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SCHOOL OF  
**BIOSYSTEMS AND  
AGRICULTURAL ENGINEERING**  
College of Engineering, Architecture and Technology

BAE SEMINAR SERIES

## Designing Agricultural Decisions Under Soil and Water Constraints

### BEE CHIM

Bee Chim is an Assistant Professor in the Department of Plant and Soil Sciences and Director of the Soil, Water, and Forage Analytical Laboratory (SWFAL) at Oklahoma State University. Her research focuses on applied soil chemistry, nutrient and contaminant dynamics, and analytical tools that help translate soil, and plant data into actionable agricultural decisions. She works at the interface of research, field management, and producer education to support sustainable and data-driven agricultural systems.



### ABSTRACT

Reliable soil and plant measurements are essential for sustainable agricultural systems, yet turning analytical data into actionable management decisions is often challenging. This seminar will share ongoing research at the intersection of soil science, forage systems, and analytical technologies, including soil and forage testing, near-infrared spectroscopy, and current work on salinity and waste management-related issues. Through applied examples, I will highlight where measurement uncertainty, calibration, and data integration limit decision-making and discuss opportunities for collaboration where engineering approaches can strengthen sampling, modeling, and decision-support tools.