Invites you to a seminar by

**Dr. Michael Pettes**  
Assistant Professor  
Department of Mechanical Engineering  
University of Connecticut

**Friday, February 13, 2015**  
Institute of Materials Science Building, Room 20, at 9:05 a.m.  
Refreshments will be served at 8:45 a.m.

**“Thermal Transport in Low-Dimensional Materials”**

**Abstract:** As we enter a new era of ultra-scaled electronic device architectures driven by the requirement for increased power with smaller size, power consumption and cost, knowledge of carrier transport phenomena in low dimensional systems is required as behavior in nanostructured materials is inherently different than in traditional systems. Additionally, engineering of materials at the nanoscale to take advantage of non-traditionally paired properties, such as light weight and high conductivity, can offer radical solutions to current energy management limitations in addition to the transformation of numerous technological fields. In this talk I will discuss our recent experimental investigations of nanomaterial systems near the extremes of the thermal conductivity spectrum and how knowledge of fundamental transport mechanisms can enable design of materials with targeted thermal properties.

**Bio:** Michael Pettes earned his B.S. in Mechanical Engineering from Duke University in 2001, and his M.S. and Ph.D. in Mechanical Engineering from the University of Texas at Austin in 2007 and 2011, respectively, and joined the University of Connecticut in 2013 as an Assistant Professor in the Department of Mechanical Engineering. Among his scholarly honors, he received the Donald D. and Sybil B. Harrington Doctoral Fellowship at the University of Texas at Austin in 2005 and National Science Foundation Graduate Research Fellowship in 2006. His predominantly experimental research falls into the following areas: (1) multiproperty measurements on individual nanomaterials; (2) carrier transport mechanisms in novel material classes; (3) mesoporous networks for thermoelectric energy conversion. [http://pettes.engr.uconn.edu](http://pettes.engr.uconn.edu)

This seminar is mandatory for ALL MSE Full-time Graduate Students.