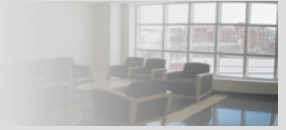




# Center for Scientific Computation And Mathematical Modeling

University of Maryland, College Park



## *A Program Announcement*

### “Nonequilibrium Interface Dynamics: Theory and Simulation from Atomistic to Continuum Scales”

**April 23 - 27, 2007**

**Organizers: Theodore L. Einstein, Robert Kohn, Dionisios Margetis, Eitan Tadmor, Ellen Williams**

## INVITED PARTICIPANTS

**Norman Bartelt** - Sandia National Laboratories  
**Russel Caflisch** - UC, Los Angeles  
**Theodore L. Einstein** - University of Maryland  
**Jonah Erlebacher** - Johns Hopkins University  
**James Hannon** - IBM T. J. Watson Research Center  
**Jingfang Huang** - University of North Carolina  
**Alain Karma** - Northeastern University  
**Robert Kohn** - New York University  
**Robert Kukta** - State University of New York  
**Bo Li** - University of California, San Diego  
**Teng Li** - University of Maryland  
**Dionisios Margetis** - University of Maryland  
**Chaouqi Misbah** - Université J. Fourier Grenoble I  
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**Christian Ratsch** - UC, Los Angeles  
**Vivek Shenoy** - Brown University  
**Peter Smereka** - University of Michigan  
**Brian Spencer** - University at Buffalo  
**Koichi Sudoh** - Osaka University  
**Axel Voigt** - Caesar Research Center  
**Peter Voorhees** - Northwestern University  
**John Weeks** - University of Maryland  
**Ellen Williams** - University of Maryland  
**Zhenyu Zhang** - Oak Ridge National Lab  
**F.-J. Meyer zu Heringdorf** - Univ. Duisburg-Essen

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## SCIENTIFIC BACKGROUND

The scientific understanding of nonequilibrium surface and interface dynamics in crystalline materials has become increasingly important. The past few years have witnessed the important role of applied mathematics in research on surface dynamics. Contributions from applied mathematics include rigorous derivation of analytical models, multiscale analysis, model reduction, the design of numerical techniques for very large systems etc. It is clear that this trend will continue. Precise mathematical concepts, quantitative mathematical theories, and innovative simulation techniques should continue to be developed for interfacial and surface properties in complex systems.

At the same time experimental techniques become more advanced. The motion of small defects can now be monitored quite precisely. The role of such defects in the macroscopic evolution of surfaces and interfaces can be demonstrated in the laboratory setting.

This program will bring together leading physicists, materials scientists, computational scientists, and applied mathematicians to: review the recent developments in research on materials surfaces and interfaces, from experimental highlights to theory to simulation; identify critical scientific issues in the understanding of the fundamental principles and basic mechanisms of interface and surface dynamics in crystalline systems far from equilibrium; accelerate the interaction of applied mathematics with physics and materials science, and promote highly interdisciplinary research on new materials interface and surface problems with emerging novel applications; develop and foster international collaborations; and initiate the training of research task force for the grand challenge in nanoscience.

This is the second CSCAMM workshop on this topic, following our Fall 2003 meeting.

Center for Scientific Computation  
And Mathematical Modeling (CSCAMM)  
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