

The Illinois MRSEC: Mechanics and Dynamics of Nanodevices

The Illinois Materials Research Science and Engineering Center (I-MRSEC) was recently funded to perform fundamental, innovative research and to support training in materials design, understanding, and application. Two interdisciplinary research groups are supported: the first, on Metallic Antiferromagnetic Materials, aims to advance understanding and control of metallic antiferromagnets using ultrafast optics and currents, as well as fast temperature excursions. The second, on Active Interfaces Between Highly-Deformable Nanomaterials, aims to transform understanding of the link between deformations of 2D heterostructures and molecular assemblies, and the resultant changes in electronic, chemical, and optical properties. In this talk I will focus on the nano-devices, techniques, and facilities used in the research.

Nadya Mason, Professor of Physics at the University of Illinois at Urbana-Champaign



Nadya Mason is a professor of physics at the University of Illinois at Urbana-Champaign and Director of the Illinois Materials Research Science and Engineering Center. Dr. Mason received her B.S. in physics from Harvard University (1995) and her Ph.D. in physics from Stanford University (2001). A condensed matter experimentalist, Dr. Mason focuses on electron behavior in low-dimensional materials such as nanowires, graphene, and nano-structured superconductors. Her research is relevant to the fundamental physics of small systems, as well as to applications involving nano-scale electronic elements. In addition to maintaining a rigorous research program and teaching, Dr. Mason works to increase diversity in the physical sciences, embracing opportunities to encourage and mentor aspiring scientists from underrepresented groups and to promote a welcoming climate within the field. Dr. Mason was a recipient of a National Science Foundation CAREER award in 2007, was named a 2008 Emerging Scholar by *Diverse Issues in Higher Education* magazine, the 2009 Denise Denton Emerging Leader Award, and the 2012 Maria Goeppert Mayer Award of the American Physical Society (APS). She is a General Councilor of the APS and former Chair of the APS Committee on Minorities.