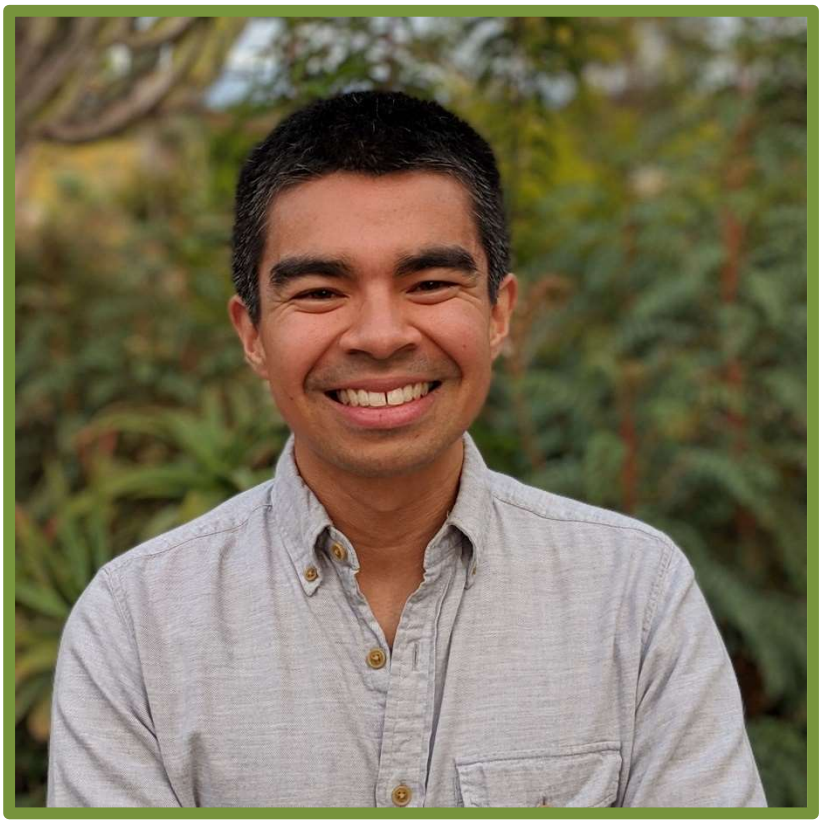
WSU Plant Pathology Student-Invited Speaker

Within Spitting Distance: A Plant Immune Receptor for Caterpillar Oral Secretions

Adam Steinbrenner, Assistant Professor

University of Washington, Seattle | Department of Biology

April 10th, 2023, 4:10 Pacific Time | Clark 151 or via Zoom



4:10 pm | April 10th, 2023 | Clark 151 | Plant Pathology 515, Spring 2023

Zoom Link: https://wsu.zoom.us/j/95501196325?pwd=aGdCeTZGM0pQaXZoY05qT3M0SFVHQT09

Meeting ID: 955 0119 6325 **Passcode:** 5498

Call in number: 1 253 215 8782

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Abstract:

The plant innate immune system detects molecular patterns associated with diverse pests and pathogens. While plant mechanisms for recognition of microbial pathogens are well characterized, recognition of insect herbivores is less well understood. To address this gap, we have studied recognition of inceptin peptides found in oral secretions of Lepidopteran larval herbivores (caterpillars). Inceptins are only bioactive on specific legume species. We leveraged germplasm resources in cowpea (*Vigna unguiculata*) to identify an Inceptin Receptor (INR) able to bind inceptin peptide and activate signaling and defense responses against chewing herbivores. I will discuss functional aspects of INR as an means to both amplify and tune the plant wound responses. I will also describe a recent investigation of the evolutionary origin of INR in Phaseoloid legumes. Finally, I will describe ongoing efforts to restore INR to soybean to provide a novel pest resistance trait. I will argue that phylogenomic and functional characterization of key immune receptors provides a roadmap for durable pest resistance.

This event was made possible through generous funding from the CougParents Foundation, the Graduate and Professional Student Association (GPSA) and The Department of Plant Pathology at WSU

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