

MSCS Mess

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This Week's Colloquium

Title:	The Futurama Theorem
Speaker:	Joe Benson
Date:	Monday, November 10
Time:	3:30 - 4:30 pm
Location:	RNS 310

About the talk: The animated sitcom Futurama (1999-2003, 2008-2013) featured on its creative staff a PhD in Applied Mathematics (Ken Keeler), a PhD in Computer Science (Jeff Westbrook), and a PhD in Inorganic Chemistry (Bill Odenkirk). Set in the year 3000, the writers are able to play with far out science fiction ideas and incorporate various scientific phenomena into the show, particularly incorporating mathematics like no other show has done before. In the episode, "Prisoner of Benda", a bonafide original mathematical result and proof play an integral role in solving the situational problem presented in the episode. In this talk, Joe Benson will discuss and demonstrate the problem arising in the episode, as well as prove the theorem which will solve the problem. Then we will watch the episode.

This Week's Seminar

Title:	Using Linear Algebra and Analysis: some very interesting infinite matrices and how they operate.
Speaker:	Elizabeth Strouse Universite de Bordeaux
Date:	Friday, November 14
Time:	3:35 pm
Location:	RNS 204

About the talk: Toeplitz matrices are matrices with constant diagonals while Hankel matrices have

constant counter-diagonals. These matrices have been studied ever since people started talking about linear algebra. One can actually represent such matrices as a multiplication by some square-integrable (L2) function on the circle, followed by an orthogonal projection onto a particularly interesting subspace of L2 called the Hardy space. This representation gives us a way to answer questions like: when does the product of two Toeplitz matrices equal a Toeplitz matrix; which matrices commute with Toeplitz matrices or; which matrices act boundedly. Elizabeth Strouse will try to show how this extends some ideas from linear algebra and real analysis - and shows the relationship between the two! She will also say something about her research related to and generalizing these ideas.

Woodrow Wilson Teaching Fellowship

Would you like to put your MSCS knowledge to work for the young people who need it most?

The prestigious Woodrow Wilson Teaching Fellowship Program offers its fellows a \$ 30,000 stipend toward completion of a one-year master's degree program at a partner institution in Georgia, Indiana, or New Jersey. Fellows undergo a year-long clinical experience in a high-need school, along with rigorous subject matter courses, then commit to teach for three years in urban or rural secondary schools, with mentoring throughout the entire process.

Any qualified, interested student can apply online now for the 2015 Fellowship. More information can be found at <http://woodrow.org/fellowships/ww-teaching-fellowships/>.

Still Space in the Math Practicum (Math 390)

The application deadline for the Math Practicum this interim has passed, but there are still a couple of open seats in the course. If you did not apply but are interested in joining the class this January, please let the course professors (Vandiver and McKelvey) know.

The practicum is a unique course that allows small groups of students to work on problems from real world industry and research institutions. It offers a unique glimpse into how mathematics is used out there in the real world, a glimpse that is very different from that offered by internships and summer jobs. In those positions, students often assist others on projects; in the practicum you will be leading the work, not just accepting tasks from others. You will be making decisions, not implementing the decisions of others. In short, you will become the expert.

It's hard work, but very worthwhile. The professors hope to be hearing from a few of you who are interested in this important challenge. If you have questions, please feel free to contact either Professor Vandiver (vandiver@stolaf.edu) or Professor McKelvey (mckelvey@stolaf.edu).

The Sponge
is
MASSIVE...
prepare!

Fall Speaker Colloquium presented by Pi Mu Epsilon

Pi Mu Epsilon's Fall Speaker is Professor Jill Dietz! Thanks to those who cast their guesses in RMS!

The colloquium will be on Monday, November 17th at 3:30pm. Keep reading the Mess for more information about the event!

and for Your Reading Pleasure...

a Stats Joke

Two statisticians were flying from LA to New York. About an hour into the flight, the pilot announced that they had lost an engine, but they needn't worry, there were still three left. However, instead of 5 hours, it would take 7 hours to get to New York.

After some time had passed, the pilot announced that a second engine had failed. They would be fine, as they still had two engines left, but it would now take 10 hours to get to New York.

Somewhat later, the pilot came on the intercom again and said that a third engine had died. No need to worry, he told the passengers, the plane could fly on a single engine, but now it would take 18 hours to get to New York.

When the announcement had ended, one of the statisticians turned to the other and said, "Man, if that last engine fails we're gonna be up here forever!"

and a Riddle

If it's information you seek,
come and see me.
If it's pairs of letters you need,
I have consecutively three.
Who am I?

*(The answer can be found in the next Mess!)
(Last week's answer: a river)*

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