The Summer School for Integrated Computational Materials Education

July 18-29, 2011 **Ann Arbor, MI, USA**

The primary purpose of the Summer School for Integrated Computational Materials Education is to "educate the educator" in order to enable rapid implementation of computational tools into undergraduate materials science and engineering curriculum around the world. This program will allow participants to return to their home institutions with the knowledge, skills, and materials to incorporate computational materials science and engineering (CMSE) in thermodynamics and kinetics courses. The Summer School curriculum will also include an overview of CSME applications, the fundamental theory and advanced topics, as well as training for teaching the modules to undergraduate students. Faculty, postgraduate researchers, and graduate students from MSE departments and programs in the U.S. and around the world, with or without computational experience, are gladly welcomed to participate in this innovative program, located in beautiful Ann Arbor, MI.

Questions? Please email *icmed2011@umich.edu* and Angela Milliken at *mctp@umich.edu*

How to Apply:

◊ Fill out the interest survey at https://www.engin.umich.edu/form/icmedinterestsurvey to receive an application

◊ See http://www.umich.edu/~mctp/SciPrgPgs/events/2011/SS11/ for more information.

◊ Priority will be given to applicants whose home department endorse the participation and commit to implement the short modules into their required courses and perform surveys of undergraduate students before and after the module. Financial aid is available to those at US institutions.

Instructors and Organizers

*Katsuyo Thornton, University Of Michigan, USA
*Mark Asta, UC Berkeley, USA
*Edwin Garcia, Purdue University, USA

John Allison, University Of Michigan, USA
Laura Bartolo, Kent State University, USA
Jon Guyer, NIST
Paul Mason, Thermo-Calc Software Inc.
Anton Van der Ven, University Of Michigan, USA

*denotes organizers

Topics Include:

- A Crash Course on Computational Materials Science and Engineering
  - Ab initio calculations
  - Finite-difference method
  - Phase-field and smoothed boundary methods
  - The finite element method
  - Computational thermodynamics
  - Integrated Computational Materials Engineering
- Module on Computational Thermodynamics
- Module on Kinetics (Phase Field Modeling)
- Module on Integration
- An Independent Session on Simulation-Based Research