Genome Sciences Seminar

Wednesday, 10.5.22| 3:30 | Foege Auditorium

remote viewing option: https://depts.washington.edu/gsrestrc/remote.htm

Dr. David Stern

Senior Group Leader, Janelia Research Campus
Investigator, Howard Hughes Medical Institute

"Toward a mechanistic understanding of plant gall induction by aphids"

Insect plant galls are beautifully patterned atypical plant growths that provide the insects with enhanced nutrition and protection from environmental vicissitudes, predators, and parasites (Mani, 1964). Around 300 B.C., the Greek philosopher and founder of botany Theophrastus described ten kinds of insect galls found on oak trees and discussed their economic uses (Senn, 1942). Probably at least since that time, students of natural history have wondered how insect galls are formed. Are they a plant "wound response" or an "extended phenotype" of the attacking organism (Dawkins, 1982)? We have discovered that gall-inducing aphids inject hundreds of Bicycle proteins—a new family of proteins specific to aphids and scale insects—directly into plant cells during gall development (Korgaonkar et al. 2021; Stern & Han 2022). I will present genetic evidence that Bicycle proteins contribute to gall development and describe our efforts to identify the molecular mode of action of these novel proteins.

https://www.janelia.org/lab/stern-lab

Questions? Contact Brian Giebel at bgiebel@uw.edu or visit the Seminar website at http://www.gs.washington.edu/news/seminars.htm