College of Engineering and Computer Science
FACULTY RESEARCH TALKS
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Zoom talk | Friday, June 26, 2020 | Noon to 1 p.m.

PRESENTER 1:
CAROLINA CRUZ-NEIRA
Agere Chair Professor, Computer Science

Virtual Reality for Discovery, Training and Innovation

This talk gives a quick overview of Dr. Cruz-Neira's research, addressing the opportunities and challenges on using VR as a tool for: enabling discovery and insight in many research disciplines; creating novel training environments with a wide range of situations; improving, accelerating and advancing processes and product-to-market operations; opening new models for education, both formal and informal; and many other areas. She will also discuss her vision to collaborate with a wide range of research and industry groups to effectively use these technologies as a force for innovation.

Dr. Cruz-Neira is a member of the National Academy of Engineering and a pioneer in the areas of virtual reality and interactive visualization. She is known worldwide for being the creator of the CAVE virtual reality system and recognized for having founded and led very successful virtual reality research centers. Dr. Cruz-Neira has been named one of the top innovators in virtual reality and one of the top three greatest women visionaries in virtual reality. She is an IEEE Fellow and an ACM Computer Pioneer, and has received the IEEE Virtual Reality Technical Achievement Award and the Distinguished Career Award from the International Digital Media & Arts Society, among many other recognitions.

PRESENTER 2:
ALEKSANDAR DIMITROVSKI
Assoc. Professor, Electrical and Computer Engineering

Advanced Modeling and Control of Power Systems

This talk will highlight two current projects in power system modeling and control. One is hardware-based on the development of a magnetic amplifier for power flow control, previously funded by the Department of Energy's (DOE) Advanced Research Projects Agency - Energy, and now funded by the DOE Office of Electricity's (OE) Transformer Resilience and Advanced Components program. The other is software-based on fast parallel transient stability simulations of large power systems, funded by the DOE OE's Advanced Grid Modeling program.

Before joining the University of Central Florida, Dr. Dimitrovski was chief technical scientist at Oak Ridge National Laboratory and joint faculty at the University of Tennessee, Knoxville. He was previously with Schweitzer Engineering Laboratories and Washington State University, Pullman. He received his B.Sc. and Ph.D. degrees in electrical engineering with emphasis in power, and his M.Sc. degree in applied computer sciences in Europe. Dr. Dimitrovski's research focus areas include modeling, analysis, protection, and control of uncertain power systems.

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PRESENTER 3:
SHAWN PUTNAM
Assoc. Professor,
Mechanical
and Aerospace
Engineering

Interfacial Transport Laboratory

This talk will overview Dr. Putnam's research groups' journey in understanding the fundamentals of micro-/nano-scale heat and mass transport at materials interfaces. In particular, three conjugated topics will be discussed: transient fluid wetting on physically and chemically engineered surfaces; transient boiling and evaporation at macro- to nano-scales; and the application of metamaterial coatings to actively control optical, fluid, and thermal transport.

Dr. Putnam joined the University of Central Florida in August 2012. A native of the northern logging town of Cloquet, Minnesota, he received B.Sc. degrees in 2001 in physics and applied mathematics from the University of Minnesota, Duluth. In 2007, Dr. Putnam received his Ph.D. in materials science and engineering from the University of Illinois, Urbana-Champaign. He has conducted research for the Air Force Research Laboratory at Wright-Patterson AFB in the area of materials and thermal sciences. His expertise spans a multidisciplinary skill set in thermo-fluid sciences, optical metrology, and materials science and engineering. Dr. Putnam's work has been funded by National Science Foundation, the U.S.-Israel Binational Science Foundation, and the Office of Naval Research.

PRESENTER 4:
IVAN GARIBAY
Asst. Professor,
Industrial Engineering
and Management
Systems

Complex Social Systems Modeling and Artificial Social Intelligent Agents: Two Sides of the Same Coin

In this talk, Dr. Garibay will discuss his group's efforts to improve their understanding of social media disinformation and polarization — in particular, new methods for complex social-technical modeling using agent-based models and their connection with the emerging area of artificial social intelligence. He will also cover three of his projects: the DARPA project SocialSim, focused on simulating the global social media information environment; the DARPA project ASIST on creating artificial intelligent assistants aware of social clues; and the Disney project Lifelong Learning on deep learning innovation and intrapreneurship.

Dr. Garibay's research interests include complexity sciences with a focus on complex socio-technical-economic systems modeling and simulation. He obtained his Ph.D. in computer science from the University of Central Florida. Before joining the UCF College of Engineering and Computer Science, Dr. Garibay served as director of the Office of Technology and Innovation at the UCF Office of Research and Commercialization. He serves as the director of the UCF Master of Science in Data Analytics program and director of the Complex Adaptive Systems Laboratory.