**Pei-ling** yu

Postdoctoral Research Associate

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**EDUCATION**

**Ph.D. in Plant Pathology** 2021

University of Florida FL

Advisor: Dr. Jeffrey A. Rollins

**M.S. in Plant Pathology** 2012

National Chung Hsing University Taiwan

Advisor: Dr. Miin-Huey Lee

**B.S. in Plant Pathology** 2010

National Chung Hsing University Taiwan

Advisor: Dr. Miin-Huey Lee

**PROFESSIONAL WORK EXPERIENCE**

**Postdoctoral Research Associate** 2021 – present

Department of Plant Pathology, University of Florida FL

* Identified *Fusarium circinatum* pathogenesis genes associated with pitch canker on slash pine.
* Evaluated disease symptoms for the selection of pitch canker tolerant slash pine clones.
* Created draft genomes of loblolly pine with different assemblers to support an academia-industry collaboration.
* Developed research plans and a successful grant proposal aiming at diagnosing southern pine needle diseases (FFAR’s ROAR program).
* Designed wet-lab protocols for DNA sequencing and bioinformatic pipelines of sequence-based pathogen identification.
* Collaborated with UF’s Space Plants Lab to develop an automation system for space-based plant nucleic acid extraction.
* Mentored graduate students in whole genome sequencing, assembly, annotation, and general NGS data analysis.

**Graduate Research Assistant** 2016 – 2021

Department of Plant Pathology, University of Florida FL

* Designed and executed experiments to study the host-fungal pathogen interactions in *Arabidopsis thaliana*–*Sclerotinia sclerotiorum*pathosystem.
* Performed comparative transcriptome analysis to elucidate the early phase of *Sclerotinia* infection.
* Conducted CRISPR-Cas9 gene editing to study the regulation of the cAMP/PKA signaling pathway in *S. sclerotiorum.*
* Supervised a laboratory technician to perform molecular mutation screening.

**Project Research Assistant** 2012 – 2016

Department of Plant Pathology, National Chung Hsing University Taiwan

* Investigated signaling pathways regarding osmotic and oxidative stress, fungicide sensitivity, and pathogenesis in *Alternaria alternata* causing Alternaria brown spot of citrus and peach brown rot pathogen *Monilinia fructicola*.
* Monitored undergraduate and graduate students.

**Internship** 2009 – 2010

Department of Plant Pathology, National Chung Hsing University Taiwan

* Assessed the biocontrol potential of *Monilinia fructicola* by evaluating the mycotoxin sensitivity of plant bacterial and post-harvest fungal pathogens to secondary metabolites produced by peach brown rot pathogen.

**PEER-REVIEWED ARTICLES**

1. **Yu P-L**, Fulton JC, Hudson OH, Huguet-Tapia JC, Brawner JT. Next-generation fungal identification using target enrichment and Nanopore sequencing. BMC Genomics. 2023;24:581. <https://doi.org/10.1186/s12864-023-09691-w>
2. Haveman NJ, Schuerger AC, **Yu P-L**, Brown M, Doebler R, Paul A-L, et al. Advancing the automation of plant nucleic acid extraction for rapid diagnosis of plant diseases in space. Front Plant Sci. 2023;14. <https://doi.org/10.3389/fpls.2023.1194753>
3. Fulton JC, **Yu P-L**, Smith KE, Huguet-Tapia JC, Hudson O, Meeks A, et al. Comparative genomics of *Fusarium circinatum* isolates used to screen southern pines for pitch canker resistance. Mol Plant-Microbe Interactions. 2022;35:477–87. <https://doi.org/10.1094/MPMI-10-21-0247-R>
4. **Yu P-L**, Fulton JC, Carmona SL, Burbano-David D, Barrero LS, Huguet-Tapia JC, et al. Draft genome sequence and de novo assembly of a *Fusarium oxysporum* f. sp. *lycopersici* isolate collected from the Andean region in Colombia. Microbiol Resour Announc. 2022;11:e00980-21. <https://doi.org/10.1128/mra.00980-21>
5. **Yu P-L**, Rollins JA. The cAMP-dependent protein kinase A pathway perturbs autophagy and plays important roles in development and virulence of *Sclerotinia sclerotiorum*. Fungal Biol. 2022;126:20–34. <https://doi.org/10.1016/j.funbio.2021.09.004>
6. Li J, Zhang Y, Zhang Y, **Yu P-L**, Pan H, Rollins JA. Introduction of large sequence inserts by CRISPR-Cas9 to create pathogenicity mutants in the multinucleate filamentous pathogen *Sclerotinia sclerotiorum*. mBio. 2018;9:10.1128/mbio.00567-18. <https://doi.org/10.1128/mbio.00567-18>
7. **Yu P-L**, Wang C-L, Chen P-Y, Lee M-H. YAP1 homologue-mediated redox sensing is crucial for a successful infection by *Monilinia fructicola*. Mol Plant Pathol. 2017;18:783–97. <https://doi.org/10.1111/mpp.12438>
8. **Yu P-L**, Chen L-H, Chung K-R. How the pathogenic fungus *Alternaria alternata* copes with stress via the response regulators SSK1 and SHO1. PLOS ONE. 2016;11:e0149153. <https://doi.org/10.1371/journal.pone.0149153>
9. Chou C-M, Yu F-Y, **Yu P-L**, Ho J-F, Bostock RM, Chung K-R, et al. Expression of five endopolygalacturonase genes and demonstration that MfPG1 overexpression diminishes virulence in the brown rot pathogen *Monilinia fructicola*. PLOS ONE. 2015;10:e0132012. <https://doi.org/10.1371/journal.pone.0132012>
10. Chen L-H, Tsai H-C, **Yu P-L**, Chung K-R. A major facilitator superfamily transporter-mediated resistance to oxidative stress and fungicides requires Yap1, Skn7, and MAP kinases in the citrus fungal pathogen *Alternaria alternata*. PLOS ONE. 2017;12:e0169103. <https://doi.org/10.1371/journal.pone.0169103>
11. Lin H-C, **Yu P-L**, Chen L-H, Tsai H-C, Chung K-R. A major facilitator superfamily transporter regulated by the stress-responsive transcription factor Yap1 is required for resistance to fungicides, xenobiotics, and oxidants and full virulence in *Alternaria alternata*. Front Microbiol. 2018;9. <https://doi.org/10.3389/fmicb.2018.02229>
12. Yang SL, **Yu P-L**, Chung K-R. The glutathione peroxidase-mediated reactive oxygen species resistance, fungicide sensitivity and cell wall construction in the citrus fungal pathogen *Alternaria alternata*. Environ Microbiol. 2016;18:923–35. <https://doi.org/10.1111/1462-2920.13125>
13. Chiu C-M, You B-J, Chou C-M, **Yu P-L**, Yu F-Y, Pan S-M, et al. Redox status-mediated regulation of gene expression and virulence in the brown rot pathogen *Monilinia fructicola*. Plant Pathol. 2013;62:809–19. <https://doi.org/10.1111/ppa.12006>

**UNDER REVIEW MANUSCRIPT**

1. **Yu P-L**, Fulton JC, Hudson O, Huguet-Tapia JC, and Brawner JT. Next-generation fungal identification using target enrichment and nanopore sequencing.

**GRANTS RECEIVED (TOTAL~ $253,000)**

* 2023-2024. Co-PI. A Universal Pathogen Identification Tool (UPIT) for CETC IL partners. United States Agency for International Development. **$105,000**.
* 2023-2024. Co-PI. Development of a universal diagnostic tool for needle diseases of southern pines using Nanopore multi-gene target-capture sequencing. Foundation for Food and Agriculture Research. **$148,236.63** (matching funders: UGA, UF, SPHRC).
* Co-PI. Investigating the impacts of low-dose chronic simulated cosmic radiation on plant-microbial interactions. NASA. *Invited to submit a step-2 proposal*.

**TEACHING EXPERIENCE**

**Guest lecture (Undergraduate and graduate level)** 2020

Department of Plant Pathology, University of Florida FL

Course: Fungal Plant Pathogens (20 students)

* Lecture 12: Fungal Pathogens in Row Crops vs. Perennial Crops

**Teaching Assistant (Undergraduate and graduate level)** 2017

Department of Plant Pathology, University of Florida FL

Course: Fungal Plant Pathogens (20 students)

* Instructed students on sampling and examination of field samples.
* Assisted students to complete lab assignments.

**Teaching Assistant (Undergraduate level)** 2010

Department of Plant Pathology, National Chung Hsing University Taiwan

Course: Experiments in Physiological and Molecular Plant Pathology (15-20 students)

* Designed and prepared materials for experiments.
* Evaluated students’ oral presentations.

**Universal Fungal Identification Tool Workshop** 2023

UF/IFAS Plant Diagnostic Center FL

* Class size: 20 participants (NPDN members and academic personnel)
* Roles: Coordinator and instructor.
* Website: <https://plantpath.ifas.ufl.edu/extension/plant-diagnostic-center/events/ufit-workshop/>

**Workshop: Oxford Nanopore Sequencing Applications for Plant Pathologists** 2022

Plant Health 2022 PA

* Class size: 30 (Academic and industrial personnel)
* Roles: Coordinator and instructor.
* Website: <https://ply2022.github.io/NanoSeqWorkshop/>

**TEACHING TRAINING WORKSHOPS**

**Make It Global: Curriculum Internationalization** 2023

Center for Teaching Excellence, University of Florida FL

**Creating Global Classrooms through Virtual Exchange** 2023

Center for Teaching Excellence, University of Florida FL

**Cultural Differences in Verbal and Non-Verbal Communication** 2023

Center for Teaching Excellence, University of Florida FL

**HONORS AND AWARDS**

**APS Foundation Student Travel Awards** 2020

American Phytopathological Society Foundation MN

**Government Scholarship to Study Abroad** 2018 – 2020

Ministry of Education Taiwan

* Funded research: Identifying oxalic acid-independent compatibility factors from *Sclerotinia sclerotiorum* during infection of *Brassica napus.*

**Travel Award** 2018

Plant Pathology Graduate Student Organization, University of Florida FL

**IFAS/CALS Graduate Student Travel Grant** 2018

IFAS Shared Service Center, University of Florida FL

**ACADEMIC PRESENTATIONS**

**Oral Conference Presentation**

1. **Yu P-L**, Zhang Y, and Rollins JA. 2021. Comparative transcriptome analysis uncovers a two-phase infection process of *Sclerotinia sclerotiorum* on *Arabidopsis thaliana*. BotrySclero2021 webinar.
2. **Yu P-L** and Rollins JA. 2020. The regulation of sclerotium initiation and virulence in *Sclerotinia sclerotiorum* by cyclic AMP–protein kinase A signaling pathway. APS annual meeting: Plant Health 2020 online.

**Poster Conference Presentation**

1. **Yu P-L**, Fulton JC, Hudson OH, Huguet-Tapia J, and Brawner JT. 2023. Universal fungal identification tool utilizing targeted nanopore sequencing with probe capturing. APS annual meeting: Plant Health 2023. Denver, CO, USA.
2. **Yu P-L**, Zhang Y, and Rollins JA. 2019. Testing a two-phase infection model in *Sclerotinia sclerotiorum* through comparative transcriptome profiling of wild type and oxalic acid – minus mutants. 30th Fungal Genetics Conference, Pacific Grove, CA, USA.
3. **Yu P-L**, Zhang Y, and Rollins JA. 2018. Identifying oxalic acid independent compatibility factors from *Sclerotinia sclerotiorum*. International Congress of Plant Pathology (ICPP) 2018: Plant Health in A Global Economy, Boston, MA, USA.
4. **Yu P-L**, Chen P-Y and Lee M-H. 2012. Functional analysis of an oxidative stress-regulated gene MfAP1 from *Monilinia fructicola*. XV International Congress of Molecular Plant-Microbe Interactions, Kyoto, Japan.

**MENTORING**

**University of Florida**

Andrea Suazo – Master’s student 2022 – present

Jingya Yang – Ph.D. student 2023 – present

**National Chung Hsing University**

Chang-Xian Chen ­– Master’s student 2015 – 2016

Pin-Hua Wang ­– Master’s student 2015 – 2016

Irene Hsiang – Master’s student 2015 – 2016

Chiao-Yin Yang – Undergraduate Intern 2012

Ying-Chieh Pan – Undergraduate Intern 2012

**SERVICE**

**Committee Member for Diversity, Equity, & Inclusion** 2022-present

American Phytopathological Society

**Peer Reviewer**

Plant disease (3) 2022

Phytopathology (3) 2020

**Student Oral Presentation Competition Judge** 2021

Florida Phytopathology Society meeting FL

**Professional Development Committee Member** 2021

University of Florida Postdoctoral Association (UFPDA) FL

**Co-chair of Social Committee** 2020

Plant Pathology Graduate Student Organization, University of Florida FL

**Graduate Student Committee Member** 2019 – 2021

American Phytopathological Society FL

**UF CALS TailGATOR Event Volunteer** 2019

College of Agricultural and Life Sciences, University of Florida FL

**CATALySES Program** **Volunteer** 2019

Center for Precollegiate Education and Training, University of Florida FL

* Assisted high school life science teachers with microscope examination of samples.

**PROFESSIONAL AFFILIATIONS**

* American Association for the Advancement of Science (AAAS) 2021 – present
* American Phytopathological Society (APS) 2018 – present