2019 WSU Plant Sciences Retreat

Saturday, March 2nd, CUE 202, dinner and poster session, CUE 5th Floor

11:00 am Open poster session, CUE 5th Floor

1:00 pm Welcome and opening remarks: **Prof. Michael Neff**, MPS Program Director

1:15-2:45 **Session I:** Chair Camille Steber

Dr. **David Crowder:** Plant-insect-virus interactions in the Palouse.

Synopsis: The Crowder lab examines plant-insect-pathogen interactions in several key cropping systems of the Pacific Northwest, and the molecular mechanisms that mediate these interactions. More specifically, we are currently exploring how chemical and physical defenses of legume plants affect susceptibility of aphid-borne viruses in the Palouse region.

Dr. Wei Wei: A fungal protein effector from *Sclerotinia sclerotiorumsecrets* specifically interacts with and mitigates the role of plant polygalacturonase-inhibiting protein (PGIP)

Synopsis: Fungal pathogens penetrate plant cell wall for infection and plants have evolved PGIP to protect cell wall from degradation by fungal polygalacturonases. *S.sclerotiorumsecrets* produces a protein that mitigates the inhibitory effect of PGIP and promotes fungal virulence.

Dr. Kevin Lewis: Characterizing phenylpropanoid biosynthesis in Sorghum bicolor to solve the lignin problem.

Synopsis: Cellulosic bioethanol production is hampered by lignin. Mutations to lignin production in *Sorghum bicolor* lower the lignin content but leave plants otherwise normal. Characterization of these mutants would enable designing plants that are more amenable to biofuel production.

David Sliman: Regulation of Heteromeric Acetyl-CoA Carboxylase in *Arabidopsis thaliana*

Synopsis: Triacylglycerol is the major storage oil in plants and serves many purposes for human health, renewable petrochemical alternatives, and biofuels. Acetyl-CoA Carboxylase is a key regulator of triacylglycerol production. We utilize CRISPR/Cas9 gene editing technology to understand and improve oil synthesis in crops.

Stephanie Sjoberg: Controlling wheat grain germination and seedling emergence: Can we have our cake and eat it too?

Synopsis: In wheat, too much seed dormancy results in poor seedling emergence, whereas too little dormancy leads to preharvest sprouting if it rains before harvest. Can genomic selection enable us to breed for preharvest sprouting tolerance without compromising seedling emergence?

Sharol Schmidt: Functions of MACET4 in plant cell division

Synopsis: Plant cells divide using a highly specialized apparatus, known as the phragmoplast. The phragmoplast functions depend on dynamics of microtubules. My work focuses on the analysis of novel plant-specific regulator of microtubules MACET4 in the phragmoplast.

2:45-3:25 Coffee Break

3:25-4:00 **Session II:** Chair Andrei Smertenko

Zara York: CAMTA4: a putative regulator of seedling root-growth rate *in Brachypodium distachyon*.

Synopsis: We identified loci associated with seedling root-growth rate in B. distachyon via QTL-Seq. We further identified differential expression of calmodulin-binding transcription activator 4 (CAMTA4), which has functional significance in cell wall biosynthesis and abiotic stress responses.

Dr. Dominik Schneider: The New Compact Plants Phenomics Center at WSU

Synopsis: Learn how we autonomously image and quantify plant phenotypes! I will introduce the new facility's capabilities and show off the results from some early pilot studies.

4:00-4:10 Introduction of keynote speaker: **Michael Neff,** MPS Program Director

4:10-5:00 **Dr Jared Bell, Corteva Agriscience**

Title: Crop Protection Discovery: A New Era in Herbicide Innovation

5:00-9:00 Buffet dinner and poster viewing CUE 5th Floor.

The WSU Plant Sciences Retreat is organized by the Molecular Plant Sciences Graduate Program with support from the Graduate School, the Agricultural Research Center, CAHNRS and the College of Sciences.