



UCF

FACULTY RESEARCH TALKS

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Zoom talk | Friday, Feb. 9, 2024 | Noon to 1 p.m.



PRESENTER 1:

WEIWEI ZHAN

Assistant Professor
Civil, Construction
and Environmental
Engineering

Leveraging Big Earth Observation Data for Geohazards Modeling and Infrastructure Resilience

This presentation explores the transformative potential of leveraging Big Earth Observation (EO) data to enhance geohazards modeling and fortify infrastructure resilience. Focusing on the utilization of multi-platform remote sensing images, seismic monitoring networks and advanced analytics, the presentation highlights the role of Big EO data in providing real-time, high-resolution information for early detection, monitoring and prediction of multiple geohazards, such as earthquakes, landslides and soil liquefaction. The presentation also showcases how integrating geomechanics and data analytics can advance scientific knowledge and engineering impacts in the natural hazard field.

Dr. Zhan directs the Geosystems Engineering and Intelligence Lab (GEI-Lab). Prior to that, he worked as a postdoc at the University of Texas at Austin and Tufts University, after receiving a doctorate in civil engineering from Clemson University and a bachelor's degree in geological engineering from China. His main research area is geosystems engineering, where he uses comprehensive and multi-scale approaches including remote sensing, signal processing, geomaterial testing, computational geomechanics and artificial intelligence to study geohazards' spatiotemporal patterns and infrastructure resilience.



PRESENTER 2:

**ABIGAIL
WILSON
ANDERSON**

Assistant Professor
School of Kinesiology
and Rehabilitation
Sciences

Variability in Pain and Response to Rehabilitation Treatments

Chronic pain is a highly prevalent condition frequently treated by rehabilitation providers, such as physical therapists. However, effect sizes for reductions in pain and disability after rehabilitation remain small to moderate. Dr. Wilson Anderson's research aims to improve treatments effects through a mechanistic based approach in which interventions are selected based on aberrant mechanisms contributing to the patient's pain condition. In this presentation, she will discuss her research characterizing individuals with musculoskeletal pain based on biopsychosocial factors (pain phenotyping). Next, she will introduce her work investigating novel treatment selection approaches for rehabilitation providers. She will conclude her presentation by providing an overview of ongoing research exploring if pain phenotyping may help inform exercise prescription for individuals with musculoskeletal pain.

Dr. Wilson Anderson directs the Rehabilitation and Modulation of Pain (RAMP) Research Laboratory within the UCF Institute of Exercise Physiology and Rehabilitation Science. She earned a doctor of physical therapy from Mercer University and a doctorate in rehabilitation science from the University of Florida.