Planning for Learner Variation in Postsecondary STEM and Beyond

Postsecondary STEM education typically does not plan for variation in students’ needs, abilities and interests; students and instructors agree that instructors do not know how to adequately support postsecondary students with disabilities. In this talk, Dr. Chini will summarize the approaches her research group has taken to describe the current state of postsecondary STEM education for students with disabilities and to develop evidence-based instructional strategies and professional development tools to support instructors in meeting students’ needs.

Dr. Chini’s research focuses on adapting research-based instructional settings to support variation in postsecondary STEM students’ needs, abilities and interests while building the necessary professional and institutional knowledge to implement such practices. Dr. Chini has been PI on four National Science Foundation awards, including an early career award, and co-PI on two additional awards. She earned a B.A. in physics from Drew University and a Ph.D. in physics for research in physics education from Kansas State University.

Ultrafast XUV and X-Ray Spectroscopy of Charge Dynamics

Electrons and ions move within an atomic or molecular system at a timescale of femto- and attoseconds, respectively. The recent advance in ultrafast photon sources has enabled time-resolved investigations of the charge motions and their correlations at their natural time scales. Ultrafast x-rays allow experimental approaches with both the desired temporal and atomic spatial resolution. In this talk, Dr. Fang will present research projects of tracing photo-induced charge dynamics in the time domain with fully-resolved kinematic information and generation of low-temperature nanoplasmas in atomic clusters.

Dr. Fang’s research is focused on using ultrafast lasers and photon sources to investigate charge dynamics in atomic and molecular systems. Before joining UCF, she was a research scientist at Ohio State University. She earned her Ph.D. in physics from University of Connecticut in 2009 and did her postdoctoral work at Stanford Linear Accelerator Center (SLAC) National Laboratory.