

MSCS



Mess

Department of Mathematics, Statistics and Computer Science
St. Olaf College
Northfield, MN 55057

April 18th, 2008
Volume 36, No 21

Dynamic Geometry Week at St. Olaf Tuesday, April 22

Title: **Dynamic geometry in three dimensions also a demonstration of the new Cabri 3D software for doing dynamic geometry in three dimensions**

Presenter: Jean-Marie Laborde

Date: Tuesday April 22nd

Time: 1:30pm,

Location: SC 282 (see advertisement)

In addition to Jean-Marie Laborde's Colloquium on April 22 and the ceremony awarding him an honorary degree from St. Olaf on April 24. Two more events at St. Olaf will address the topic of dynamic geometry. If you are interested in seeing dynamic geometry as it can be used in teaching mathematics, save room in your schedule for one or both of the following events:

Title: **Linking Geometry and Algebra or Calculus through Dynamic Geometry**

Presenter: Colette Laborde

Date: Tuesday April 22nd

Time: 4:00pm (Snacks at 3:30)

Location: SC 282

HONORARY DEGREE CONVOCATION

JEAN-MARIE LABORDE

Dynamic Geometry Pioneer

Mathematics, Computer Science
and Statistics Colloquium
Tuesday, April 22, 1:30 p.m.
Science Center, Room 282

Honorary Degree Convocation
Thursday, April 24, 11 a.m.
Boc Memorial Chapel



Abstract: The notion of variation and of variable is essential in mathematics. Most of the mathematical objects are variable objects depending themselves on one or several variable objects. One of the novelties of dynamic geometry lies in the mediation of the notions of variable object and of variation through dynamic manipulable representations of objects. Therefore dynamic geometry is not only useful for representing the generality of geometric objects but also concepts involved in precalculus and calculus like functions and variables. By mediating those abstract concepts through dynamic phenomena, it may thus help students to construct a meaning to those concepts. Dynamic geometry also helps students gain flexibility between geometry and algebra or calculus by enabling them to construct multiple linked representations of the same problem and thus enlarging their visual experience of algebraic and numerical properties. Some examples for high school students about the notions of function and graph of function will be given as well as an example about the notion of differential equation.

Bio: Colette Laborde is a member of the Informatics Laboratory at the Applied Mathematics and Computer Science Institute in Grenoble, France. Professor Laborde is one of the leading French mathematics educators and is an international authority on the use of technology for teaching and learning mathematics. She is known for her research on issues relating to using technology (1) to teach mathematics, (2) to link algebra and geometry, and (3) to create learning scenarios for students to better understand mathematics concepts.

Some local mathematics teachers and Ole grads who are teaching mathematics are coming to this talk. If you are considering the possibility of teaching mathematics, come early to mingle (over food, of course) with these teachers.

Thursday, April 24

8:00-9:20 am: Students interested in *teaching mathematics* are invited to join the Methods of Teaching Mathematics class as Colette Laborde leads us in mathematical explorations using Cabri Geometry. Come to the AMCL computer lab. Sorry, no snacks this time!

Cabri 3D

To view and experiment with this exciting software visit <http://www.cabri.com> and select "Discover Cabri 3D interactive gallery <<http://gallery.cabri.com/en/>>" from the left column.

National Conference on Undergraduate Research

Last week, eight students from the CIR traveled to Maryland for the National Conference on Undergraduate Research at Salisbury University. They presented three statistical research projects: "Adolescents Develop Tolerance to the Sedating Effects of Alcohol More Rapidly than Adult Mice" (Patrick Luthly '08, Shannon Thornblad '08, Brad Wagenaar '08), "Are Biofuels Starving the Developing World?" (Abby Lane '08, David Swanson '08), and "Migrant Health in Southeast Iowa" (Nicole Novak '08, Angela Ulrich '09, Aurora Vincent '09). This was the first large research conference for many of the attendees, and they were able to exchange research experiences with undergraduates from across the country. In addition to attending the conference, they enjoyed walks on the beach, eating crab cakes, and visiting one of Maryland's ubiquitous Candy Kitchens.

MICS Trip Rewarding for CS Students

Eight CS students traveled to the annual Midwest Instruction and Computing Symposium (MICS) at the University of Wisconsin-LaCrosse last week (April 11-12), together with Professors Dick Brown and Olaf Hall-Holt. Altogether, the ten people presented eight papers and one panel discussion! Ole student paper topics included applications of CS to environmental science, biology, neuroscience, and mathematics, plus Beowulf cluster parallel computing and Palantir image recognition. Thomas McConville's paper "How to Lose at Nim" won an award as a best student paper in the conference, a first for St. Olaf. Also, while six of the students participated in the programming contest, the other two students, Daniel Edwins and Spencer Debenport, created the winning poster "Playful Visualizations" for the first CCC poster contest, by envisioning more intuitive user interfaces for exploring extremely large data sets in the future. Several of us saw a fascinating demo of high-performance 3D graphics applied to medical visualization. Other student participants: Todd Frederick, Bjorn Paulson, Luke Schlather, Tony Waldschmidt, Daniel Wiebe. Through everyone's contributions, St. Olaf made a big impression at MICS 08.

New Professors

The MSCS department is delighted to introduce three new full-time faculty members. Their full time duties will begin in the fall. When you meet them, please welcome them to the department.

Jason Gower: Dr. Gower received B.A. and B.Sc. degrees from Truman State University in Missouri, moving to Purdue University where he received an M.Sc. and Ph.D. in mathematics. He comes to us from the University of Minnesota's Institute for Mathematics and its Applications. His teaching will be primarily in the mathematics program.

Sharon Lane-Getaz: Dr. Lane-Getaz earned her B.A. at Trenton State College in New Jersey, an M.A. degree from Hamline University and finished her formal academic work with a Ph.D. from the University of Minnesota--Twin Cities. Before

beginning her career in mathematics and statistics education, Dr. Lane-Getaz spent 18 years with IBM, working in its Global Services operation, rising to the level of Senior Project Manager. Her teaching will be split between statistics in MSCS and courses in the Education Department.

Alexander Woo: Dr. Woo earned his B.A. at Williams College in Massachusetts, with majors in both mathematics and music. (Great news for the MSCS recital next year!) His Ph.D. was earned at the University of California at Berkeley. He comes to us from a Visiting Assistant Professor position at the University of California at Davis. His teaching will be focused in the mathematics program.

Employment Opportunity

The Math Department at Shattuck-St. Mary's school in Faribault, MN is seeking a full time instructor to teach Geometry and a variety of Algebra Courses starting in 2008-09. Teaching certification is not required. Residential Life and co-curricular duties will be assigned in addition to classroom responsibilities.

Shattuck-St. Mary's School (<http://www.s-sm.org>) is an independent, college preparatory, boarding/day school with 415 students in grades 6-12. Our students come to Shattuck-St. Mary's school from 34 states and 22 countries. We have specialized programs referred to as Centers of Excellence. Students come specifically to participate in our Pre-Conservatory Strings Center of Excellence. Further, we have approximately 160 students involved in the Hockey Center of Excellence.

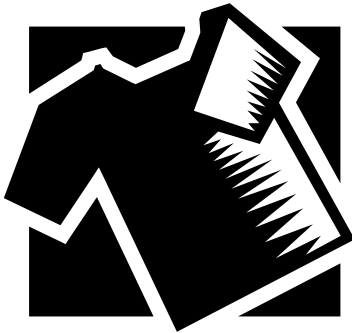
Our Boys Prep Hockey team recently won the 2008 USA Hockey National Tournament (U18 Midget Tier I) held in Buffalo, NY. We also have approximately 100 students involved in our Soccer Center of Excellence. Approximately 15 students are involved in our Figure Skating Center of Excellence program. An additional 100 students are attending SSM from a variety of international countries and have come to work on English as a Second Language (ESL); many of these students are from Asian countries.

If you are interested in applying, please email your resume and reference information to Carol Sadjadi at csadjadi@s-sm.org. For more information contact her at (507) 333-1500.

Martha Wallace, Rich Allen, and Kay Smith have children who attended Shattuck, so you can talk to them for more information about the school.

T-shirts for Sale!

As many of you have noticed, t-shirts are in. We will be selling all week during chapel time. If you plan to purchase a shirt please do so as soon as possible! We will sell out of sizes fairly quickly. There are two styles- both are \$10 or 2 for \$9.



Solution to Problem of the Week

From April 4: Each of the letters {D,E,M,N,O,R,S,Y} is to be replaced with a base-10 digit {0,1,2,3,4,5,6,7,8,9} to make the following addition correct.

$$\text{SEND} + \text{MORE} = \text{MONEY}$$

Submitted by Bjorn Paulson, who also found the intended solution $9567 + 1085 = 10652$.

A brute-force computer strategy also found some 20-odd solutions with $m=0$.

Joke of the week

An engineer thinks that his equations are an approximation to reality. A physicist thinks reality is an approximation to his equations. A mathematician doesn't care.

Recruiting Events

Two separate recruiting events for students interested in graduate studies at the University of Minnesota

- Mechanical Engineering on May 1 (see below)
- Industrial and Systems Engineering on May 8

Contact: John K. Gardner
Mechanical Engineering Department, University of Minnesota
jgardner@me.umn.edu

Department Web Page: <http://www.me.umn.edu>

Juniors: thinking about Graduate School in mechanical engineering?



Come learn about the:

**University of Minnesota
graduate program in ME**

**Thursday, May 1, 4:00-5:30 pm
ME Dept., 111 Church St SE, Mpls
Room ME 1130**

Why should I consider a graduate degree in ME?

How do I obtain financial support?

How do I apply?

Free pizza and beverages!



RSVP by Apr 25 to John Gardner, jgardner@me.umn.edu

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If you would like to submit an article or math event to be published in the Math Mess, e-mail tummers@stolaf.edu.