

MSCS



Mess

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

October 18, 2004
Volume 33, No. 5

To Be or Not To Be...

a Math Major, Statistics Concentrator, or CS Major

Tuesday, October 19

6:00 pm – Pizza – Science Center Lobby

6:30 pm – talk – SC 282

7:30 Root Beer Floats – SC Lobby

It's time for the MSCS department's big event of the year: the celebration of why math, statistics, and computer science should be a part of your life! The annual "To Be or Not To Be" extravaganza is this Tuesday the 19th. Come for the (free) Pizza, stay for the talk, and stay longer for the Root Beer Floats.

Why?

- ?? Find out about a wide variety of careers in math/stats/cs.
- ?? Find out how to put together a major/concentration that is right for you.
- ?? Find out which courses will complement other majors.
- ?? Learn about different parts of the department (stats, cs, and math ed).
- ?? Meet the faculty and staff of the MSCS department.
- ?? Free food!

NCS MAA Contest

The North Central Section (NCS) of the Mathematics Association of America (MAA) sponsors a team contest for schools in Minnesota and surrounding states. The contest is administered locally (so no getting up early to drive anywhere) and will be from 9am to noon on Saturday November 13. Students need to let Amelia Taylor know if they plan to participate by October 25 (ataylor@stolaf.edu). If you don't have a team, don't worry, Amelia will set you up with a great team.

Joint Seminar: Biology, Biomecular Science & MSCS Departments

Title: Statistical Approaches to Data Mining with DNA Chip Technology

Speaker: Dr. Peter Munson

Time: Monday, October 18, 4:00 P.M.
(3:45 p.m. Treats and Conversation Start)

Place: SC278

Math Practicum and You?

Want to tackle a “real” math problem? One that’s challenging and open-ended, yet of great importance to a local business or organization? One that requires creativity and teamwork? One that asks you to apply mathematical, statistical, or computer science knowledge you possess while potentially exploring new territory? Then the Math Practicum (Math 390, offered this coming interim) is for you!

Past projects have been conducted for organizations from Northwest Airlines to Bagel Brothers to the Minnesota Orchestra to the Minnesota Department of Human Services. The mathematical and statistical methods applied have ranged from survival analysis to transportation models to multiple regression to stochastic modeling. Most clients who have participated in the practicum have been extremely impressed by the professional and creative quality of the students’ work, and most students who have participated have cited the practicum as among their most memorable undergraduate experiences.

Fifteen slots are available for the Math Practicum (Math 390) this coming January; priority will be given to seniors, although there may be spaces available for interested juniors. We are in the process of finalizing the three projects for this interim, and it promises to be a really exciting batch! Currently, the tentative list of clients includes a financial services firm, a biostatistics group, and a high tech engineering firm. Interviews for the available slots will begin after Fall Break, so look for future announcements about interview sign-ups. If you have any questions, please contact Professors McKelvey or Roback. Alternatively, seniors Anna Ericksen, Sara Krohn, and Andrea Rau participated in last year’s

practicum, and they’d also be happy to answer any questions.

Evariste Galois



October 25th marks the 193rd birthday of Evariste Galois, mathematician extraordinaire, and founder of the field of abstract algebra known as Galois Theory. Few things went Galois’ way during his brief life. In 1828, he was refused entrance to the Ecole Polytechnique (for allegedly throwing a rag at the examiner). In 1831, while serving prison time for Republican activities, he received a letter of rejection concerning his writing on solutions of equations from Simeon Poisson (of random variable fame) who wrote that “His argument is neither sufficiently clear nor sufficiently developed to allow us to judge its rigour”. A year later, he ended up fighting a duel to protect the honor of a lady. The night before the duel, he frantically wrote down his final mathematical thoughts. Early the next day, he was shot in the abdomen. He died the next day, May 31, 1832, at the age of 20. His mathematical writings were published a decade later.

Six

“Six is a number perfect in itself, and not because God created the world in six days; rather the contrary is true. God created the world in six days because this number is perfect, and it would remain

perfect, even if the work of the six days did not exist.”

-St. Augustine

Teach for America

Teach For America seeks to eliminate educational inequity by calling upon our nation's outstanding recent college graduates of all backgrounds and academic majors to commit two years to teach in urban and rural public schools and to become lifelong advocates for change.

We seek all academic majors. No previous education experience or coursework is required. Corps members receive full first-year teacher salaries and benefits, a \$9,450 AmeriCorps education award (if eligible), and student loan forbearance and interest payments for two years.

If you have what it takes - both to excel as a teacher despite immense challenges and to assume great influence in our country - we want to talk to you. Log onto our website today and watch video of corps members in action all across the country. Then, sign up for an informational conference call to speak with corps members and hear their stories.

It's all at:

www.teachforamerica.org/meet_online.html

Application deadlines for the 2005 corps are October 24, 2004 and February 18, 2005, so head online today!

Wall of Fame

You may have noticed the mug shots on the bulletin board near the 18x classrooms. It would be great to have every MSCS major and concentrator represented! If you are a major or concentrator and are unrepresented you have two options: 1) Identify fellow unrepresented folk in your MSCS classes and prevail on your prof to have a photo day in class; 2) Head on over to the ASC in the Old Main Annex and ask for the vagabond photographer (Peder "Shutterbug" Bolstad) who will be happy to take your portrait for THE WALL OF FAME!

Problem of the Week

Is there an arrangement of the ten numbers 1122334455 in a row so that each number, except the first and last, is the sum or difference of its two adjacent neighbors?

*** 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.

Last Week's Problem

Can the numbers from 1 to 25 be partitioned into two or more subsets so that the product of the numbers in each subset is the same?

The only solution, this week, came from **Robert Orme '05**. You cannot find such a partition. The only number that divides 23 is 23 itself and so the product for the subset containing 23, is the only one divisible by 23, so the two cannot be the same. You can make a similar argument using 13, 17, or 19 as the prime number. Robert proved that this is true for any n less than 25 and correctly conjectured that in fact it is true for any positive integer n . This general statement is an application of a famous theorem called Bertrand's Postulate that states the for any positive integer n greater than or equal to 2, there exists a prime p such that $n/2 < p < n$. The same argument holds for this prime p .

***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

Associate Editor: Thomas Noah Loome

MM Czar: Donna Brakke

Problems Editor: Amelia Taylor