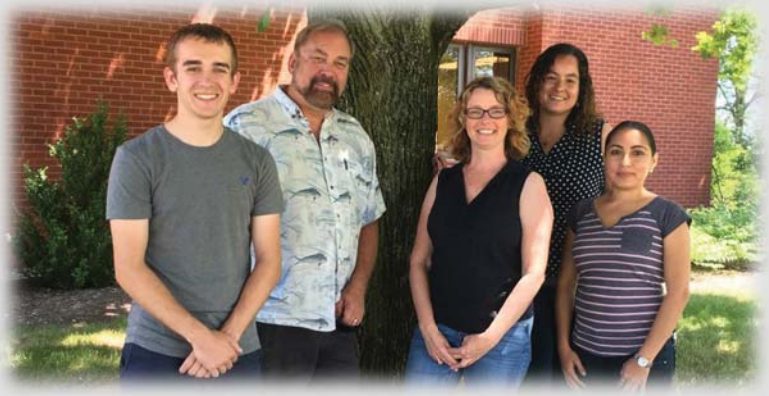
Fruit Pathology and Fresh Produce Safety Lab

DEPARTMENT OF PLANT PATHOLOGY

Melanie Ivey



2017 Lab Members

(from left to right):

Ian Weiner (*Intern*), Lee Wilson (*Research Associate*), Melanie Lewis Ivey (*P.I.*), Rachel Medina (*Research Associate*), Alejandra Jimenez Madrid (*PhD student*)

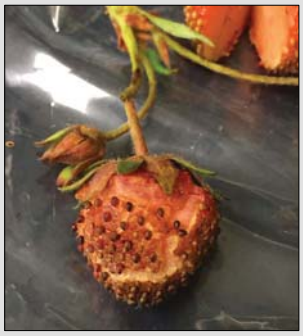
Hops with downy mildew

Spore-covered grapes

- Investigate new sprayer technologies for efficient spray applications in vineyards
- Develop fungicide spray programs for grape, apple, and blueberry diseases
- Survey new and emerging diseases in annual plasticulture strawberry production systems
- Establish water quality and sanitation guidelines for hydroponic leafy green production systems
- Develop an Antibiotic Stewardship Program for Ohio apple producers
- Determine the prevalence and distribution of antibiotic resistant *Erwinia amylovora* in Ohio apple orchards
- Characterize the prevalence of antibiotic resistant determinants in bacterial communities within orchard soil and water
- Promote disease forecasting using on-line weather-based models
- Improve grower understanding of fruit disease management and fresh produce safety
- Use social media and websites to target growers for research and extension updates
- Develop food safety programming for plain growers

Rotten apples submitted by a grower

Rachel spraying the apple orchard



Cracked strawberry

Training hop vines

Apple blooms

Apple orchard in early spring

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Cereal Pathology and Epidemiology Lab

DEPARTMENT OF PLANT PATHOLOGY

Pierce Paul

Larry Madden
Acting Dept. Chair

2017 Lab Members

(from left to right):

Karasi Mills (*PhD student*), Larry Madden (*P.I.*); Brian Hodge (*PhD student*); Johnathan Partee (*intern*); Pierce Paul (*P.I.*); Abasola Simon (*PhD student*); Wanderson Bucker Moraes (*PhD student*); Jorge David Salgado (*Research Associate II*) Camila Herrada (*intern*); Sin Joe Ng (*Research Associate I*).

Pictured in images below:
Felipe Dalla Lana (*PhD student*);

Not pictured:
Kobe Russel (*Intern*)

Amanda Williams prepares *F. graminearum* inoculum

Pierce diagnoses a growers field

- Quantitative research synthesis, and disease and toxin risk assessment and predictive modeling
- Screen and characterize wheat cultivars for resistance to diseases and mycotoxins
- Develop integrated management strategies to minimize yield and quality losses due to diseases in corn and wheat
- Quantify the relationship between Fusarium Head Blight on wheat yield characteristics
- Define Ohio's *Fusarium graminearum* population diversity
- Quantify distribution, population structure, and impacts of corn nematodes and wheat viruses in Ohio
- Identify environment factors associated with Gibberella ear rot and mycotoxins in maize
- Quantify the epidemiology of wheat blast in Bolivian field trials and growth chambers

David and Karasi in Bolivian wheat fields

Blasted spike

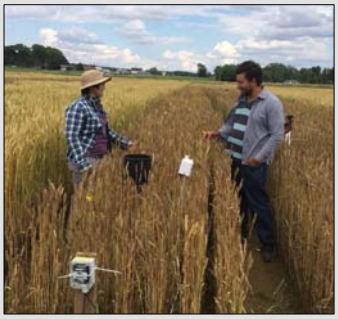
Felipe presents at the OARDC

Karasi collects harvest samples

Abasola and Joe collect FHB data at Snyder Farm

Larry, Lee, and collaborators at the 2016 APS Meeting

Felipe observes Gibberella ear rot in the field



Joe and Wanderson assess FHB in field plots

The team celebrates Pierce winning the 2016 Distinguished Junior Faculty Research award

THE OHIO STATE UNIVERSITY
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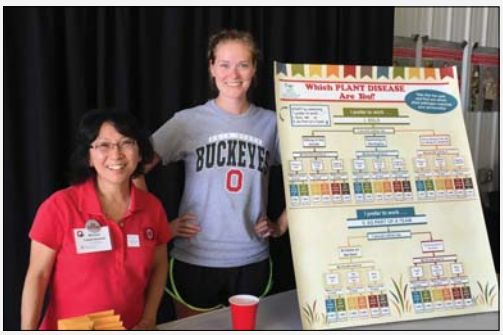
Plant Pathology Teaching and Outreach

DEPARTMENT OF PLANT PATHOLOGY

Monica Lewandowski

Plant Health and Resource Management (PHARM) hosted *Examine the Famine* event to raise awareness about plant pathology and food security. The event was recognized with the 2017 New Activity Award from the College of Food, Agricultural, and Environmental Sciences Student Council.



Education outreach at the Farm Science Review. Monica (left) and Annie Means with the APS's "Which Plant Disease Are You?" game.

We are reaching new audiences with online tools and social media.

PHARM trip with Dan Zeller to KW Zeller and Sons, Hartville, Ohio.

- Teaching
  - General education and undergraduate capstone courses
- Academic programs
  - Undergraduate and graduate program recruitment
  - Graduate coordinator for MS/PhD and Master in Plant Health Management
  - Advisor to Plant Health and Resource Management (PHARM) and Plant Pathology Graduate Students Association (PPGSA)
- Professional development
- Education Outreach
- Communications

Providing information on the Master in Plant Health Management program at the APS Annual Meeting.

Graduate student orientation

PHARM field trip to Katherine Wolfe's family farm in Louisville, Ohio (left) and Gervasi Vineyard near Canton.

Graduate student field trip to the University of Florida Citrus Research and Education Center in Lake Alfred, Florida.

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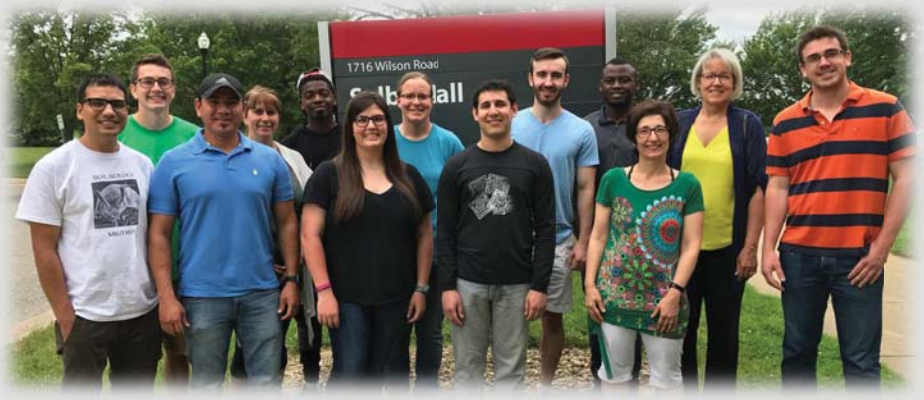
Vegetable Pathology, Diagnostics and Int'l Development

DEPARTMENT OF PLANT PATHOLOGY

Sally Miller



2017 Lab Members

(from left to right):

Ram Khadka (*PhD student*), Michael Moodispaw (*Summer intern*), Jhony Mera (*Research associate*), Angela Nanes (*Research assistant*), Pierre Paul (*Summer intern*), Margaret Moodispaw (*Summer intern*), Anna Testen (*Post Doc*), Andres Sanabria (*MS student*), Loïc Deblais (*PhD student*), Carlos Saint-Preux *(Visiting scholar),* Francesca Rotondo (*Research associate*), Sally Miller (*P.I.*), and Cláudio Vrisman (*PhD student*)

Pictured elsewhere:
Hellen Kanyagha (*PhD student*), Ferdous-e Elahi (*PhD student*), and Md Mynul Islam (*PhD student*)

Setting ASD trial in Ohio

Margaret rating tomatoes

- Provide disease management advice and training for Ohio vegetable crop production professionals
- Develop sustainable IPM strategies for organic and conventional, open field and protected culture systems worldwide
- Diagnose and characterize current and emerging vegetable diseases
- Develop detection technologies for pathogenic and beneficial microorganisms
- Assess the impact of greenhouse management factors on vegetable disease development
- Determine the effectiveness of current and new chemistries in vegetable disease management programs
- Explore anaerobic soil disinfestation (ASD) as management tool for vegetable soilborne diseases
- Discover and characterize novel molecules for management of bacterial diseases
- Elucidate plant colonization by bacterial pathogens using bioluminescence and other tools
- Explore the interactions between plant and zoonotic pathogens relating to food safety

APS meeting in Minneapolis, MN 2014

2017 Examine the Famine

Tanzania, 2014

Anna's graduation celebration 2017

Setting ASD trial at Muck Crops Research Station

Ram plating seeds after ASD trial

2014 diagnostics course, Senegal

Ferdous-e Elahi and Mynul Islam

Mafruha Afroz

Lab celebration, 2016

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Fungal Biology and Parasitism Lab

DEPARTMENT OF PLANT PATHOLOGY

Tom Mitchell

2017 Lab Members

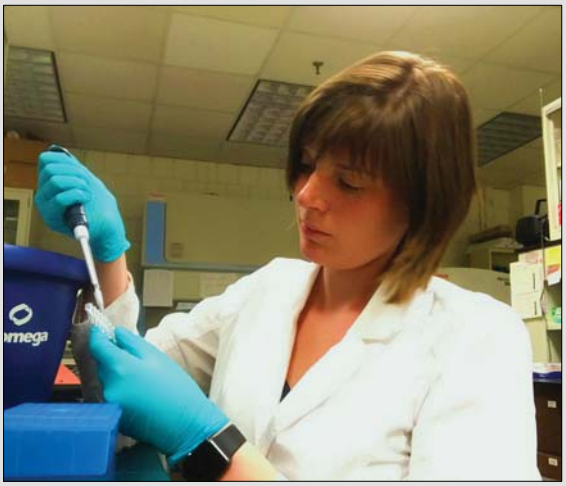
(from left to right):

Bill Rolling (*Rotating PhD student*), Dominique Tate (*PhD student*), Zach Faust (*former undergraduate researcher*), Rachel Capouya (*PhD student*), Fan Gaili (*visiting scholar*), Veena Devi Ganeshan (*Postdoctoral researcher)*, Thomas Mitchell (*P.I.*)

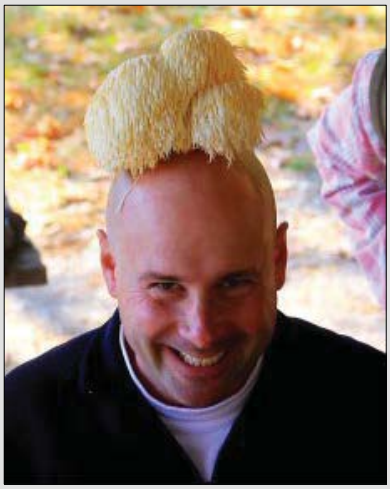
Pictured elsewhere:
Aimmie Altman (*Undergraduate)*

Dominique, Aimmie, and Rachel take a look at fungal cultures

- Characterize how *Magnaporthe oryzae* can overcome rice basal defense
- Develop durable rice blast resistance for sub-Saharan Africa through genomic analysis of host-pathogen interactions
- Identify mechanisms of avirulence-inducing metabolites in the rice blast pathogen *Magnaporthe oryzae*
- Assess impacts of fungal and bacterial microbiomes on food and industrial commodities
- Employ bioluminescence to examine the histopathology of wheat blast



Dominique adds reagents to a Polymerase Chain Reaction



Dr. Mitchell loves molding young minds… and sometimes molding his own!

Veena works in the biosafety cabinet

Aimmie always remembers to label culture plates

Dr. Mitchell catches up on the Plant Pathology department's history

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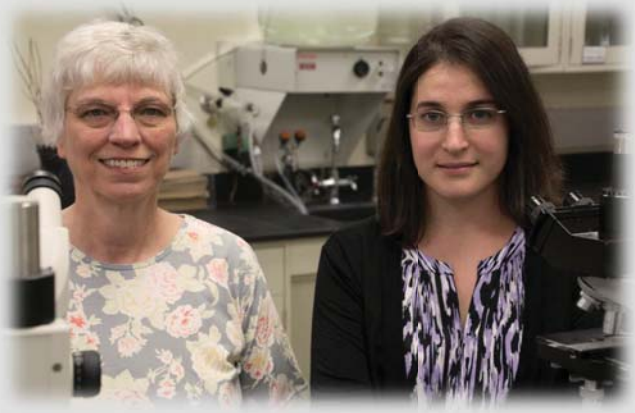
C. Wayne Ellett Plant and Pest Diagnostic Clinic

DEPARTMENT OF PLANT PATHOLOGY

OPDN
Ohio Plant Diagnostic Network



OPDN Mission Statement:

The Ohio Plant Diagnostic Network facilitates the protection of Ohio's plant-based agricultural and natural plant systems through a multi-institutional consortium engaged in the detection and diagnosis of and surveillance for plant-related problems and threats, in support of coordinated response and recovery efforts, and in the development of education and outreach programs in support of this mission.

2017 Clinic Crew

(from left to right, top to bottom):

Nancy Taylor, Colette Gabriel

Pictured elsewhere::
Joe Rimelsbaack

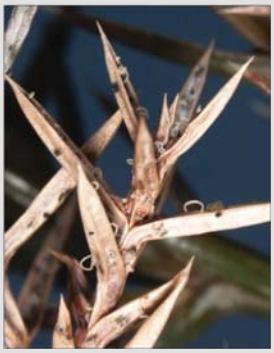
Sometimes samples are slimy!

Sometimes samples are small!

We do them all!

Joe Rimelspach examines a turf sample

Sometimes samples are big! (David McCann)



Pictures for education

Soybean Cyst Nematodes (Colette Gabriel)

Nancy Taylor answers a call

Clinic Crew 2008
L-R Bridget Francis, Linda Neeb, Nancy Taylor, Joe Rimelspach, Barbara Bloetscher

CWEPPDC

Interdisciplinary Clinic opened October 1, 1985

16,123 sample processed since July 1, 2004

First report of *Phytophthora chrysanthemi* in the United States

A partner in the National Plant Diagnostic Network

NPDN
National Plant Diagnostic Network

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Nematology Lab

DEPARTMENT OF PLANT PATHOLOGY

Terry Niblack
Acting Associate Dean of CFAES

2017 Lab Members

(Left to right, top to bottom)

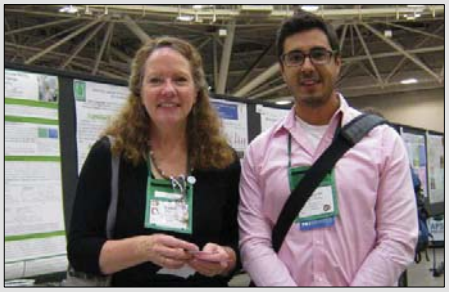
Alex Roy (*Undergrad*), John Schoenhals (*Intern*), Brin Kessinger (*Intern*), Ambria Small (*Intern*), Horacio Lopez-Nicora (*Post Doc*), Nicole Raab (*Intern*), Kyle Miller (*Intern*), and Zak Ralston (*Lab Manager*)

Pictured elsewhere:
Terry Niblack (*P.I.*), Abasola Simon (*PhD student*), Nathan Detwiler (*MPHM student*), Candace Williams (*Intern*), Ben Eggers (*Intern*)

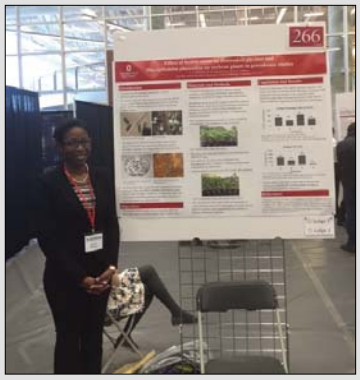
Not pictured:
Logan Rance (*Intern*),
and Jonathan Partee (*Intern*)

Kyle, Logan, Kaytee, Abasola and Zak

- Developed the *Heterodera glycines* (HG) Type test
- Contribute to the soybean cyst nematode (SCN) management guide for Mid-West growers
- Preliminary studies on the gelatinous matrix of *H. glycines*
- Evaluate the population structure of *Macrophomina phaseolina* from Ohio and South America
- Conduct bioassays for resistance screening against *H. glycines*
- Define *H. glycines* virulence profiles (HG type) from different Ohio soybean fields
- Nematode community assemblage as environmental indicators at the Ohio State University campus in Columbus
- Assess the spatial and temporal variations of plant-parasitic nematodes in Ohio corn fields



Terry Niblack and Horacio Lopez-Nicora at APS 2016



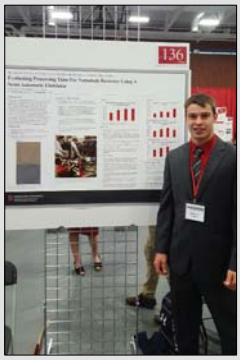
Candace at the Denman Forum 2017

Collecting soil samples for SCN evaluation

Nathan in Howlett Hall

Logan preparing Baermann Funnels

The Disease Triangle



Ben at the Denman Forum 2017

Green house presentation by Zak

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Molecular Plant Virology and Plant Resistance Lab

DEPARTMENT OF PLANT PATHOLOGY

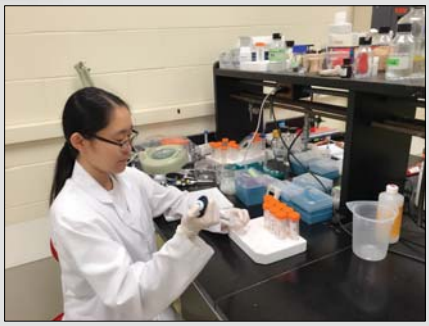
Feng Qu

2017 Lab Members
(from left to right):

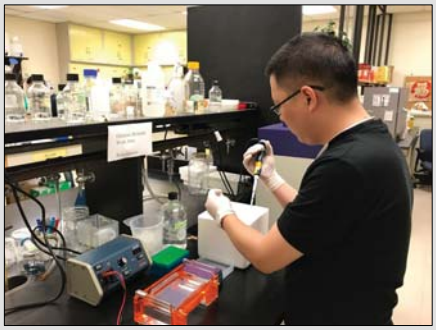
Xiaolong Zhang (Visiting Scholar)
Dr. Feng Qu (*P.I.*)
Rong Sun (*PhD student*)
Fides A. Zaulda (*PhD student*)
Junping Han (*Lab Manager*)
Shaoyan Zhang (*PhD student*)
Qin (Clare) Guo (*PhD student*)

Dr. Qu, teaching a virology class

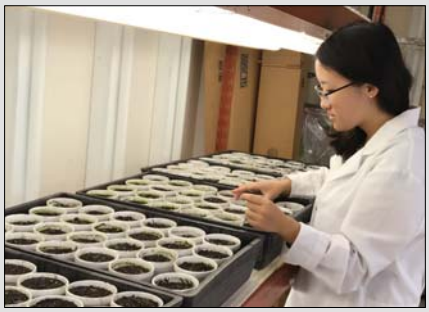
- Define the molecular mechanism of RNA silencing-based antiviral defense in plants
- Further understanding about the mechanism of resistance gene (R gene)-mediated antiviral defense in plants
- Use virus-induced gene silencing for plant gene discovery and characterization
- Employ virus vectors to alter expression of non-plant gene products in plants
- Identify and characterize novel plant viruses
- Map regions responsible for inducing superinfection exclusion in Turnip crinkle virus (TCV)-encoded p28 protein
- Analyze function of p88, a polymerase of TCV, using a replication complementary system
- Characterize mechanisms of the replication of positive-sense RNA virus using TCV as a model
- Use plant virus vectors for protein expression and CRISPR/Cas9-guided RNA delivery
- Perform in-depth characterization of the aphid resistant soybean gene – Rag5



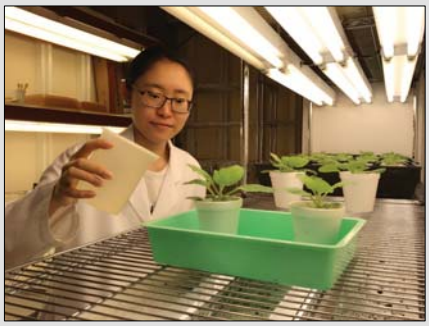
Rong, preparing samples



Xiaolong, preparing for electrophoresis



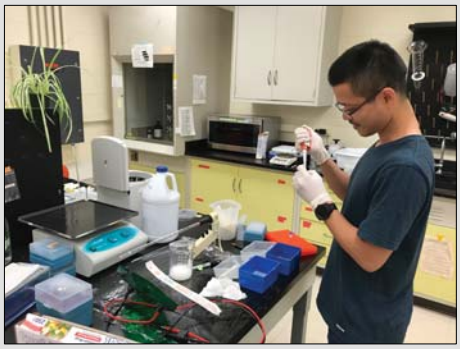
Qin (Clare), checking the seedlings



Rong, watering the tobacco plants.

Fides, gathering the seeds

Junping, observing the inoculated soybean plants



Shaoyan, conducting Western Blot

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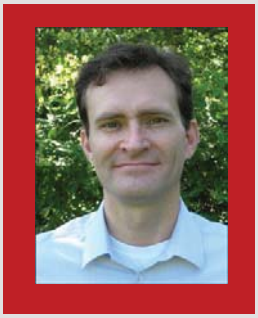
Fungal Evolutionary Genetics Lab

DEPARTMENT OF PLANT PATHOLOGY



Jason Slot

2017 Lab Members

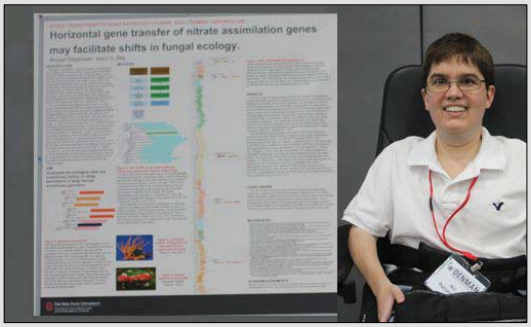
(from left to right):

Emile Gluck-Thaler (*Ph.D student*),
Jason Slot (*PI*),
Vinod Vijayakumar (*Postdoc*)

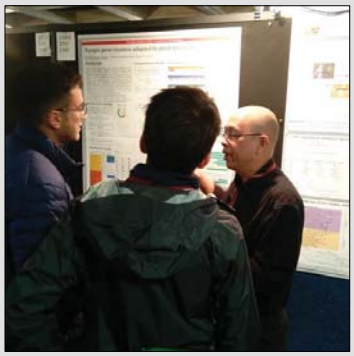
Pictured elsewhere:
Nic Petrykowski (*undegrad intern*)
Veronica Sondervan (*summer intern*)

Jason, Neil, Emile and Veronica hanging in the lab

- Horizontal gene transfer in fungi
- Multi-omics of foliar phytobiomes
- Comparative genomics of fungal plant pathogens
- Metabolic gene cluster prediction and characterization
- Evolution of fungal resistance to plant secondary metabolites
- Fungal transportome diversity and function
- Mycovirus diversity



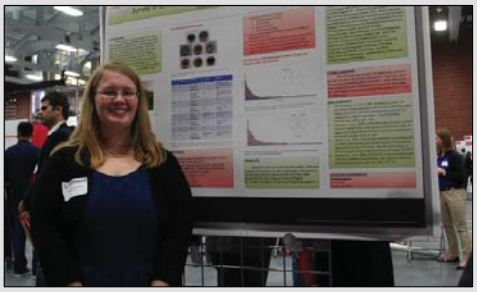
Nic presents his poster at the Denman Research Forum (2017)



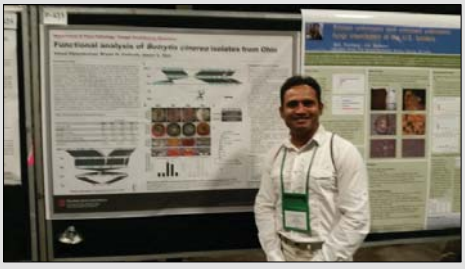
Emile presenting his poster at the 29th Fungal Genetics Conference (2017)

A bountiful fungal foray (2016)

Former undergrad intern Neil shows off his latest find



Former undergrad intern Christina Tomashuk presenting her poster at the Denman Research Forum (2015)



Vinod presents his poster at the Annual APS meeting (2016)

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Root Biotic Interactions Lab

DEPARTMENT OF PLANT PATHOLOGY

Chris Taylor

2017 Lab Members
(from left to right):

Wenshuang Xie (Post-doc) Leslie Taylor (Research associate), Therese Miller (Research assistant), Christopher Taylor (*PI*), Rebecca Kimmefield (PhD student), Timothy Frey (PhD student), Madeline Horvat (Intern), Cecilia Chagas de Freitas (PhD student), Brenden Tully (Intern)

Not pictured:
Gina Pengue (Post-doc)

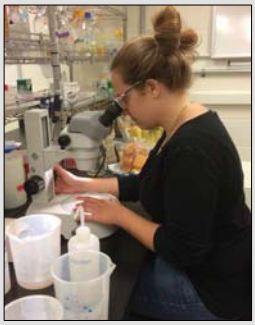
Rebecca and Cecilia doing seeds inoculation with *Pseudomonas*

- Examination of symbiotic, commensal, parasitic and pathogenic interactions of soil microorganisms and plants.
- Functional gene analysis of root-expressed genes induced during nematode, fungal, and oomycete pathogenesis.
- Characterizing soybean cyst nematode populations and identifying the genetic determinates involved in virulence.
- Examining the roles of root exudates in bacterial colonization and nematode parasitism.
- Assessing the role of cytokinins and auxin in *Agrobacterium* pathogenesis.
- Identifying and characterizing soil-borne bacteria for their ability to control plant-parasitic nematodes and other plant pathogens.
- Determining the modes of action for biocontrol bacteria.
- Developing biocontrol products with an OSU-based startup company.

Therese and Madeline inoculating soybean with nematode s

Tim working with nematodes

Leslie working with Arabidopsis



Rebecca counting nematodes

Shuang taking care of Arabidopsis

Brenden pouring media

Some **outstanding** members of the Taylor Lab out standing in the microplot field.

Cecilia working with Arabidopsis

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Turfgrass Pathology

DEPARTMENT OF PLANT PATHOLOGY

Todd Hicks and Joseph Rimelspach present field work to industry representatives and turf writers about a new fungicide.

Joe Rimelspach (left) and Todd Hicks, Ohio Turfgrass Foundation Professionals of the Year (2013).

Joe preparing the Turfgrass Pathology display for the Farm Science Review.

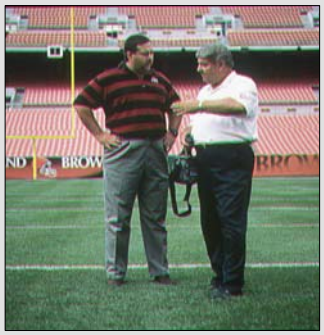
Turfgrass Pathology

The OSU Turfgrass Pathology Program is a nationally recognized source of information on turfgrass disease management and research on turf health management.

Joe Rimelspach, recipient of the Jack Kidwell Personal Excellence Award from the Central Ohio Golf Course Superintendants Association, 2016.

Todd Hicks setting up field research at an off-site golf course.

Turf Tips videos have become a popular way to disseminate timely information during the growing season.



Todd Hicks discussing turfgrass management with the Cleveland Browns.

Joe Rimelspach preparing an off-site golf course study.

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Plant Disease Resistance and Functional Genomics Lab

DEPARTMENT OF PLANT PATHOLOGY

Guo-Liang Wang

2017 Lab Members
(from left to right):

Chengfeng Long (*Visiting scholar*), Jiyang Wang (*Visiting scholar*), Pavinee Suttiviriya (*PhD student*), Da-Young Lee (*PhD student*), Maria Bellizzi *(Lab manager*), Ya Li (*Visiting Scholar*), Jiangbo Fan (*Post-doc*), Pengfei Bai (*PhD student*), Guo-Liang Wang (*P.I.*)

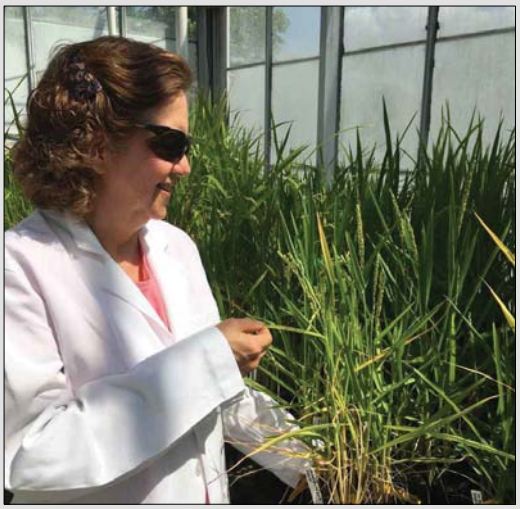
Pengfei decoding rice innate immunity

- Isolated four major resistance genes against *Magnaporthe oryzae*
- Identified many QTLs against a diverse collection of *Magnaporthe oryzae* strains using GWAS
- Characterized four E3 ligase genes in rice immunity and cell death
- Identified a new receptor-like kinase and its partners that play important roles in PAMP-triggered immunity
- Identified 25 cultivars that are highly resistant to African blast populations for rice breeding

Pavinee at Spring 2016 Commencement

Da-Young harvesting rice from African cultivars

Jiyang checking cell death phenotypes in rice RNAi lines



Maria screening phenotypes of transgenic rice plants

Jiangbo observing the results of a rice blast pathogenicity test

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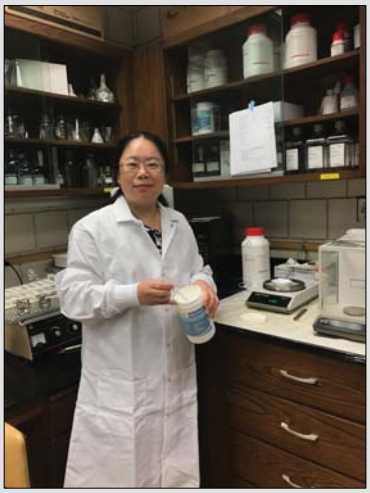
Biochemistry of Plant Pathogenesis and Immunity Lab

DEPARTMENT OF PLANT PATHOLOGY

Ye Xia

2017 Lab Members
(from left to right):

Ye Xia (*P.I.*),
Amna Saeed (*exchange PhD student*),
Jiangbo Fan (*Post Doc*),
Zhenzhen Zhao((*PhD student)*

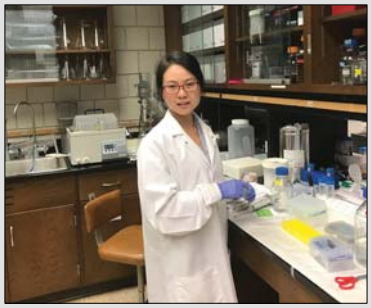


Ye is preparing medium in lab

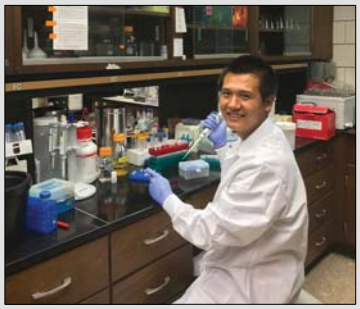
- Characterize mobile signals and regulation of systemic acquired resistance
- Assess the role of cuticle in plant systemic acquired resistance
- Quantify the effects of different agricultural practices on plant associated endophytic microbiome
- Examine plant surface (cell wall and cuticle) mediated plant immunity against bacterial and fungal pathogens
- Investigate fatty acid and lipid signaling in plant defense
- Improve plant immunity and yield by beneficial microbes from phytobiome
- Sequence, analyze, and functionally characterize beneficial microbes
- Identify small molecules to target plant cell wall biosynthesis and signaling

Hafiz and Ye are collecting soil samples in the field

Jiangbo is doing experiment on Arabidopsis plants in green house

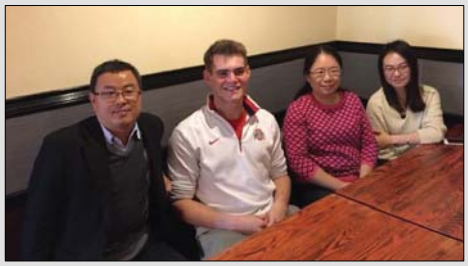


Zhzenzhen is doing PCR in lab



Jiangbo is extracting plasmid in lab

Amna is running DNA gel



Dong, Jack, Ye, and Zhenzhen are having lunch in restaurant for celebrating Christmas

Zhenzhen and Amna are doing experiment on tomatoes in green house

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Corn Soybean Wheat Quality Research Unit

USDA Agricultural Research Service

Peg Redinbaugh

2017 Lab Members

(from left to right, top to bottom):

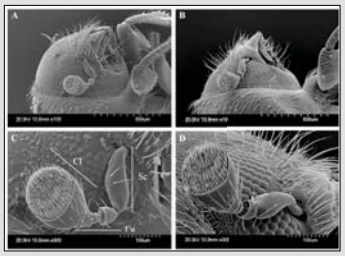
Mark Jones (Agronomist) and Jane Todd (Entomology technician), Pauline Bernardo (Post Doc), Peg Redinbaugh (P.I.), Kristen Willie, and Kelly Barriball (lab technicians)

Lucy Stewart and Deogracious Massawe sampling maize with Kilamangaro in the background

- Identified maize chlorotic mottle virus (MCMV) and sugarcane mosaic virus as key pathogens in maize lethal necrosis in East Africa
- Identified genes for resistance to MCMV in maize inbred lines
- Explore the epidemiology and control of maize lethal necrosis globally
- Develop protocols to identify maize lines with resistance to virus infection
- Elucidate the genetics of virus resistance in maize
- Determine the role of gut yeast species in damage caused by brown marmorated stink bug, and develop resistant soybean cultivars
- Characterize feeding behaviors and genome responses of insect vectors on virus infected plants

Leona Horst from USDA Application Technology Research Unit evaluating impatiens in a greenhouse study in Selby Hall

Mark Jones evaluating maize



Add caption here

- Identified johnsongrass mosaic virus and a polerovirus as pathogens involved in maize lethal necrosis in East Africa
- Characterized proteins encoded by maize chlorotic dwarf virus, including identification of a suppressor of RNAi
- Determined Maize chlorotic dwarf virus interactions with its plant host
- Characterize viruses and virus populations in plants using next generation sequencing
- Clarify the roles of viruses and virus populations in development of maize lethal necrosis
- Improve virus-based vectors for gene expression and silencing in maize
- Understand the genomes and transcriptomes of insect vectors

USDA CSWQRU Team, circa 2014

Peg Redinbaugh and former student, Victoria Bulegeya, in Tanzania

ATRU research at the OARDC

Lucy collecting virus infected rice in Vietnam

2017 Lab Members

(from left to right):

Kristen Willie(lab technician), Lucy Stewart (P.I.), Brian Hodge (PhD student), Dee Marty(lab technician), Jody Livesay, and Katie Lyden(Summer Interns)

Not pictured:
Deogracious Massawe (PhD student)

Lucy Stewart