



FACULTY RESEARCH TALKS

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Zoom talk | Friday, Jan. 26, 2024 | Noon to 1 p.m.



PRESENTER 1:

JOSEPH T. KIDER

Associate Professor
Institute for Simulation
and Training

Advancing Interdisciplinary Research with Immersive Technologies in Cultural Heritage

In this talk, Dr. Kider will cover several research projects funded by the National Endowment for the Humanities that bridge immersive technologies and cultural heritage. This work records the life and culture of sites through the capture of digital lidar scans, 3D models, and virtual and augmented experiences which contextualizes them through contemporaneous photographs, documents and oral histories of individuals. This provides highly accurate representations, detailed documentation assessments of cultural heritage in the field and enables fieldwork across multiple disciplines. The goal is to illustrate how blending ideas from the humanities, social science and STEM fields shape the sociotechnical implications of computing.

Dr. Kider received his Ph.D. from the University of Pennsylvania and was a postdoctoral fellow at Cornell University. He co-directs the SENSEable Design Lab, which conducts interdisciplinary research in virtual reality, augmented reality, human-robotic teams, computer graphics and human-computer interaction. This trans-disciplinary research utilizes computer graphics and computational simulation to design virtual environments, cutting-edge hardware and technology to design novel research settings, and elements of cognitive and experimental psychology to rigorously study interactions and teaming in the built environment.



PRESENTER 2:

**EHSAN
SHIRZAEI SANI**

Assistant Professor
Materials Science
and Engineering

Smart Bioelectronic Systems for Multiplexed Monitoring and Combination Treatment of Infected Chronic Wounds

Recent advances in wearable bioelectronics have revolutionized personalized disease management beyond conventional modalities that may require long-term hospitalization towards the shift from conventional medicine to remote at-home healthcare. In this presentation, Dr. Sani will introduce his research on the development of a fully-integrated wearable bioelectronic system that wirelessly and continuously monitors the condition of the wound bed via a custom multiplexed multimodal electrochemical biosensor array and performs non-invasive combination therapy through controlled anti-inflammatory/antimicrobial treatment, as well as electrically-stimulated tissue regeneration.

Dr. Sani joined UCF in Fall 2023 as part of the UCF Infectious Disease and Travel Health Initiative. His research focuses on advanced biomaterials for human/machine interfaces, regenerative medicine and wearable/implantable technologies for theragnostic applications. Additionally, he serves as the CEO and co-founder of GIANT BioSystems, a startup specializing in medical diagnostics for antimicrobial susceptibility testing and drug screening. Currently, he teaches the undergraduate course Experimental Techniques in Materials II. Before joining UCF, he was a postdoctoral fellow at the California Institute of Technology, having earned his Ph.D. from UCLA and M.S. from Sharif University of Technology, both in chemical engineering. Sani has authored/co-authored more than 50 research articles, a book chapter, and holds five U.S. patent applications.