

# MSCS



# Mess

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## This Week's Colloquium

Title:	Presenters from the Math Practicum
Date:	Tuesday March 18 <sup>th</sup>
Time:	1:30pm
Location:	SC 188

### **Title: Maximizing Call Center Consents for Blue Cross Blue Shield of Minnesota.**

Presented by Elysia Jeavons and Nate Eckberg:

Abstract: Blue Cross Blue Shield asked us to maximize the number of consents obtained by their call center for a disease management program. Using statistical and operations research techniques, we created a method for scheduling calls that by our simulations showed significant improvement in number of consents over the random scheduling previously used.

### **Title: Changing attitudes toward statistics at the Mayo Clinic: On-line versus live teaching environments.**

Presented by Josh Maus and others:

Abstract: As part of its primary mission of providing first rate medical care, the Mayo Clinic offers graduate school and continuing education level courses in statistics. The clinic currently supports three campuses; the Rochester campus, and satellite campuses in Scottsdale, Arizona and Jacksonville, Florida.

Many courses offered "live" in Minnesota are also packaged as on-line courses for employees at all three campuses. The goal of this project was to compare live and on-line courses in statistics to identify any differences in how student attitudes toward statistics change as a result of having taken a class.

### **Title: Maintaining Healthy Career Pipelines at General Mills.**

Presented by Danny Abel, Laura Boehm, Joe Usset, and Mikael Witte

Abstract: Every mid-sized and large corporation needs to ensure that management jobs can be filled in the future. For companies that prefer to promote internally, like General Mills, Inc. (GMI), even more care must be taken to make sure there is a good-sized pool of potentially promotable employees at every level of the company. At the same time it is a problem if bottlenecks occur and excellent employees are left unpromoted due to a lack of management openings. The purpose of this project was to develop a mathematical model to help companies like GMI assess their current employee structure with an eye toward avoiding both scarcity and overabundance of promotable employees.

## “Three Oles give research talks at Utah conference”

Last weekend Karin Gilje '08, Philip Gipson '09, and Dan Kohler '09 gave talks about the research they are doing under the guidance of Prof. Jill Dietz. All 4 attended a conference at Brigham Young University, sponsored by the Center for Undergraduate Research in Mathematics. Karin, Philip, and Dan are being paid by CURM to do original mathematics research during the academic year. Ask them about automorphisms of groups when you get a chance!

## Problem of the week

Solution to POW - Feb. 29, 2008

Solution submitted by Thomas McConville.

Problem:

If  $x+y+z=a$  and  $1/x+1/y+1/z=1/a$ , show that one of  $x, y$ , or  $z$  must equal  $a$ .

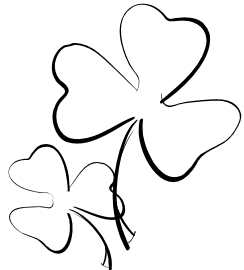
Solution:

Since  $1/x+1/y+1/z=(xy+yz+zx)/(xyz)$ , we know for some real number  $k$  that  $x, y, z$  are the roots of the cubic polynomial

$$w^3-aw^2+kw-ka=(w-x)(w-y)(w-z).$$

But  $w^3-aw^2+kw-ka=(w-a)(w^2+k)$ , so  $a$  is a root.

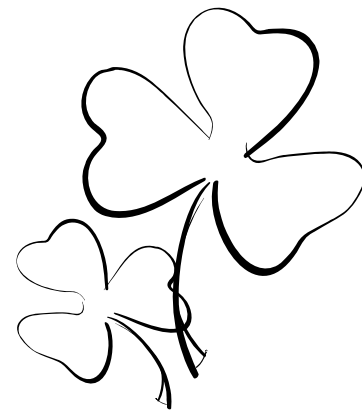
Thus one of  $x, y$ , or  $z$  is equal to  $a$ .



## Joke of the week

**Theorem.** A cat has nine tails.

*Proof.* No cat has eight tails. Since one cat has one more tail than no cat, it must have nine tails.



**Happy St Patrick's Day!**

**Have a fun and safe spring break!**

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*If you would like to submit an article or math event to be published in the Math Mess, e-mail [tummers@stolaf.edu](mailto:tummers@stolaf.edu).*