Invites you to a seminar by

**Dr. Raju Namburu**
Computational Sciences Division
U.S. Army Research Laboratory

**Friday, March 14, 2014**
Institute of Materials Science Building, Room 20, at 11:15 a.m.
Refreshments will be served at 11:00 a.m.

**Advances in Computational Sciences and Engineering**

**Abstract:** Computational sciences and engineering is now an indispensable field to the solution of complex interdisciplinary problems from traditional science and engineering domains to such key areas as data science, national security, etc. Recent advances in high-performance computers and networking have made it possible to develop and analyze very large-scale computational models that were previously deemed intractable. However, formidable challenges stand in the way of progress in this research for solving large-scale practical applications. These challenges include robust exascale and heterogeneous computers, scalable algorithms for multi-scale and multi-physics modeling, live-virtual simulations, data intensive sciences, predictive simulation sciences, model validation and verification, model uncertainty quantification, and visualization. This talk will discuss recent advances to address some of these research challenges for large-scale applications, namely, scalable algorithms for multi-scale material modeling, scalable computing environments for multi-physics and interdisciplinary modeling and live-virtual and data intensive simulations.

**Bio:** Dr. Raju Namburu is an internationally recognized expert in computational sciences and Chief of the Computational Sciences Division, Computational and Information Sciences Directorate at the US Army Research Laboratory (ARL) where he is also the Director for ARL’s DoD Supercomputing Resource Center. Dr. Namburu is the founding Director for the Mobile Network Modeling Institute, and Cooperative Agreement Manager for the Army High Performance Computing Research Center. ARL’s Computational Sciences Division conducts basic and applied research in computer science, computational science, and applied mathematics. Dr. Namburu joined ARL in 1999 and was one of the key architects in establishing the computational sciences research program at ARL. Dr. Namburu has more than 100 publications in various journals and refereed papers in international conferences and symposiums in the areas of computational sciences, computational mechanics, scalable algorithms, network modeling and high performance computing. His awards include the Department of the Army Superior Civil Service Award; Army Research Development and Achievement Award 1997, 2001, 2009; and the Army Science best paper awards at the 1998, 2000, and 2002 Army Science Conference. Dr. Namburu is also a Fellow of ASME as well as a member of USACM, and IACM. Dr. Raju Namburu received his Ph.D. in Mechanical Engineering from the University of Minnesota. His research and development activities include computational sciences, computational mechanics, interdisciplinary thermal-structural-fluid applications, computational electro-magnetics, network modeling, multi-scale computational methods, and high performance computing.

This seminar is mandatory for ALL MSE Graduate Students.