

Registration Information

We are requesting a \$5 donation per person to help defray the cost of the breakfast and lunch that will be provided at the conference. To register before the day of the conference, please send the name of the conference attendee and their university affiliation along with a check made out to the "University of Colorado" (also write "donation to APPM" on the check) to:

**Undergraduate SIAM Student Chapter
Department of Applied Mathematics
526 UCB
University of Colorado at Boulder
Boulder, CO 80309-0526**

If your university has multiple attendees please feel free to submit one check with the registration fees along with a list of the attendees. We strongly encourage registering before the conference date. Registration will also be available the day of the conference.

Call for Presentations

All students (both undergraduate and graduate) are invited to submit abstracts on any research topic in Applied Mathematics. Abstracts should include:

- Title of work to be presented,
- Author's name,
- The university the author is currently attending,
- Names of any advisors or other collaborators,
- An extended description of the research to be presented (of length no greater than 500 words).

Talks: Presentation slots are available for 25 minutes (20 minute talk followed by 5 minutes for questions and set-up of the next speaker).

The abstract submission is **Monday, February 25th, 2008.**

Please send abstracts in any appropriate format (PDF, text file, word doc, etc.) to: FRAMSC.abstracts@gmail.com

SIAM

Society for Industrial and Applied Mathematics

4th Front Range Applied Mathematics Student Conference

**University of Colorado at
Denver**

**SATURDAY
MARCH 1ST, 2008**

**SPONSORS:
SIAM STUDENT CHAPTERS AT**

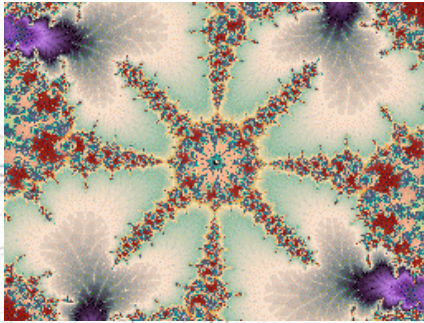
University of Colorado, Boulder
University of Colorado, Colorado Springs
University of Colorado, Denver



University of Colorado at Denver
and Health Sciences Center
Downtown Denver

About the conference

The Front Range SIAM Student Chapters are sponsoring the 4th Annual Applied Mathematics Regional Student Conference. This event will allow students from all universities along the Front Range to learn about new developments in Applied Mathematics and promote interest in the field. Additionally, this event is open to both undergraduates and graduate students.



SIAM Student Chapters

Several universities in Colorado host active SIAM Student chapters, with the mission to promote applied mathematics and computational science and to encourage young mathematicians to pursue these fields. Student chapters provide opportunities to share ideas, learn about careers in applied and computational mathematics, and develop networks with faculty and fellow students.

Schedule of Events

The conference is scheduled for Saturday, March 1st, 2008, between 8:30am and 3pm. Events will include a plenary address, parallel paper presentations and a poster session.

Schedule:

8:30-9am	Registration and Breakfast
9-11am	Parallel Sessions
11-11:15am	Break
11:15-12:15pm	Plenary Address
12:15-1pm	Lunch
1-3pm	Parallel Sessions

Contact Information

University of Colorado-Boulder:
Christian Ketelsen, SIAM Chapter President,
christian.ketelsen@colorado.edu

University of Colorado-Colorado Springs
Dr. Seung Son, SIAM Faculty Advisor,
sson@uccs.edu

University of Colorado-Denver
Dr. Lynn Bennethum, SIAM Faculty Advisor,
Lynn.Bennethum@cudenver.edu

Conference Web site:
<http://amath.colorado.edu/siam/conference/>

Plenary Speaker

Dr. Harry L. Swinney
Center for Nonlinear Dynamics
University of Texas at Austin



Emergence of Spatial Patterns in Physical, Chemical, and Biological Systems

We consider macroscopic systems driven away from thermodynamic equilibrium by an imposed gradient, for example, a gradient in temperature, velocity, or concentration. The equation of motion for such systems is generally a nonlinear partial differential equation for the fields (e.g., temperature, velocity, and/or concentration field). For a sufficiently small imposed gradient, these fields will have the same symmetry as the system geometry; this solution is called the base state. We will consider the general principles for the loss of stability of the base state and the formation of ordered spatial patterns. For strong forcing, the patterns can become chaotic or even turbulent, yet some order often persists. The general principles of pattern formation will be illustrated with examples from physics, chemistry, and biology.