The Department of Plant and Soil Sciences cordially invites you to a seminar on

"Phase Separation Control of Plant immunity"

By
Dr. Shuai Huang
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Research Seminar-Monday, March 7, 2022
11:00 AM-12:00PM
https://udel.zoom.us/j/96820060918
Password: Seminar

Abstract:
Cells constitute the basic unit in biology, compartmentalizing many of their enzymatic activities in membrane-bound organelles to generate the building blocks and chemical substrates necessary for life. Yet not all activities are membrane delineated. An emerging field in cell biology has discovered that cells also enlist membraneless biomolecular condensates arising from liquid-liquid phase separation (LLPS) to create additional levels of compartmentalization. These condensates play critical roles in diverse cellular processes and underlie several disease states when LLPS is hampered. There are several critical gaps of our knowledge on the molecular mechanisms underlying LLPS in vivo. For example, it is not known whether LLPS is involved in organismal defense and the genetic contributions to LLPS-mediated immunity in the nucleus have not been studied. We identified a new superfamily of plant Guanylate-Binding Protein-Like GTPases (GBPLs) that assemble LLPS-driven condensates within the nucleus to protect against infection and autoimmunity, highlighting the biological importance of phase-separated condensates in vivo.

Bio:
Dr. Huang did his undergraduate in China, followed by a MSc and a PhD degree at the University of British Columbia in Canada with Dr. Xin Li. He is now a postdoc fellow at Yale University/Howard Hughes Medical Institute with Dr. John MacMicking. Dr. Huang’s long-standing interests is to understand the molecular mechanisms and biochemical pathways of immunity using plant model systems. His current research investigates the role of biomolecular condensates arising from liquid-liquid phase separation in plant immunity using a combination of genetics, genomics, molecular and cell biology, biochemistry and structural biology approaches.