

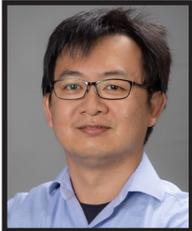


UCF

FACULTY RESEARCH TALKS

LISTEN. LEARN. COLLABORATE.

Zoom talk | Friday, June 24, 2022 | Noon to 1 p.m.



PRESENTER 1:

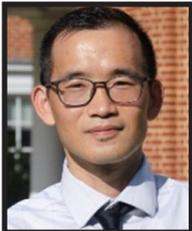
WEI ZHANG

Assistant Professor,
Computer Science,
Genomics and
Bioinformatics Cluster

Multi-Omics Data Integration to Improve Type-1 Diabetes Outcome Prediction

Type-1 diabetes outcome prediction plays an important role in identifying novel risk factors, ensuring early patient care, and designing cohort studies. The abundance of missing data in collected omics profiles makes the prediction more difficult. In this talk, Dr. Zhang will introduce a study that develops methods for large-scale gene expression imputation and islet autoimmunity (IA) prediction. This study is collaborated with St. Jude Children's Research Hospital and supported by the NIH.

Dr. Zhang's research interests include computational biology and machine learning. His research has centered on investigating the role of transcriptome variants in diseases, spanning from technique-driven research (e.g., algorithm development for disease outcome prediction), to the hypothesis-driven investigation of specific biological problems. He received his Ph.D. and MS from the University of Minnesota in 2015 and 2011, both in computer science. Before joining UCF in 2017, he was a research associate at the University of Minnesota. Dr. Zhang received the NIH dkNET New Investigator award in 2020 and the NSF CRII award in 2018.



PRESENTER 2:

JIANNAN "NICK" CHEN

Assistant Professor,
Civil, Environmental
and Construction
Engineering

The Environmental-Economic Assessments of the Solid and Hazardous Waste Management

Improperly managed solid and hazardous waste poses a severe threat to human health and the environment. Therefore, effectively managing the waste becomes the most challenging problem for the waste industry and federal/state environmental protection agencies. In this talk, Dr. Chen will present the modeling approaches for the life-cycle assessment of the waste management system and the optimization of the environmental management of the waste containment system.

Dr. Chen's research interests include the fate and transport of emerging contaminants from the waste containment system, vadose zone geochemical modeling, polymer-based geosynthetics, life-cycle assessment of the recycling programs, and machine learning in engineering design. Dr. Chen is the PI of multiple projects funded by the CRESP, Hinkley Center, Orange County Utility, and Terracon. He received a Ph.D. in geological engineering at the University of Wisconsin in 2015. Before joining UCF in 2020, he was a research associate at the University of Virginia.



PRESENTER 3:

ROBERT STEWARD

Assistant Professor,
Mechanical and
Aerospace Engineering

Extracellular Matrix Composition Alters Cellular Biomechanical Forces

The extracellular matrix (ECM) is the underlying scaffolding all anchorage-dependent cells attach to and are dependent upon for survival. Within blood vessels, the ECM links the intima (composed of endothelial cells) to the media layer (composed of smooth muscle cells). However, ECM composition can and often does change as a function of pathological and physiological processes; the influence this has on cellular biomechanics is currently unknown. In this talk, Dr. Steward will discuss his latest research efforts investigating the influence of ECM composition on endothelial cell biomechanics.

Dr. Steward's research focuses specifically on elucidating the underlying role mechanics plays in cell physiology and pathology. He has active projects in the cardiovascular field, diabetes, neurosciences, and gut epithelium. Dr. Steward received his Ph.D. from Carnegie Mellon University and completed a postdoc at the T.H. Chan Harvard School of Public Health. His research is supported by the NIH and NSF.