2008-2009

Graduate Seminar Series

The Department of
Mechanical Engineering – Engineering Mechanics

Proudly Presents

Professor Marc S. Ingber

National Science Foundation

Dr. Ingber received his Ph.D. in Applied Mechanics from the University of Michigan. He has 22 years of academic experience at Iowa State University and the University of New Mexico. At the University of New Mexico, Dr. Ingber has served as the Chair of the Mechanical Engineering Department and Director of the Center for High Performance Computing. He is currently serving as program director of the Particulate and Multiphase Processes program within the Engineering Directorate at the National Science Foundation. His research interests include multiphase flows, materials processing and properties, numerical methods, and high-end computing.

Thursday, October 30, 2008 3:00 – 4:00 p.m. Room 112, ME-EM Bldg.

Multiscale Modeling of Suspension Flows

The analysis of particles suspended in nonlinear, viscous shear flows is playing an increasingly important and often critical role in a number of developing technologies including composite and ceramic processing, encapsulation of electronic components, secondary oil recovery by hydraulic fracturing, carbon-dioxide sequestration, and the transport of sediments, contaminants, and slurries, to name a few. A common outstanding fundamental research issue associated with the technologies listed above is the development of the relationship between microstructural interactions and macroscopic behavior. Linking recent progress in molecular- and nano-scale science to progress in the ability to accurately model suspension flows at the macroscale is an important scientific challenge. A multidisciplinary research program including experiment, analysis, and high-performance computing has been undertaken with the end goal of developing a reliable rheological model to allow engineers and scientists to design efficient processes for this important class of problems.

Funding for the ME-EM Graduate Seminar Series is provided by Professional Plating, Inc. of Anoka, MN www.proplate.com
and the Department of Mechanical Engineering – Engineering Mechanics www.me.mtu.edu/seminar