

Lucky Mehra

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PROFESSIONAL PROFILE

I am a plant disease epidemiologist with a track record in collaborative research and teaching in plant pathology and statistics. I have experience in experiment design, execution, and data analyses of multi-year multi-site agricultural experiments. I have 10-year experience in quantitative analysis of plant diseases, insects, and weeds using regression, general linear model, linear mixed models, and generalized linear mixed models.

SKILLS

Applications: R, R Studio, Tidyverse, Shiny, ArcMap, SAS, JMP

Programming: R, SAS, Python

Statistics and Epidemiology: Generalized linear mixed models, Regression, Machine learning, Disease prediction, Risk-assessment, Experiment design

CERTIFICATIONS*

1. PhD minor in Statistics
2. ACUE (Association of College and University Educators) certified instructor
3. SAS Certified Predictive Modeler Using SAS Enterprise Miner 13
4. SAS Certified Statistical Business Analyst Using SAS 9- Regression and Modeling
5. SAS Certified Advanced Programmer for SAS 9

WORK EXPERIENCE

KANSAS STATE UNIVERSITY, Manhattan, Kansas

Teaching Assistant Professor and Instructor (January 2018 - July 2020)

Taught Principles of Plant Pathology (Spring semester). Taught Introduction to R programming for Biologists (Summer semester). Used RMarkdown and Shiny to create lecture notes and live plotting demos in the class. Research and Extension Experiences for Undergraduates coordinator.

NORTH CAROLINA STATE UNIVERSITY AND UNITED STATES DEPARTMENT OF AGRICULTURE, Fort Pierce, Florida

Postdoctoral Research Scholar (July 2016 - December 2017)

Modeled wind driven splash-dispersal of angular leaf spot of strawberry. Evaluated the historical decline of citrus canopy after Huanglongbing introduction, using high resolution aerial imagery. Used Python scripts and ArcMap to automate image analysis.

NORTH CAROLINA STATE UNIVERSITY, Raleigh, North Carolina

Laboratory Assistant (February 2016 - June 2016)

Modeled the spatial and temporal spread of cucurbit downy mildew in the United States, using the ArcMAP, SAS, and R. Analyzed virulence data of wheat powdery mildew isolates collected from multiple states in eastern United States. Utilized SAS programming skills to write SAS Macros for handling the large dataset. Conducted Analysis of Molecular Variance using statistical packages in R.

NORTH CAROLINA STATE UNIVERSITY, Raleigh, North Carolina

Graduate Research Assistant (January 2011 - December 2015)

Conducted field experiments at several field locations across the state during 2012, 2013, and 2014. Applied multiple regression, logistic regression, and machine learning (classification and regression trees, neural networks, and random forest) approaches to develop pre-planting risk assessment models. Analyzed data from multi-location and multi-year experiments using PROC REG, PROC NLIN, PROC MIXED, and PROC GLIMMIX in SAS 9.3.

BAYER CROPSCIENCE, Morrisville, North Carolina

Summer Intern (May 2014 - August 2014)

Assisted in screening of a population of microbial strains for antifungal activity, optimized bioassays, and wrote computational code in R to analyze data.

THE UNIVERSITY OF GEORGIA, Athens, Georgia

Graduate Research Assistant (January 2009 - December 2010)

Compared conventional and crisp-textured southern highbush genotypes after hand- and machine-harvest in relation to microbial contamination on fruit at harvest and subsequent postharvest decay. Assessed the impact of postharvest biofumigation on sensory qualities and antioxidant levels of treated fruit. These experiments were conducted in split-plot design and were analyzed using PROC GLIMMIX in SAS 9.2.

EDUCATION

NORTH CAROLINA STATE UNIVERSITY *PhD*, Plant Pathology with minor in Statistics (2015)

Advisors- Drs. Peter Ojiambo and Christina Cowger

THE UNIVERSITY OF GEORGIA *Master of Science*, Plant Pathology (2010)

Advisor- Dr. Harald Scherm

PUNJAB AGRICULTURAL UNIVERSITY *BSc Agriculture (Honors)*, Plant Protection (2008)

SELECTED PUBLICATIONS*

1. Fulmer and Mehra et al (2019). Relating Peanut Rx Risk Factors to Epidemics of Early and Late Leaf Spot of Peanut. *Plant Disease*. [Link](#)
2. Cowger and Mehra et al (2017). Virulence differences in *Blumeria graminis* f. sp. *tritici* from the central and eastern United States. *Phytopathology*. [Link](#)
3. Ojiambo, Gent, and Mehra et al (2017). Focus expansion and stability of the spread parameter estimate of the power law model for dispersal gradients. *PeerJ*. [Link](#)
4. A model for predicting onset of *Stagonospora nodorum* blotch in winter wheat based on pre-planting and weather factors. *Phytopathology*. [Link](#)
5. Predicting pre-planting risk of *Stagonospora nodorum* blotch in winter wheat using machine learning models. *Frontiers in Plant Science*. [Link](#)

TEACHING EXPERIENCE*

1. Lead instructor of PLPTH 500 (Principles of Plant Pathology) in the Department of Plant Pathology, KSU. (2018 – 2020)
2. Taught Introduction to R programming for Biologists (1 credit) in Summer 2020 to an audience of 38 graduate students, postdocs, and faculty.
3. Taught ‘Introduction to R’ workshops 3 times in 2019 to a combined audience of 58 at Kansas State University
4. Co-taught ‘Introduction to R’ workshop at University of Nebraska, Lincoln in 2019.

AWARDS*

1. Travel Award for International Symposium on Septoria Diseases of Cereals (2016)
2. Plant Pathology Society of North Carolina Student Travel Award (2015)
3. Zahir Eyal Student Travel Award, APS Foundation (2015)
4. Don E. Mathre Student Travel Award, APS Foundation (2013)

*The complete list is available upon request.