Math ⬡ Mess

This Week's Mathematics Colloquium

Title: What Does An Actuary REALLY Do?
Speaker: Mark Schulte
Time: Tuesday, April 15, 1:30 pm
Place: SC 182

This Week's Colloquium

Math majors looking for a job after college have a number of options open to them. One of the most promising is the actuarial profession. It offers students an opportunity to apply their problem-solving and analytical abilities in a rewarding career. In this colloquium Mark Schulte will give a broad overview of the actuarial profession and relate some of his experiences as a math major in the "real world". He will also discuss the actuarial exam process and what undergraduate math majors can do to improve their odds of landing a job as an actuary after graduation.

Mark Schulte graduated from St. Olaf in 1999 with a major in mathematics and a love of abstract algebra. After a brief stint in graduate school at the University of Wisconsin- Madison, Mark returned to Minnesota in 2000 and began working as an actuarial analyst at Mercer Human Resource Consulting. When not studying for actuarial exams, he enjoys running, cross country skiing, and windsurfing.

Math Recital on Wednesday!

This spring's Math Recital is coming faster than you can say Bolzano-Weierstrass! Here are the details:

WHAT: The N-th Annual Mathematics Recital

WHO: All Friends of the Mathematics Department

WHERE: Ytterboe Lounge

WHEN: Wed, April 16th from 7 to 9 pm. WHY: A chance to eat together, play together and laugh together.

The Math Recital is an annual tradition in the mathematics department. 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 his or her mathematical friends and colleagues. Please consider performing as an individual or part of a group. Professor McKelvey (mckelvey@stolaf.edu) is keeping the official play list, so please let him know immediately if you would like to present. If you choose not to

perform, please plan on attending. This is one event you can't miss!

Population Health Sciences

The University of Wisconsin-Madison offers both MS and PhD degrees in Population Health. The degree program is designed to provide rigorous disciplinary training and to develop the essential ability to recognize, integrate, and synthesize knowledge and skills across a broad range of disciplines important in population health research and policy.

Training is grounded in epidemiology and biostatistics methodology and a synthesis of concepts and tools from the social sciences and econometrics important to the study of health and disease in populations. The program fosters skills and insights to address problems of disease causation and prevention, the multiple determinants of population health, optimal health care delivery and allocation of health-related resources. Given the pace and complexity of changes in biomedical science, prevention and health care, the need for highly skilled professionals with the ability to effectively work and innovate across related disciplines has never been greater. Visit www.pophealth.wisc.edu/grad for more info.

A Prime Discovery

A pair of mathematicians, Dan Goldston and Cem Yildirim, have made a breakthrough in understanding prime numbers. The advance is related to the twin prime conjecture. This conjecture, still unproved, is that there are an infinite number of pairs of prime numbers that differ only by two. To tackle this problem, Goldston did what clever mathematicians do when they want to solve a difficult problem - they avoid it. Or rather, he approached the dilemma by first tackling a more manageable piece of the problem. He asked if it was possible to find prime numbers that might not be twins, but that were much closer together than average. After many years of study, he was able to

show it was. For more information, consult http://news.bbc.co.uk.

Last Week's Problem

Prove that in any 6-sided room (possibily irregular, nonconvex), it must be possible to place two security cameras which between them will be able to "see" any point in the room. Generalize.

Sadly, no solutions were submitted to last week's problem. This result is a special case of the Art Gallery Theorem. First, divide the hexagon into five triangles, introducing no new vertices. (This can always be done, even when the hexagon is non-convex.) Then color the vertices one at a time, red, yellow or blue. Make sure that each triangle contains one vertex of each color. (This can also always be done.) Now, select the red vertices, of which there will be two. Since each triangle has a red vertex, all points can be seen from one of the two red points.

Problem of the Week

The surface of an Easter egg is dyed in some number of colors. At some points, three colors meet, but never more than three. What can we say about the number of points at which three colors meet? For starters, can it be one?

** Please submit all solutions to **David Molnar** (molnar@stolaf.edu) by noon on Sunday.
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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