UNIVERSITY OF CENTRAL FLORIDA | ORLANDO

College of Engineering and Computer Science

FACULTY RESEARCH TALKS

LISTEN. LEARN. COLLABORATE.

Zoom talk | Friday, July 31, 2020 | Noon to 1 p.m.

PRESENTER 1:
ELIZABETH KLONOFF
Vice President for Research and Dean of the College of Graduate Studies

The Office of Research: What Have You Done for Me Lately?

The Office of Research and College of Graduate Studies is devoted to supporting and advancing research and the next generation of scholars to make an impact on the world. UCF is a 21st-century, metropolitan research university, which last year generated $192 million in sponsored research. Dr. Klonoff will discuss a variety of programs and initiatives her unit created or is supporting to help faculty as they seek research funding. She will cover the steady increase of research funding at UCF and how the Faculty Cluster Initiative (FCI) is bringing together outstanding faculty from multiple colleges to support and expand new and existing interdisciplinary areas of strength. She will also highlight efforts to enhance the quality of graduate education. Dr. Klonoff will also discuss the efforts of two blue-ribbon panels, one on Energy and one on Big Data/AI, in their quest to create university wide umbrella entities, which will showcase our strengths and expand our education and research portfolio in these important focal areas.

A clinical and health psychologist, Dr. Klonoff received her Ph.D. from the University of Oregon. She was a professor of psychology at San Diego State University and a professor of psychiatry at the University of California, San Diego. She also served as faculty member at Case Western Reserve University School of Medicine and at Duke University Medical Center. Previously funded by NIH and the California Department of Health Services, she has published widely on culture and gender diversity, behavioral medicine, and preventive medicine; is board certified in both clinical and health psychology; and is a fellow of the American Psychological Association in multiple divisions.

PRESENTER 2:
STEPHANIE FLORCZYK
Assistant Professor, Materials Science and Engineering

Biomaterial Scaffolds for Modeling the Tumor Environment

In vitro evaluation of new cancer treatments is essential, but it is often performed with 2D cultures that do not replicate in vivo conditions. 3D cultures better mimic the in vivo microenvironment and provide responses that better match the patient. In this presentation, Dr. Florczyk will introduce her research related to developing biomaterial scaffolds for prostate cancer and breast cancer tumor microenvironment applications. Recent work with new scaffold compositions and fabrication methods will be highlighted.

Dr. Florczyk's research group focuses on the development of biomaterial scaffolds for tumor microenvironment and regenerative medicine applications. Her group produces 3D porous scaffolds from natural polymers and investigates the cell-material interaction of cancer cells and adult stem cells with the scaffolds. She earned her Ph.D. in materials science and engineering at University of Washington. Dr. Florczyk completed a National Research Council Postdoctoral Fellowship at National Institute of Standards and Technology prior to joining UCF. Her research is supported by NIH and the Florida Department of Health.

ZOOM LINK: https://bit.ly/35unuVe | QUESTIONS? Email Jennifer.Sutton@ucf.edu

For more information, and to see previous talks, visit www.cecs.ucf.edu/faculty-research-talks

UNIVERSITY OF CENTRAL FLORIDA | ORLANDO

College of Engineering and Computer Science

FACULTY RESEARCH TALKS

LISTEN. LEARN. COLLABORATE.

Zoom talk | Friday, July 31, 2020 | Noon to 1 p.m.

PRESENTER 3:
TAREK ELGOHARY
Assistant Professor, Mechanical and Aerospace Engineering

Astrodynamics and Space Robotics

In this talk, Dr. Elgohary will discuss the analytical, computational and experimental efforts taking place at the Astrodynamics and Space Robotics Laboratory (ASRL). He will cover several developments of the Taylor series-based analytic continuation technique, including zonal perturbations, atmospheric drag and arbitrary order geopotential gravity. He will also discuss a multi-revolution solution to Lambert's problem, sharing a new approach for space-based orbit determination using multiple observation nodes. Finally, Dr. Elgohary will introduce the robotics platform currently under development at ASRL, with its application in hardware-in-the-loop validation for early detection and tracking of space debris and potentially hazardous objects.

Dr. Elgohary was a postdoctoral research associate at Texas A&M University before coming to UCF. He received his B.S. in mechanical engineering from American University in Cairo and his master's and Ph.D. in aerospace engineering from Texas A&M University. He was a visiting scholar in the department of mechanical and aerospace engineering at the University of California, Irvine in 2014/2015. His research interests are developing analytical and computational techniques for nonlinear systems, optimal control and two-point boundary value problems and uncertainty quantification in astrodynamics.

PRESENTER 4:
FAN YAO
Assistant Professor, Electrical and Computer Engineering

Investigating and Thwarting Hardware-Based Adversaries in Future Computing Systems

With the fast evolvement of computer architectures and the rapid development of new application paradigms, understanding the security impacts due to new vulnerabilities in computer hardware/architecture designs and defeating adversaries exploiting them are critical. In this talk, Dr. Yao will introduce several research projects that investigate hardware security in computing systems from device, architecture and software perspectives. Dr. Yao will also present a recent work that demonstrates a new class of attack leveraging DRAM faults to compromise the model integrity of deep neural networks.

Dr. Yao's research interests are in the areas of computer architecture, security, and energy-efficient computing. His current research focuses on investigating information security in emerging processor/memory architectures and exploring the implications of hardware-based threats on machine learning applications. His research group, Computer Architecture and System Security Lab, publishes in several leading computer architecture and system security venues. Dr. Yao received his Ph.D. in computer engineering in 2018 at George Washington University, where he received the Best Dissertation Award.

ZOOM LINK: https://bit.ly/35unuVe | QUESTIONS? Email Jennifer.Sutton@ucf.edu

For more information, and to see previous talks, visit www.cecs.ucf.edu/faculty-research-talks