M.E.L. OAKES UNDERGRADUATE LECTURE SERIES

Wednesday, October 2, 2013, at 4:15 p.m. in RLM 4.102

From Quanta to the Continuum: Opportunities for Mesoscale Science

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and

Departments of Physics, Electrical Engineering, and Mechanical Engineering

University of Illinois Chicago Circle

Mesoscale science embraces the regime where atomic granularity and quantization of energy yield to continuous matter and energy, where new levels of complexity and functionality emerge from simpler components, and where disparate degrees of freedom interact to produce entirely new behavior. Mesoscale science builds on the ever-growing foundation of nanoscale tools and insights developed over the last decade and that continue to develop. Mesoscale phenomena offer a new scientific opportunity: discovering and designing architectures and interactions from the bottom up to create new macroscopic behavior and functionality. Examples of mesoscale successes, challenges and opportunities will be described.

DOE Mesoscale Science Report: http://science.energy.gov/~/media/bes/pdf/reports/files/OFMS_rpt.pdf

M.E.L. OAKES UNDERGRADUATE LECTURE SERIES

Wednesday, Oct 2, 2013, at 7:00 p.m.

University of Texas Student Activity Center: SAC-rooms 2.410-2.412

Energy: the Next 50 Years

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Energy is a basic foundation of human society, like food, shelter, communication and mobility. A new international energy landscape is emerging as developing countries create their energy infrastructures and as energy technologies move away from fossil toward more sustainable sources and uses. The fifty-year time scale for significant change to this energy landscape implies that the strategic research and development choices we make now will determine future energy and societal outcomes. This talk will present promising science and technology development opportunities that will promote vibrant, interactive and rapidly advancing national and global societies in fifty years.