MSCS Mess

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This Week's Colloquium

Title:	**Mathematics of Elections**
Presenter:	Kay Smith
Date:	Tuesday November 4th
Time:	1:30 pm
Location:	SC 188

Abstract: On Election Day most elections in the United States involving three or more candidates will use the plurality method to determine the winner - the person with the most votes wins, even if this is less than half of all votes cast. What other methods can be used? What are the advantages and disadvantages of these methods? Is there a best method? Come to the talk to find out how mathematics can help answer these questions. (The only mathematical prerequisite is the ability to count.)

Bio: Kay Smith has taught mathematics at St. Olaf since 1980. She received her B.S. in from Bucknell University and her Ph.D. from Yale University. Since her formal education in math paid little attention to applications, she has enjoyed learning about the uses of math in a wide range of fields during her thirty years of teaching. She is known around the MSCS Department for her interest in chocolate as well as mathematics.

Friday Research Seminars

All majors are invited to the MSCS department's Friday research seminars, where faculty present talks on current or recent research. This week (Oct. 31), Prof. McKelvey will be giving a talk on **"Monitoring the Spread of Sudden Oak Death."** He will fill us in on his work on a research grant for the USDA Forest Service. Using homegrown Java Software he created a probabilistic, Bayesian model of pathogen spread, with the goal of optimally assigning federal inspectors to commercial nurseries. He will describe the algorithm that he developed and also look for advice in improving it from its current exponential running time status.

Next week's (Nov. 7) talk will be given by Alex Woo, on the question **"Which Schubert varieties are (local) complete intersections?"** Roughly speaking, the title question asks if certain specific geometric objects can be defined by a "small" number of equations. In Prof. Woo's first talk he will explain all the words in the title (except the one in parentheses). In the second talk he will explain the problem in terms that can be understood by anyone who has seen a determinant.
These talks are on Fridays at 3:30 in Regent's Hall, room 210. All majors are welcome to come and join in.

Summer Jobs at MathPath

Looking for a summer job related to math? Consider applying to be a camp counselor at MathPath. MathPath is a month-long national summer camp for middle school age students who are gifted in mathematics. Counselors receive a salary, room and board and well as the experience of teaching and learning math. The application deadline is January 31, 2009. Go to www.mathpath.org for more details.

Problem of the Week

A wooden cube of edge 3 is formed by gluing together 27 small cubes of edge 1. A termite, beginning with any one of the outer small cubes, begins to eat its way through the large cube, always moving perpendicular to a face (i.e., no diagonal movements are allowed). Is it possible for the termite to follow a path entirely within the large cube (emerging and crawling on the outside is also not allowed) which passes through each small cube exactly once and ends in the center cube? Generalize the problem to the case where the large cube has edge n, an odd integer.

Solutions to last week's problem are posted at SC 222. Send your solution to this week's problem to Prof. Gower (SC 222, gower@stolaf.edu) by Friday, November 7, 2008.

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If you would like to submit an article or math event to be published in the Math Mess, e-mail kochc@stolaf.edu.