MSCS Mess

This Week's Mathematics Colloquium

Title: The Email Ecosystem: A Future History of
Interpersonal Messaging
Speaker: Nathaniel Borenstein
Time: Tuesday, September 21, 1:30 pm
(treats at 1:15)
Place: SC 182

Email is the raw edge of the information revolution in interpersonal communication. It is the oldest network application, and it remains the application people spend the most time using, and the application that everyone loves to hate. And yet, the very meaning and nature of what we call "email" has changed substantially over time, and will surely continue to evolve.

In this talk we consider the ways that email is converging with other communication modalities. This convergence presents great opportunities for conversational flexibility, while raising challenges of modality choice, device interoperability, information integration, and attention management. We describe a vision of how email could evolve into a sophisticated and pervasively cooperative communication environment, serving human needs for flexibility in the timing and modality of digital conversations.
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Kleber-Gery Lecture

Title: Spam and Society: Liberty and Law on
Tomorrow's Internet
Speaker: Nathaniel Borenstein
Time: Tuesday, September 21, 7:00 pm
(treats afterwards)
Place: SC 282

Spam is bad. Pretty much everyone agrees on that, and nearly everyone seems to have a pet solution. But as passionately as we all hate spam, we must take care not to confuse it with far worse crimes. Attacking the spam problem with the full force of the Patriot Act could do far more harm than good. As it turns out, the different approaches to spam control reveal different underlying visions of the future of the Internet.

In this talk, I will discuss the full range of current and proposed approaches to spam control, making note of the political and social consequences of each. Although each approach carries costs and dangers, I will argue for a balanced mix of approaches as the best hope for preserving an Internet that is free but not lawless, culturally diverse, and dependable for commerce.

Kleber-Gery continued

Nathaniel Borenstein is invited to St. Olaf as a Kleber-Gery Lecturer. The Kleber-Gery lectures are a series of lectures sponsored by the departments of Economics and Mathematics, Statistics and Computer Science. Dr. Borenstein is a Distinguished Engineer at IBM and a Professor at the University of Michgan. His undergraduate degree is from Grinnell College, in that state just south of us, and he received his Ph.D. from Carnegie Mellon University. He has been involved in many internet and e-mail innovations over the years, including building the world's first widely-used mulimedia email system, MIME: the internet standard for multimedia data, Metamail: open source software still used on millions of machines, ATOMICMAIL, SAFE-Tcl, and these are just the early years. He has numerous awards and recognitions as well, including being named "a geek's geek" by Salon Magazine, 2001.   ?

NSA Opportunity

THE DIRECTOR'S SUMMER PROGRAM
at
THE NATIONAL SECURITY AGENCY

CRYPTOLOGIC MATHEMATICS FOR
EXCEPTIONAL UNDERGRADUATE
MATHEMATICIANS

******DEADLINE IS 15 OCTOBER******

The Director's Summer Program is the National Security Agency's premier outreach to the nation's most outstanding undergraduate mathematics majors. Each summer two dozen exceptional students collaborate with each other and with NSA mathematicians on problems critical to the intelligence gathering and information assurance missions of the agency. Admission to the 12-week program is highly competitive. Applicants should have a demonstrated superior mathematic al aptitude.

The goals of the Director's Summer Program are to: introduce the future leaders of the U.S. mathematics community to the Agency's mission and share with them the excitement of working on mathematics problems of national importance; provide a deep understanding of the vital role that mathematics plays in enabling the Agency to tackle a diverse set of technical challenges; encourage bright undergraduate mathematics majors to continue their study of mathematics and pursue careers in the mathematical sciences; and, of course, to solve current operational problems.

DSP participants work on a wide range of problems in mathematics, cryptology, and communications technology. These problems often involve applications of abstract algebra, geometry, number theory, probability, statistics, combinatorics, graph theory, algorithms, computer science, and analysis.

For more information about this opportunity, including application details, please visit www.stolaf.edu/depts/math/opportunities/NSA.html
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Problem of the Week

A car rode over an ant on the pavement. The ant stuck to the tire for one revolution and then was deposited back onto the pavement. Assuming that the radius of the tire is one foot, find the length of the curve traveled by the ant between its death and its final resting place.   ?

*** Please submit all solutions by Wednesday at noon to Amelia Taylor by e-mail (ataylor@stolaf.edu) or by placing them in her box at OMH 201.

Book Review

Prime Obsession: Bernard Riemann and the Greatest Unsolved Problem in Mathematics

Review by Professor Matt Richey

You first encountered Bernard Riemann (1826-1866) in Calculus via the Riemann Sum and, perhaps, later in Complex Analysis through the Cauchy-Riemann equations. However, his greatest contribution to mathematics might well have been to leave for future generations the so-called "Riemann Hypothesis", wonderfully described in John Derbyshire's "Prime Obsession: Bernard Riemann and the Greatest Unsolved Problem in Mathematics."

Derbyshire expertly balances a description of Riemann's tragic life (he died at 39 with few friends) against a detailed mathematical saga covering algebra, real and complex analysis, number theory, and a whole lot more. Chapters 0 mod 2 focus on his life and the historical world of 19th century mathematics while Chapters 1 mod 2 delve deeper in the mathematical subtleties of the Riemann Hypothesis. His explanation of how the Riemann Hypothesis (describing the location of the "non-trivial zeroes of the zeta function, a problem from analysis) is connected to the Prime Number Theorem (describing the asymptotic density of prime numbers in the natural numbers, a number theoretic question) is both brilliant and accessible to readers with all sorts of backgrounds. All in all, this is a book to read if one wants to understand what drives mathematicians and mathematics.   ?

***We are encouraging reviews of mathematically themed books. Reviews may be submitted to: loome@stolaf.edu.

MSCS: New Name, Improved Ingredients, but the Same Great Programs

A message from the Chair, Paul Zorn

The St. Olaf Mathematics Department is no more.

Exactly 100 years after first offering a mathematics major---and in its first year of offering a computer science major---the Department has changed its name.   We are now the Department of Mathematics, Statistics, and Computer Science (or MSCS to our friends).

Our new name, although perhaps less punchy than just "Math", better reflects the breadth of what we do, and have been doing for many years.   "MSCS" recognizes explicitly the existence of three thriving programs, distinct from each other but still closely allied. Look for news from all three programs in this Mess.

Fittingly enough, we welcome four new faculty this year, linked to all three areas of our work, and beyond: Olaf Hall-Holt, in computer science; Katherine Crowley, in mathematics; Nicole Hoft, in mathematics, statistics, and biology; and Urmila Malvadkar, in mathematics. Watch this Mess for more news about all of them.
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***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: Paul Roback
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