L'Augarithms

Mathematics Colloquium Spring Lineup

Colloquia are typically held Wednesdays 3:40—4:40 in Oren 113. Highly sought-after refreshments are served.

Jan.	19	Infinite Secrets: The Genius of Archimedes
Feb.	2	Ken Kaminsky, Augsburg College
	16	Loren Larson, St. Olaf College
	23	Nancy Steblay, Augsburg College
Mar.	2	Jiang-Ping Chen, St. Cloud State
→	23	Alicia Johnson, Macalester College[1]
Apr.	6	Doug Dokken, University of St. Thomas
	20	Talks by Students

[1]This week's colloquium

The Gambler's Ruin in Monte Carlo

by Professor Alicia Johnson, Macalester College

How likely is it that a gambler avoids financial ruin or that a dizzy person finds their way home? Given their starting positions and the likelihood of each successive step, we can model the gambler's and dizzy person's paths using simple Markov chains. Both are classic examples which can be extended to more general settings through Markov chain Monte Carlo (MCMC) methods. Specifically, MCMC uses computer simulation to explore problems in higher dimensions and uncountably many possible states. In this talk, I will give an introduction to MCMC and discuss how it has revolutionized the field of statistics and its applications in biology, finance, and computer science (to name a few).

The Caption Contest

The *caption contest* remains alive for the time being, so there is still time to submit a caption for the crime scene photo (see vol. 24.08, or photos hanging in the department area) to win the fabulous grand prize of **100 ft. of genuine yellow an black crime scene tape**. Submit your caption as you would a solution to the POTW or PZOTW.

Problem of the week...

The POTW from vol. 24.09 was solved by **Wyatt Rassier**, and **Blake Vliep**.

Here is the new POTW.

You have 250 packages, each of which measures 1'x1'x4'. For shipping, you want to put them into a large rectangular box without leaving any empty space. What is the smallest possible surface area such a box could have?

Be sure to prove that your answer is correct.

❖ Reprinted with permission from Bradley U's old 'POTW' page <http://hilltop.bradley.edu/%7Edelgado/potw/potw.html>

Puzzle of the week...

Zach Nelson solved PZOTW from vol 24.08. **Brian Love**, **Wyatt Rassier**, and Jody Sorensen's **Linear Algebra Class** solved the PZOTW from vol 24.09.

A car leaves the Hamburg for Köln via the autobahn, at a speed of 75 miles per hour. Twenty minutes later another car leaves on the same road and in the same direction at 90 miles per hour. How far from Hamburg will the cars be when the second car catches up with the first? Explain, please.

❖Submit puzzle & problem solutions to kaminsky@augsburg.edu, or under Ken Kaminsky's door at SCI 137E, or in the puzzles and problems box just outside of Su's office.

Augsburg bans vampires from its premises.

Best School Humor

This came under the heading: How to fail a test with dignity.

Why would living close to a mobile phone mast cause ill health?

You might walk into it.

The following is a LETTER to the Editor of the New York Times:

Advanced Placement Math Courses

Published: January 16, 2011

To the Editor:

Trevor Packer of the College Board sees no immediate need to revise the Advanced Placement mathematics programs ("Rethinking A.P.," Education Life, Jan. 9). As someone who deals daily with the effects of those programs, I disagree.

More and more of my students who have scored well on calculus A.P. exams have not seen, much less contemplated, the precise mathematical definition of a limit upon which calculus stands, for just one example. The "rushing through important topics" mentioned at the beginning of the article is very much a part of the calculus program.

More problematic, however, is the rushing through high school mathematics to get to A.P. calculus, while simultaneously accumulating A.P. courses in other areas. Students hoping to attend colleges like Middlebury are told by guidance counselors

Best Church Bulletin Humor

The following announcement appeared in a church bulletin, or was announced at a church service:

Barbara remains in the hospital and needs blood donors for more transfusions. She is also having trouble sleeping and requests tapes of Father Jack's sermons.

and, yes, our own admissions officers to take the most challenging courses at their schools. Consequently, their high school years are geared toward getting through the College Board's version of college-level material in three or four or sometimes six areas.

At the end of all this, a number of bright, hard-working students have shockingly weak algebra skills. At some point along the way the A.P. program has shifted from a way to meet the needs of a few students who are ready for a challenge to a de facto admissions requirement for many who may not be. Having used their A.P. credits to get into Middlebury, a number of our students try to take calculus again, saying, "I know I got a 5 on the exam, but I didn't really understand it." I know this genie is out of the bottle, but I would rather teach calculus to a student with solid algebra skills and no A.P. experience than to one who took calculus too soon.

Priscilla Bremser, Middlebury, Vt., Jan. 11, 2011

The writer is a professor of mathematics at Middlebury College.

Math Jeopardy Contest

Jeopardy: jeop•ard•y |ˈjepərdē| • noun • danger of loss, harm, or failure: *Michael's job was not in jeopardy*. • Law danger arising from being on trial for a criminal offense. • ORIGIN Middle English *iuparti*, from Old French *ieu parti '(evenly) divided game.'* The term was originally used in chess and other games to denote a problem, or a position in which the chances of winning or losing were evenly balanced, hence [a dangerous situation.]

Augsburg is hosting the first annual **Math Jeopardy Contest** on April 1. Teams from Augsburg, St. Thomas, and Macalester will participate. ***Come watch and cheer!*** Details will arrive in your email inboxes.

Correction:
In the Pig Latin Cartton of vol. 24.09, the word Veh! should have been spelled Vah! The correction is shown at right.

Acknowledgements and thanks go to:
A colleague who wishes to be identified only as **Atthewmay Aineshay** and who thought that pigs speaking Latin would be funny.

Help with the Latin was gotten from **Phil Adamo** of Augsburg College, **Nanette Scott Goldman** of Macalester College, and **Emily Blanchard West** of St. Catherine University.