

Math Mess

Department of Mathematics
St. Olaf College
Northfield, MN 55057

April 5, 2004
Volume 32, No. 17

This Week's Mathematics Colloquium

Title: Investigating Effects of Texture on 3d Shape Perception

Speaker: Sunny Kim

Time: Tuesday, April 6th, 7:00 pm – refreshments follow; note the evening time

Place: SC 182

This Week's Colloquium

One key objective in visualization research is to design and implement algorithms that effectively communicate scientific data so that essential features of the data can be understood intuitively and accurately. As the volume of available information expands, it becomes more difficult to extract meaningful patterns from the data in its raw format. Effective visualization techniques construct a representation of the data that highlights important patterns that may not be readily apparent otherwise.

The speaker will discuss the effects of surface texture on the perception of three-dimensional shape. She will describe experimental results from a series of user studies that seek to identify and explain the characteristics of texture patterns that facilitate shape perception of three dimensional objects.

Sunny Kim is a Ph.D. candidate in the Department of Computer Science and Engineering at the University of Minnesota. She will be joining the Department of Computer Science at Gettysburg College, Gettysburg, Pennsylvania in fall 2004 as an assistant professor. She received her M.S. in Computer and Information Science from the University of Minnesota in 1999 and a her B.S. in Computer Science from the University of Utah in 1996. Her research interests include shape perception, visualization, computer vision, and human computer interaction.

Math Dept T-Shirt Contest

Do you have a cool idea for this year's math department t-shirt? Something quirky or funny and, most importantly, mathy? If so, you should participate in this year's t-shirt design contest by submitting your design (either on paper or electronically) to Donna Brakke in the math department office or to Sara at krohn@stolaf.edu. Designs are due this Wednesday (April 7) and will

be put to an on-line vote. Exercise your right as a math student to wear funny shirts - send in your ideas now!!

Math Recital Approaching

This spring's Math Recital is just around the corner. Here are the details:

- What:* The N-th Annual Mathematics Recital
Who: All Friends of the Mathematics Department
Where: Ytterboe Lounge
When: Wednesday, April 21st from 7:00pm until 9:00pm
Why: A chance to eat together, play together and laugh together.

The Math Recital is an annual tradition in the mathematics department. Calling it a mere "talent show" fails to do it justice. The recital is a chance for any friend of the department to share his or her instrumental, vocal, thespian or other talent with the rest of their mathematical friends and colleagues. Good food is provided by the faculty. Good taste is provided by the students. The evening is a relaxed chance to gather and enjoy a wide variety of performances.

Please consider performing as an individual or part of a group. Steve McKelvey is keeping the official play list, so please let him know (in person or by phone, x3421, or email) what you would like to present. The sooner you let him know, the more likely it is there will be a place on the program for you.

Return To Budapest

The Office of Off Campus and International Studies and the Department of Mathematics have approved the establishment of an internship in Budapest during January 2005. The internship will be available to any student who has previously studied in Budapest (BSM or the Interim). If you

are at all interested in this opportunity please contact Cliff Corzatt.

New Memberships

The Math Department awarded memberships to students in the following organizations.

Mathematical Association of America

Nicole Bohme	Jimmy Randolph
Matt Handley	Dan Sinykin
Mark Kingsbury	Dan Visscher
Michelle Laberge	Emily Weininger
Noah Loomer	Michael Zahniser
Nick Maryns	

American Mathematical Society

Janine Dahl	Adam McDougall
Anna Ericksen	Jason Saccomano
Meredith Johnson	Heather Wiste
Nick Maryns	

Association for Women in Mathematics

Lauren Benson	Elizabeth Johnson
Erin Bengston	Pam Kaercher
Lori Blomquist	Sara Krohn
Lindsay Boetcher	Julie Molony
Tricia Foster	Pokie Speare
Sarah Gilles	Barbara Thull
Kristen Herreid	Elizabeth White

Math Games Tournament

The Math Games Tournament is underway, with over 25 participants so far. Joe Anderson is the top Clobber player with a record of 8-1; Marit Hagen tops the Domineering standings at 8-2; Matthias Hunt is the Zertz leader at 7-1, and nobody has yet won more than three games of Unlur or Sprouts, although Robert Crawford has won three of each. Details about all of the games can be found at <http://www.stolaf.edu/people/molnar/games/tournament/>. The

tournament will continue Tuesday evening after colloquium, and Thursday during community time (11:30-12:40?), in some room. Stop by and test your skill against some of the hottest math-gamers in Rice County!

Last Week's Problem

Looking into my crystal ball, I see successful, if slightly unusual, seasons from Twins Corey Koskie and Doug Mientkiewicz in 2004. Corey will have a slugging average of .600, which is not Barry Bonds, but it's pretty good. Corey will slug .533 before the All-Star break (160 total bases in 300 at-bats). After the break, he has 140 total bases in only 200 at-bats. I'm cloudy on the reduced playing time, possibly an exploding milk bottle accident. I can foresee less about Doug - he also has a total of 500 at-bats, and his slugging average is less than Corey's both before the break and after the break, but in neither time period is his slugging percentage zero. Based on this information only, what is the highest possible slugging percentage Doug could have in 2004?

This problem brought some new solvers out of the woodwork, including **Jake Leibold '07, Michael Cook '94, Torii Hunter, Al Newman, and Trog**. Trog solve problem with Excel. Since Doug's slugging percentage cannot exceed Corey's in either time period, in order to maximize his overall slugging percentage, he should have as many of his at-bats as possible in the time period when Corey's percentage is higher, namely after the break. So, if Doug has one base in 2 ABs before the break, and 348 total bases in 498 ABs after the break, his overall slugging percentage will be $349/500 = .698$, higher than Corey's even though Corey was better before the break and after it! Trog point out that this example of Simpson's Paradox, which also come up in statistics. (see <http://www.cut-the-knot.org/blue/Mediant.shtml#simpson>)

Problem of the Week

This week's problem is stolen, I mean borrowed, from Macalester's Problem of the Week, which has a webpage at <http://mathforum.com/wagon/> You are served a plate containing 100 spaghetti noodles. You randomly grab two ends from the pile and tie them together. (I checked; the spaghetti is cooked.) Then you repeat this process until there are no ends left. What is the expected number of loops at the end? "Expected value" here means the average over all possible outcomes.

If you want to get the Mess problems ahead of time, they will be sent out on Thursdays on Molnar's math-probsolv email alias. Let him know if you would like to be added to the alias.

*** Please submit all solutions by Thursday at noon to David Molnar by e-mail (molnar@stolaf.edu) or by placing them in his box at OMH 201.

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.

Editor-in-Chief:	Matthew Bloss
Associate Editor:	Nicholas Maryns
MM Czar:	Donna Brakke
Problem Guy:	David Molnar
mathmess@stolaf.edu	