North Central Division APS Meeting Agenda

TUESDAY JUNE 7, 2016

11 am 4 pm: Farm to Tap Tour: The group will depart the Radisson Hotel lobby at 11 am via bus.
Tour guides: Joshua Havill, Kevin Smith, John Brach, Casey Holley.

11 am 4 pm: Graduate Student Career Skills Workshop and Panel Discussion. The group will meet in 105 Cargill Building (1500 Gortner Ave). Career workshop leader: Renee Rioux. Career panel leader: Garrett Beier. Panelists: Kathy Kromroy (MDA), Nevin Young (UMN), Mike Meyer (DuPont), Mary Palm (USDA-APHIS-PPQ), Linda Hanson (USDA-ARS) and Mohammad Babadoost (University of Illinois Extension).

1- 4 pm: UMN Cereal Rust Tour. The group will meet in front of the Cargill Building at 1 pm and will travel to the Plant Growth Facilities and the Cereal Disease Laboratories with tour leader Dr. Pablo Olivera.

5 8 pm: Welcome Reception. Meet in 395 Borlaug Hall (Borlaug Commons) to learn about the Stakman Borlaug Center for Sustainable Plant Health, enjoy a cocktail dinner reception and lawn games.

WEDNESDAY JUNE 8, 2016

CECC, room 135

8:30 am Opening Remarks.

8:45-9:15 am Dr. Shulu Zhang, Agdia. AmplifyRP An isothermal amplification platform for rapid detection of plant pathogens.

9:15 10 am: Dr. Ian McRae, University of Minnesota, Entomology. Remote Scouting for Plant Disease With Drones - The Highs and Lows..

10 10:30 am: Break and Poster Viewing

10:30-10:45 am: Hafizi Rosli Iowa State University: Validation of a warning system for sooty blotch and flyspeck of apple using a modified relative humidity threshold

10:45-11 am: Lillian Garber University of Minnesota: Characterization of fungi associated with tomato leaf mold in the United States

11- 11:15 am: Roshni Kharadi Michigan State University: The role of phosphodiesterase genes in cyclic-di-GMP degradation and virulence regulation in *Erwinia amylovora*

11:15- 11:30 am: Katarina Sweeney University of Minnesota: Spatial analyses of fungal-plant interfaces to understand colonization mechanisms of two basidiomycete fungi

11:30 11:45 am: John Posch South Dakota. State University: Exploring the interactions of soybean cyst nematode with stem canker pathogens on soybean

11:45 12:00 pm: Saltanat Mambetova. Michigan State University: Integration of resistant cultivars and seed treatment to manage late blight of potato

12:00 1:00 pm: Lunch and poster viewing

1:00 1:40 pm: Dr. Abbdenour Abbas, University of Minnesota Nanotechnology for Plant Health: Promises and Limitations

1:40 - 2:20 pm: Dr. Shaun Curtin, USDA Cereal Disease Lab - Genome engineering of crops by site-specific nucleases

2:20 3:00 pm: Break and poster viewing

3:00 3:15 pm: Irene Donne Michigan State University: Managing carrot foliar blight caused by *Alternaria dauci* in Michigan using biorationals or TOMCAST

3:15 3:30 pm: Joshua Havill University of Minnesota: Screening of wild hop (*Humulus lupulus*) germplasm for identification of resistance to *Pseudoperonospora humuli*

3:30 3:45 pm: Kyle Broderick University of Nebraska Lincoln: Effects of Fluopyram on Soybean Cyst Nematode under Greenhouse Conditions

3:45 4:00 pm: Muhammad Raza Iowa State. University: Comparison of visual disease assessment versus GIS/remote sensing methods to accurately detect the epicenters of Soybean rust foci

4:00 4:15 pm: Justin Stanton University of Minnesota: Testing field equipment for the application of *Xanthomonas translucens* pv. *undulosa*, the causal agent of Bacterial Leaf Streak of wheat.

4:15 4:30 pm: Amanda Beck North Dakota State University: Evaluation of Field Pea for Resistance to, and Seed Transmission of, Pea Seedborne Mosaic Virus (PSbMV)

4:30 6:00 pm: Poster viewing with snacks

6:30 9:30 pm: Dinner and awards ceremony (Radisson Hotel, Roseville)

THURSDAY JUNE 9, 2016

CECC, room 135

7:30 - 8:30 am: Board meeting (491 Borlaug Hall)

8:15 - 8:30 am: Announcements

8:30 - 9:15 am: Dr. Gwynn Beattie, Iowa State University. Advancing agriculture through the lens of a phytobiomes perspective.

9:15 - 10:00 am: Dr. Chris Topp, Danforth Center, Root Imaging Technologies to Understand the Hidden Half of Plants

Adjourn.

SPEAKER PROFILES

Dr. Shulu Zhang completed his PhD at University of East Anglia in 1994 and postdoctoral studies with Dr. Theodor Diener at USDA in Beltsville, Maryland and Professor Terry Bricker at LSU in Baton Rouge He held a post as research assistant professor at the University of Toledo in Ohio and until accepting a position with Agdia Inc. in 2011 where he is a Senior Research Scientist.

Dr. Ian McRae is a professor of entomology at University of Minnesota in Crookston, MN. His research focuses on site-specific IPM and landscape ecology and population dynamics of potato, small grains, and sugarbeet using GIS and spatial statistics.

Dr. Abdennour Abbas is an Assistant Professor of Bionanotechnology in the Department of Bioproducts and Biosystems Engineering at the University of Minnesota. He holds a PhD in Materials Science and Engineering and a Master's degree in Physical Chemistry of Biological Systems from the University of Lille in France. He is the 2013 winner of the MIT Technology Review Award (Top 10 innovators under the age of 35). His research group at the University of Minnesota is focused on the application of biosensors and bionanotechnology for food safety, biodiagnostics, and environmental remediation.

Dr. Shaun Curtin completed his Ph.D at CSIRO Plant Industries in Canberra, Australia with Peter Waterhouse where he studied RNA silencing pathways of Arabidopsis. He has worked at UMN with Bob Stupar and Nevin Young. He recently joined the USDA Cereal Disease Laboratory and is working on a project with Matt Rouse and David Garvin to genome engineer wheat and oat.

Dr. Gwynn Beattie is a Robert Earle Buchanan Distinguished Professor of Bacteriology in the Department of Plant Pathology and Microbiology at Iowa State University. Her teaching and research is focused on the genomics and ecology of plant - associated bacteria. Her research focuses on the influence of microbial communities on plant water use efficiency and factors enabling bacterial pathogens to use light and environmental stress signals to colonize leaves. She is the incoming chair of the APS Public Policy Board and a co-author of the Phytobiomes Roadmap (www.phytobiomes.org).

Dr. Christopher Topp is an Assistant Investigator at the Donald Danforth Plant Science Center, a non-profit plant science research institute. Dr. Topp has studied fundamental processes that drive the growth and productivity of crop plants. His current research focuses on subterranean phenotyping in multiple crop species and identifying the environmental and genetic factors that condition their growth. He aims to develop new crop varieties with root systems capable of drought tolerance and efficient nutrient uptake.

POSTER PRESENTATIONS Room 135 A CECC, set up Wednesday June 8 at 730-815 am, take down Wednesday June 8 at 550 pm

Vahid Omidvar. Building a molecular toolbox to elucidate virulence mechanisms and genomic variability in *Puccinia coronata* f. sp*. avenae*

Navjot Kaur. Reaction of Pakistani elite wheat germplasm to multiple leaf spot diseases

Samantha Gebben. Effect of the exopolysaccharide levan on ooze production and emergence by *Erwinia amylovora*

Kelsie Musil. Population dynamics of the biocontrol agent *Lysobacter enzymogenes* in the rhizospheres of soybean and cereal rye

Mega Botti-Marino. Epiphytic and endophytic populations and biofilm formation of *Clavibacter michiganensis subspeciesnebraskensis*, and the relation to virulence

Bimal Amaradasa. Sub-lethal fungicides induce microsatellite mutation in *Sclerotinia sclerotiorum*

Susan Rottschaefer. Harnessing Brachypodium species to identify genetic resistance to oat crown rust

Rawnaq Chowdhury. Developing a Host-based Quantitative PCR assay to Detect *Phytophthora sojae* Causing Root Rot of Soybean

Sarah Budde. Shift in sensitivity of *Alternaria alternata* isolates to famoxadone collected from tomatoes in Michigan

Sita Thapa. Effectiveness of chemical compounds and biocontrol agents for management of bacteria spot of pumpkin caused by *Xanthomonas cucurbitae*

Brian Cortright. Evaluating the efficacy of ethaboxam (V-10208) for control of *Phytophthora capsici* crown and root rot on fresh market peppers

Irene Gentzel. Exploring the Interaction between the Bacterial Pathogen *Pantoea stewartii* and its Maize Host

Stacy Meyer. Comparison of Succinate-Dehydrogenase Inhibition, Antifungal Activity and Physical Properties of Succinate Dehydrogenase Inhibitor (SDHI) Fungicides

Nolan Anderson. Improved Method for Inoculating Corn Ears

Malini Jayawardana. Genetic mapping of a gene conditioning resistance to bacterial leaf streak in triticale

Venkataramana Chapara. Management of soybean root diseases in multiple planting dates and environments of North Dakota

Douglas Minier. Characterization of phylogenetic groupings within *Rhizoctonia solani* AG2-2

Blake Webster. Native grasses and common weeds as hosts for *Clavibacter michiganensis* subsp. *nebraskensis*

Thomas Justo Miorini. Evaluation of residual fungicide activity in soybean leaves using analytical chemical quantification and *Sclerotinia sclerotiorum* bioassay

Thomas Justo Miorini. Residual effect of fungicides applied by chemigation for white mold control in dry bean

Muhammad Alam. Dynamics of stem end rot disease of mango fruit and its management in Pakistan

Rebecca Curland. Differentiation of *Xanthomonas translucens* pathovars in wheat and barley

Douglas Higgins. Occurrence and management of hop *Humulus lupulus* powdery mildew (*Podosphaera macularis*) in Michigan

Renan Kobayashi-Leonel. Effect of rye cover crop on Sudden Death Syndrome of soybean (*Glycine max*), caused by *Fusarium virguliforme*.

Ying Ma. Use of a PCR diagnostic system revealed switchgrass rust epidemics caused by two pathogen species differ in temporal dynamics

Linda Hanson. Seedling damping-off of sugar beet in Michigan

Suzana Fernandes. Molecular and cultured-based methods to determine the primary pathogen in the fungal/oomycete complex causing root/crown rot of beans in Mozambique

Brian Kontz. Diagnosing for Phomopsis stem canker in sunflower (*Helianthus annuus*) using quantitative polymerase chain reaction assay

Bridget Janssen. Integrated Responses of *Pseudomonas syringae* to light intensity, wavelength, and water availability

Dean Malvick. Multiyear evaluation of tactics to manage soybean sudden death syndrome

Chryseis Tvedt. Efficacy of in-furrow fungicides for management of Fusarium root rot in field pea

Amilcar Vargas. Efficacy of oxathiapiprolin seed treatment toward *Pythium* and *Phytophthora* spp. on soybean.

OLAKUNLE OLAWOLE. Construction and initial characterization of a dspE deletion mutant of *Erwinia tracheiphila*

Ashok Chanda. Effect of inoculum density of *Rhizoctonia solani* on development of root rot on sugar beet cultivars with varying levels of susceptibility

John Posch. Determining the interaction between the stem canker fungus *Diaporthe longicolla* and the soybean aphid *Aphis glycines* on soybean

Nikita Gambhir. Comparison of four methods for determination of *Sclerotinia sclerotiorum* fungicide sensitivity

Bryn Halley. Field evaluations of stripe rust (*Puccinia striiformis*) resistance in hard red spring wheat varieties in North Dakota in 2015

James Kurle. Inoculation method and watering regime alter symptom expression and relative susceptibility of soybean varieties inoculated with *Fusarium virguliforme*

Rashelle Matthiesen. Comparing the efficacy of 3 inoculation methods to evaluate 2biocontrol agents against *Pythium sylvaticum*

Nelomie Galagedara. Genome wide association mapping of resistance to tan spot in durum wheat

Grace Anderson. *Pythium* and *Phytopythium* spp. isolated from soybean in Minnesota exhibit symbiotic behaviors ranging from parasitism to mutualism

Grazieli Araldi-Da-Silva. Cover crop host range of *Pythium sylvaticum*

Oscar Perez-Hernandez. Transmission potential of *Sclerotinia sclerotiorum* to cotton seedlings from differential exposure times of seeds to mycelium

Jennifer Odom. Evaluation of field pea varieties for resistance to Fusarium root rot pathogens