SEMINAR UCDAVIS BIOLOGICAL AND AGRICULTURAL ENGINEERING

Graduate Exit Seminar

Monday, August 26th, 2024
1:00PM – 2:00PM
2045 Bainer Hall

Zoom link: https://ucdavis.zoom.us/j/5305280421?omn=91678217969
Meeting ID: 530 528 0421

Speaker: Omar Samara

Ph.D. Candidate
Biological and Agricultural Engineering
University of California, Davis

Title: Evaluation of Agrivoltaic Systems for Enhanced Agricultural Resource Sustainability

Bio: Omar Samara received his B.S. in Engineering Sciences at California State University, Bakersfield, and chose to purse a Ph.D. in Biological Systems Engineering at University of California, Davis following his time in the agricultural and wastewater industries. His primary research area is sustainability within the food-water-energy nexus, specifically through developing agrivoltaic systems (a novel form of agricultural production where photovoltaic solar panels are placed over agricultural crops to optimize the system). His other interests include working on emerging technologies for agriculture including drones, indoor hydroponic production, and farm electrification.

Abstract: Climate change and environmental regulations are putting increasing pressure on agricultural systems to become more sustainable while maintaining economic viability. Agrivoltaics (a novel form of agricultural production where solar panels are placed over crops) are a proposed method to increase agricultural water and resource sustainability through the dual use of agricultural land. Given how new agrivoltaic systems are, there is a limited (although rapidly expanding) body of work relating to agrivoltaic design or their operations and impacts on agricultural systems. This seminar will discuss research investigating the following objectives: 1) evaluation of the impact of agrivoltaic system design on processing tomato productivity under field conditions by measuring plant growth and yields (e.g., yield, photosynthesis, crop development), 2) development of a modeling framework for simulation and optimization of agrivoltaic designs, and 3) assessment of the potential of agrivoltaics in California through geospatial analysis.