

The Almagest

The bi-weekly newsletter of the Department of Mathematics and Computer Science. Your trusted source for news.

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Alma College
Alma, MI 48801

Math Colloquium

Dr. Tim Pennings will show that dogs - at least his dog, *Elvis* - know calculus. That is, *Elvis* can find the optimal - fastest - route to a ball thrown into the water some distance down the beach. But what happens when *Elvis* is positioned in the water and retrieves a ball that is also in the water? When should he swim straight to the ball, and when should he swim in to the shore, run along the shore, and then swim back out to the ball? What is the bifurcation point for the change in optimal strategy? Does *Elvis* bifurcate? Does his fur bicate? All of these questions will be answered at the talk.



Elvis will be in the building demonstrating that he's indeed the King of Calculus - and much more than a hound dog.

"Do Dogs Know Calculus?"

Presenter: **Dr. Tim Pennings** (Hope College)

Date: **Thursday, October 25th**

Time: 4:00

Place: Dow L1

Refreshments at 3:50

Faculty Happenings

Several members of the Department of Mathematics and Computer Science have recently received news that their papers will be published.

Dr. Robert Molina and **Dr. Myles McNally** have co-authored a paper, "Randomly P_k -decomposable Graphs," that will appear in the November 2012 issue of *Discrete Mathematics*.

Dr. Zoe Dai recently received news that her paper, "Local Regularization Methods for Inverse Volterra Equations Applicable to the Structure of Solid Surfaces," will appear in the *Journal of Integral Equations and Applications*.

News From The Math Club

The next event sponsored by the Math Club is:

Study Night: Monday, October 15th, 8-10 p.m.
Smith Room in the Library

The Math Club meets **EVERY THURSDAY at 10 pm** in the Wright Hall lobby. The officers are:

Pres: **Caitlin Closs** VP: **Phil Ryskamp**
Treas: **LeeAnne Carr** Sec: **Katie Dwenger**

Important Meeting For Seniors

All senior mathematics and computer science majors are required to attend a meeting on **Tuesday, October 23rd** at 4:00 in SAC 216. At this meeting we'll provide details about the written and oral components of the senior presentations. Please put this important meeting on your calendar.

Good News for C.S. Majors

General Motors is setting up four technology innovation centers in the U.S. and plans to hire **10,000** computer specialists over the next three-to-five years. The company wants to develop its own cutting-edge technology, which experts say is essential to staying ahead of the competition. One of its centers would be in the Detroit suburb of Warren, where the company plans to hire **1,500** computer specialists.

What Can I Do With My C.S. Major?

As a freshman, I contemplated being a computer science major, but after a few classes, I decided that IT wasn't for me. What I failed to realize is that you can do a million things with a computer science degree that isn't working in IT or writing code and being a programmer. So in hind sight, I wish I would have looked a little more into being a software architect—the number one job in IT—before I gave up on a computer science degree.

Before you give up on computer science, I am compelled to make the point that computers are the future and will always need someone to build, fix, and improve them, so the job market is wide open. Software architects are the people in charge of improving the computers. Much like an architect who designs houses, software architects design boilerplates for software engineers to help develop the next big software item for a company—software architects are still responsible for a decent amount of coding though. Although a software architect spends most of his or her time in a cubicle, it is a respected position among software engineers. There is also plenty of interaction with other programmers, and a median paycheck of \$119,000, which allows you to leave your boring cubicle and go on an exciting vacation when you have time off work. *Jon Young*

Solution to Previous Problem

One day Robin said, “I have been alive during all or part of five decades.” Rounded to the nearest year, what is the *youngest* Robin could have been?

Alex Hegedus claimed the prize with the following solution. Say Robin was born on **December 31st** 1999, just as the decade was ending.

30 years later, Robin is 30 and it's 2029 **December 31st**, and she's seen 4 decades: the 90s, the 00s, the 10s, and the 20s. Then the next day and it's 1930 and Robin has now seen her 5th decade, and she's still 30 years old.

Puzzle of the Bi-week

A calculus teacher put the following problem on a test:

"Find the slope of the curve $y = f(x) = e^x$ at $x = \Delta$ " where Δ was a number furnished by the teacher on the test. Δ was a dreadfully unfortunate choice for that teacher since some students incorrectly differentiated like this:

$$f'(x) = xe^{x-1},$$

correctly substituted the number Δ the teacher had furnished, and obtained the correct answer. **List all the numbers Δ the teacher might have used on the test to have this phenomenon happen.**

A prize of **\$2.00** will be awarded to the **FIRST** student who submits a correct solution to Prof. Sipka.

Student assistant: Jonathan Young

Faculty advisor: Tim Sipka

Distribution: Deb Smith

If you would like to submit an announcement or a short article, please send it via e-mail to Tim Sipka (sipka@alma.edu).