

Math



Mess

Department of Mathematics
St. Olaf College
Northfield, MN 55057

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This Week's Mathematics Colloquium

Title: Halving Your Cake (And Eating It Too)

Speakers: Steve Kennedy and Deanna Haunsperger

Time: Tuesday, April 1, 1:30 pm

Place: SC 182

This Week's Colloquium

Problems of fairly dividing an object or a set between a group of people have a long and interesting history in mathematics. It's traditional to frame the problem as the sharing of a cake. Everyone who has ever had a sibling knows the "I cut, you choose" protocol for cake sharing. If you had more than one sibling, then you realize that the problem in this case becomes much harder. ("Grab the whole thing and run" is the favorite solution of Dr. Kennedy's brother). We'll discuss a mathematical approach to "fair" division and prove, once and for all, that Dr. Kennedy's brother wasn't fair!

Steve Kennedy and **Deanna Haunsperger** shared an office in graduate school at Northwestern during which time Deanna, who was studying voting theory, spent a lot of time asking Steve about his research in topological dynamics. After three or four years of this he finally realized she was flirting with him. They left Northwestern for teaching jobs at the

University of Delaware and, a few years later, found themselves teaching at a small Lutheran college in a town whose motto is "Cows, Colleges, and Contentment." They collaborate frequently: they're editors of *Math Horizons*, the MAA magazine for students; together they run the Carleton Summer Math Program for Women; and they frequently use mathematics to settle arguments over cake-sharing between six-year-old Maggie and nine-year-old Sam.

Steve and Deanna firmly believe that every mathematical lecture needs a concrete example. Given the subject of their talk, what example could be more perfect than an actual cake! (We'll let Steve and Deanna do the cutting.) So bring your appetite to SC 182 on Tuesday.

First Annual Senior Banquet

On Wed, May 7 from 6 to 8pm in the Kings Room we will be having the first annual senior math-major banquet! Not too many details are known as of yet, but there definitely will be a short program during which awards will be given out. Details will follow in later issues.

Games Tournament

The 3rd annual St. Olaf Mathematical Games Tournament will commence this week. The games in the tournament are Clobber, Dots-and-Boxes, Snakey, and Y. You can find out more about these games in "Molnar's Mess." Contact **David Molnar** if you are interested in participating in the tournament. Yes, there will be prizes. No, not money.

Putnam Results

The results are in from the 2002 Putnam exam. 3349 students from the US and Canada took this exam in December, including 12 Oles. The median score was 1 out of 120. St. Olaf's team of **Michael Zahniser**, **Jason Saccomano**, and **Jerad Parish** ranked 86th overall, led by Jerad's top-500 finish. **Mark Schmelzle**, **Matt Handley**, and **Scott Harris** also ranked in the top 1000, and **Adam McDougall** and **Kyle Manley** each scored at or above the median. Very nice performances, and a big thank you to everyone who participated.

A Warm Welcome

Last week the Math Mess introduced you to **Paul Roback**, one of the new tenure-track hires who will start teaching next fall. This week we bring you a short bio about the other new instructor, **Amelia Taylor**.

Amelia grew up in Colorado, went to St. Olaf as an undergraduate, and received her Ph.D. from the University of Kansas. She is currently a VIGRE Postdoc at Rutgers University, where she is doing research in computational commutative algebra. When Amelia is not doing mathematics, she plays ultimate frisbee for New Jersey's Electric Mayhem and enjoys skiing.

Summer Math Courses

Professor Matthew Bloss will be instructing math courses during the month of June. The proposed offerings include Calculus I and II,

Linear Algebra, and ERA. Please contact **Professor Bloss** (bloss@stolaf.edu) for more information.

Math Recital

Remember the math recital is coming up soon: Wednesday, April 16, in Ytterboe lounge at 7:00pm. Contact **Professor McKelvey** (mckelvey@stolaf.edu) for more info or to sign-up for a performance.

Last Week's Problem

The well-intentioned but lazy philatelists of blagojevich produce only two denominations of stamps, a and b. As luck would have it, there are combinations of these two denominations totaling any integer quantity C or greater, but not C-1. Is it possible that C is 73?

The answer to last week's question is no. Coincidentally, this is also the answer to the question, "did anyone submit a solution?" Such a C always exists when a and b are relatively prime, and will be a function of a and b in this case. Why can't C be 73?

Problem of the Week

One problem on the 2002 Putnam exam was to prove that if five points are placed on the surface of a sphere, there must be four which lie in the same (closed) hemisphere. In a similar vein, how many points would be necessary to ensure that five lie in the same hemisphere?

** Please submit all solutions to **David Molnar** (molnar@stolaf.edu) by noon on Sunday.

If you would like to receive a copy of the Math Mess in your P.O. Box weekly, please e-mail **Donna Brakke** at brakke@stolaf.edu.

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