St. Olaf Mathematics Department

Math Mess

Department of Mathematics
St. Olaf College
Northfield, MN 55057

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This Week's Mathematics Colloquium

Title: Mike Wallace, Brain Cancer & Change-point Models
Speaker: Julie Legler
Time: Thursday, Nov 29th, 2 p.m.
Place: SC 186

This Week's Colloquium

Many have the mistaken impression that mathematicians and statisticians work in isolation, apart from the rest of the world. Come along on this odyssey as a statisticians's work becomes irrevocably entangled with a large and varied cast of characters. Along the way, a brief introduction to brain cancer trends and permustion-based change-point models will be presented. This talk should underscore the importance of inter-disciplinary education and provide inspiration for those who are looking forward to a wide range of experiences after graduation.

Julie Legler is one of the newer members of the Mathematics Department. You heard a lot about her last week, but we'll give you a little refresher…

Professor Legler grew up in St. Paul, MN and attended the University of MN-St. Paul where she received her B.Z. and Masters in Statistics. She received her doctorate in Biostatistics at Harvard.

Here at St. Olaf, Professor Legler is teaching Stats 100, Probability Theory, Mathematical Statistics and will be teaching the Math Practicum this Interim.

Career Website

For those of you who couldn't make it to the "To Be or Not To Be" program or are looking for more information on careers in mathematics, Purdue University has a great website to check out. There is information on what you can do with a math degree, links to on-line resources to help

you find a job in mathematics plus information and FAQs about graduate schools. Go and take a look around:
http://www.math.purdue.edu/jpbs/careerInfo/

Problem Solving Contest Results

The results are in from the 5th annual North Central section team contest, which took place on November 10th. Sixty four teams from the region participated, including four from St, Olaf: Jason Saccomano, Mike Watercott, and Mike Schmelzle; Matt Handley, Paul Tlucek, and Jonathan Kuipers; Jerad Parish, Soren Strom-Jensen, and Nathan Hubbell; and Kari Andersen, Laura Eckstein, and Alison Newgard. Jason, Mike and Mark's score of 60 out of 100 teid them for 16th place; they and the other teams finishing in the top third will be honored in an upcoming issue of the Section's newsletter. All participants receive certificates.

Programming Contest

Folks who are curious about Attacking Queens in three or four dimensions now have an outlet through which to express themselves: a programming contest with actual cash prizes! See the following website for details:
http://members.aol.com/DrMWEcker/Contest.html

Last Week's Solution

Last week's problem: What is the maximum number of pieces into which a banana can be divided with ten straight cuts? The pieces may not be moved in between cuts. [Note: this is a mathematical banana. So, pieces can be arbitrarily small, and the curvature means something. Start with a two-dimensional version of the problem, a crescent moon. The answer to the banana problem should be more, just as the maximum number of pieces into which an orange can be cut is more than for a pizza.]

Solution: 66 This is, interestingly enough, the answer for the cresent moon problem, not the banana, but it is rather common in this context to find the correct answer to a different problem -just ask anyone who took Discrete last Spring. **Stefan Theimer** and **Chris Brav** both (unwittingly) solved the cresent moon problem. Stefan utilized an interesting Pascal-like triangle, which might have worked for the banana, if only it were a tetraherdron.The actual maximum number of pieces into which a banana can be sliced with ten cuts is...more than 66.

Problem of the Week

This week's problem is a variation of the well-known **Buffon Needle Problem**. A square of diagonal 2 in. is dropped onto a floor made up of 2 in. wide boards. Assuming all orientations of the square are equally likely, what is the probability that the square lands on a crack? (Equivalently, that it crosses one of the lines x=0, x=2, x=4, ...)

*** Please submit all solutions to Cliff Corzatt (corzatt@stolaf.edu) by noon on Friday.

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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