Lucky K. Mehra

Department of Plant Pathology
1712 Claflin Rd, 4734 Throckmorton, Manhattan, KS
Office: 785-532-1341, Cell: 706-870-9222
luckymehra@ksu.edu

Education

- **Doctor of Philosophy in Plant Pathology**   **December 2015**
  Minor- Statistics
  North Carolina State University, Raleigh, North Carolina
- **Master of Science in Plant Pathology**   **December 2010**
  University of Georgia, Athens, Georgia
- **Bachelor of Science in Agriculture (Honors in Plant Protection)**   **June 2008**
  Punjab Agricultural University, Punjab, India

Awards and Academic Achievements

- Travel Award for International Symposium on Septoria Diseases of Cereals (2016)
- Plant Pathology Society of North Carolina Student Travel Award (2015)
- Zahir Eyal Student Travel Award, APS Foundation (2015)
- Don E. Mathre Student Travel Award, APS Foundation (2013)
- William J. Moller and Roger C. Pearson Student Travel Award, APS Foundation (2010)
- Dr. H. S. Pruthi Memorial Scholarship for highest Credit Point Average in Plant Protection Group at Punjab Agricultural University for 2007-2008
- University Merit Scholarship at Punjab Agricultural University for 2005 and 2006

Certifications and Skills

- SAS Certified Predictive Modeler Using SAS Enterprise Miner 13
- SAS Certified Statistical Business Analyst Using SAS 9: Regression and Modeling
- SAS Certified Advanced Programmer for SAS 9
- SAS Certified Base Programmer for SAS 9
- R/RStudio and 'shiny' package
- Experiment design and data analysis
- Other relevant softwares: JMP, ArcGIS and python, SigmaPlot, Sample (a simulation sampling software)

Work Experience

- Instructor of Plant Pathology (January, 2017 – present), Department of Plant Pathology, Kansas State University:

- <u>Postdoctoral Research Scholar (July, 2016 – December 2017):</u> Current projects, under the guidance of Dr. Tim Gottwald, include
    1. Modeling wind driven splash-dispersal of angular leaf spot of strawberry.

2. Modeling three-dimensional spatial structure of citrus black spot within tree canopy using electronic digitizer.
3. Evaluating the historical decline of citrus canopy after Huanglongbing introduction, using high resolution aerial imagery.

- Laboratory Assistant (February, 2016 – June, 2016): Under the supervision of Drs. Peter Ojiambo and Christina Cowger
    1. Modeled the spatial and temporal spread of cucurbit downy mildew in the United States, using the ArcMAP, SAS, and R.
    2. Analyzed virulence data of wheat powdery mildew isolates collected from multiple states in eastern United States.
    3. Utilized SAS programming skills to write SAS Macros for handling the large dataset.
    4. Conducted Analysis of Molecular Variance using statistical packages in R.

- Ph.D. Project (2011 – 2015): Risk assessment and prediction of Stagonospora nodorum blotch in winter wheat. Advisors: Drs. Peter Ojiambo and Christina Cowger
    1. Conducted field experiments at several field locations across the state during 2012, 2013, and 2014.
    2. Plated wheat kernels on selective medium to determine percent colonization by *Parastagonospora nodorum.*
    3. 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.
    4. Analyzed data from multi-location and multi-year experiments using PROC REG, PROC NLIN, PROC MIXED, and PROC GLIMMIX in SAS 9.3.

- Summer Intern at Bayer CropScience (May, 2014 – August, 2014):
    1. Assisted in screening of a population of microbial strains for antifungal activity, optimized bioassays, and wrote computational codes to analyze data.
    2. Maintained fungal cultures of obligate and non-obligate fungi.

- M.S. Project (2009 – 2010): Fungal infection and postharvest quality of blueberry fruit in relation to berry flesh type, harvest method, and postharvest biofumigation. Advisor: Dr. Harald Scherm
    1. 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.
    2. Identified fungal organisms associated with postharvest decay using morphological characteristics and by DNA sequencing using ITS region primers.
    3. Evaluated the effect of selected essential oils as postharvest biofumigants in refrigerated holding conditions to control postharvest decay of blueberry fruit following artificial inoculation with *Alternaria alternata, Botrytis cinerea,* and *Colletotrichum acutatum.*
    4. Assessed the impact of postharvest biofumigation on sensory qualities and antioxidant levels of treated fruit.

- Cotton Purchase Officer (June, 2008 – September, 2008): Nahar Spinning Mills Ltd., India. Responsibilities included working with cotton brokers and ensuring the quality of cotton being sent to spinning mills.

Teaching Experience
- Teaching assistant in the Department of Plant Pathology, NCSU for the course PP 318 (Forest Pathology) in Spring 2014
- Teaching assistant in the Department of Plant Pathology, NCSU for the course PP 315 (Principles of Plant Pathology) in Fall 2013
- Teaching assistant in the Department of Plant Pathology, NCSU for the course PP 590 (Field Plant Pathology in NC) during Fall 2012
- Teaching assistant in the Department of Plant Pathology, UGA for the course Path 4400/6400 (Plant Pathology for Teachers) during Spring 2010
- Mentored a high school student in the laboratory for six weeks under the Young Scholars Internship Program, UGA during Spring 2010

Outreach and Extension Activities
- Contributed to Soybean Summer Science Institute workshop in partnership with by Dr. Megan Kennelly at Kansas State University in June 2018.
- Contributed to Girls Researching Our World (GROW) workshop at Kansas State University in June 2018.
- Volunteered at KSU Plant Pathology Open House 2018.
- Participated in an outreach event at Central Park School, Durham, North Carolina on 11 May 2015.
- Volunteered at BugFest in North Carolina Museum of Natural Sciences (2011, 2012, 2013, and 2014) where I talked about insect-vectored plant pathogens.
- Taught Strawberry DNA extraction to high school students at Athens Drive High School, Raleigh on 17 May 2013 as a part of departmental outreach activity.
- Taught identification of powdery mildew pathogens to high school students from Elizabeth City, NC on educational trip to NCSU as a part of departmental outreach activity.
- Volunteered at Triangle BEST FEST held at North Carolina Museum of Natural Sciences (Spring 2013).
- Presentation on "Mutualism" at Bunn High School, NC on 2 November 2012 as a part of departmental outreach activity.
- Volunteered for Service Raleigh event at North Carolina State University (2011 and 2012).
- Presented on Stagonospora nodorum blotch of wheat at North Eastern Ag Expo, held in Chowan County, North Carolina (Spring 2014).
- Presented on Fusarium head blight and Stagonospora nodorum blotch of wheat at a farmer field day in Walkertown, NC (Spring 2013).
- Presented on Stagonospora nodorum blotch of wheat at a farmer field day in Aurora, NC (Spring 2012).

Leadership Experience
- President of the Plant Pathology Graduate Student Association, NCSU, 2014-15
- Secretary of the Plant Pathology Graduate Student Association, NCSU, 2012-13
- Plant pathology representative for the University Graduate Student Association, NCSU, 2011-12
- Chair of the publicity committee in the University Graduate Student Association, NCSU, 2011-12
- Plant pathology representative for the CAES-GSA, University of Georgia, 2010

Professional Memberships
- American Phytopathological Society (2009 – present)

Other professional activities
- Senior editor for *Plant Health Instructor* (http://www.apsnet.org/edcenter/Pages/default.aspx)
- Ad hoc Reviews for
    - *Plant Disease*
    - *Phytopathology*
    - *Plant Pathology*
    - *Tropical Plant Pathology*
    - *Crop Protection*
    - *Agronomy Journal*
    - *Open Agriculture –De Gruyter*
- Reviewer for American Phytopathological Society student travel award applications,
    - 2011 (reviewed 6 applicants)
    - 2014 (reviewed 5 applicants)
    - 2017 (reviewed 3 applicants)
    - 2018 (reviewed 3 applicants)
- Reviewer for 2017 North Carolina State University Undergraduate Research Grant Proposals (reviewed 8 grant proposals)
- Served on 2018 Tillman scholarship committee in the department of plant pathology at Kansas State University.

Publications (Google scholar citations = 58; h-index = 4)
- **Mehra, L.,** Adhikari, U., Cowger, C., and Ojiambo, P. S. 2018. Septoria nodorum blotch of wheat. *PeerJ Preprints* 6:e27039v2 https://doi.org/10.7287/peerj.preprints.27039v2
- Cowger, C., **Mehra, L.,** Arellano, C., Meyers, E., and Murphy, J. P. 2017. Virulence differences in *Blumeria graminis* f. sp. *tritici* from the central and eastern United States. *Phytopathology* 108:402–411.
- Ojiambo, P. S., Gent, D. H., **Mehra, L. K.,** Christie, D., and Magarey, R. 2017. Focus expansion and stability of the spread parameter estimate of the power law model for dispersal gradients. *PeerJ* 5:e3465.
- **Mehra, L. K.**, Cowger, C., Ojiambo, P. S. 2017. A model for predicting onset of Stagonospora nodorum blotch in winter wheat based on pre-planting and weather factors. *Phytopathology* 107:635–644.

- **Mehra, L. K.**, Cowger, C., Gross, K., and Ojiambo, P. S. 2016. Predicting pre-planting risk of Stagonospora nodorum blotch in winter wheat using machine learning models. (*Frontiers in Plant Science* 7:390).
- **Mehra, L. K.**, Cowger, C., Weisz, R., and Ojiambo, P. S. 2015. Quantifying the effects of wheat residue on severity of Stagonospora nodorum blotch and yield in winter wheat. *Phytopathology* 105:1417–1426.
- **Mehra, L. K.**, MacLean, D. D., Shewfelt, R. L., Smith, K. C., and Scherm, H. 2013. Effect of postharvest biofumigation on fungal decay, sensory quality, and antioxidant levels of blueberry fruit. *Postharvest Biology and Technology.* 85:109–115.
- **Mehra, L. K.**, MacLean, D. D., Savelle, A. T., and Scherm, H. 2013. Postharvest disease development on southern highbush blueberry fruit in relation to berry flesh type and harvest method. *Plant Disease* 97:213–221.
- Scherm, H., **Mehra, L. K.**, and MacLean, D. 2009. Observations on fruit rots in a southern highbush harvesting experiment, 2009. *Dixie Blueberry News* 9(5):7–11.

Oral and Poster Presentations

- Cowger, C., **Mehra, L.,** and Meyers, E. 2017. Wheat powdery mildew: regional differences in virulence and fungicide sensitivity. Eastern Wheat Workers and Southern Small Grains Workers Meeting, Purdue Memorial Union, May 02 – 04, 2017.
- Luo, W., Gottwald, T., Posny, D., **Mehra, L.,** Zhang, S., and Louws, F. 2017. Calculating historical citrus reduction rate/pattern using aerial photography and GIS techniques. 5th International Research Conference on Huanglongbing, March 14–17, 2017.
- **Mehra, L. K.,** Cowger, C., and Ojiambo, P. S. 2016. A model for prediction onset of Stagonospora nodorum blotch in winter wheat based on pre-planting and weather factors. American Phytopathological Society annual meeting, Tampa, FL. (*Poster Presentation*).
- **Mehra, L. K.** 2015. Machine learning models to predict Stagonospora nodorum blotch in winter wheat. Raleigh, NC. Invited seminar speaker at NSF-Center for Integrated Pest Management. (*Oral Presentation*)
- **Mehra, L. K.** 2015. Risk assessment and prediction of Stagonospora nodorum blotch in winter wheat. Geneva, NY. Cornell-NCSU Exchange Student Seminar Speaker. (*Oral Presentation*)
- **Mehra, L. K.** 2015. Predicting Stagonospora nodorum blotch in winter wheat. Plant Pathology Society of North Carolina Annual Meeting. (*Oral Presentation*)
- **Mehra, L. K.,** Cowger, C., and Ojiambo, P. S. 2015. Pre-planting risk assessment models to predict Stagonospora nodorum blotch in winter wheat. American Phytopathological Society annual meeting, Pasadena, CA. (*Poster presentation*)
- **Mehra, L. K.,** Cowger, C., and Ojiambo, P. S. 2015. Wheat residue effects on Stagonospora nodorum blotch and associated economic losses. 2015 Eastern Wheat and Southern Small Grains Workers Conference, Richmond, VA. (*Oral presentation*)
- **Mehra, L. K.,** Cowger, C., and Ojiambo, P. S. 2015. Quantifying the effects of wheat residue on severity of Stagonospora nodorum blotch and yield in winter wheat. 2015 Eastern Wheat and Southern Small Grains Workers Conference, Richmond, VA. (*Poster presentation*)

- **Mehra, L. K.,** Cowger, C., and Ojiambo, P. S. 2015. Pre-planting risk assessment models to predict Stagonospora nodorum blotch in winter wheat. 2015 Graduate Student Research Symposium at NCSU. (*Poster presentation*)
- **Mehra, L. K.,** Cowger, C., and Ojiambo, P. S. 2014. Risk assessment and prediction of Stagonospora nodorum blotch in winter wheat. 2014 Plant Pathology PhD Symposium at NCSU. (*Oral presentation*)
- **Mehra, L. K.,** Cowger, C., and Ojiambo, P. S. 2013. Effect of levels of wheat residue on the severity of Stagonospora nodorum blotch in winter wheat. American Phytopathological Society annual meeting, Austin, TX. (*Poster presentation*)
- **Mehra, L. K.** and Scherm, H. 2010. Fruit flesh type and harvest method affect postharvest decay of southern highbush blueberry. American Phytopathological Society annual meeting, Charlotte, NC. (*Poster presentation*)
- **Mehra, L. K.** 2010. Effect of fruit flesh type and harvest method on postharvest decay of southern highbush blueberry. Georgia Association of Plant Pathologists annual meeting, Savannah, GA. (*Oral presentation*)
- **Mehra, L. K.**, Savelle, A., MacLean, D., and Scherm, H. 2009. Molds and rots on blueberry and pomegranate. Southeastern Professional Fruit Workers Conference, Clemson, SC. (*Oral presentation*)