

MSCS MESS

Department of Mathematics, Statistics, and Computer Science
St. Olaf College, Northfield, MN 55057
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Next Friday's Research Seminar

Title: Spectral graph theory: a cross-roads of graphs and matrices
Speaker: Kristin Heysse
Time: Friday, October 21, 3:40pm
Place: RNS 204

About the talk: A graph is a representation of relationships between objects. One example of a large graph is the internet, where webpages are the objects and links between them are the relationships. The study of graphs is extensive, and whole classes are taught on single topic. In this talk, we'll explore spectral graph theory. When studying graphs, it is often useful to encode them into matrices. The matrix contains all the information about a graph, but it becomes large and unmanageable very quickly. Instead, we can capture some aspects of the graph in the eigenvalues of the matrix. We'll discuss what information about the graph is stored in these eigenvalues and which sorts of graphs are cospectral (having the same set of eigenvalues).

About the speaker: Kristin is a fifth year PhD student at Iowa State University studying graph theory under the advisement of Steve Butler. A Minnesotan by birth, she earned her undergraduate degree at Concordia College (Moorhead, MN) in 2012, where she majored in mathematics and minored in physics. When not working on math, Kristin sings in a community choir, crafts, and rock climbs.

New MSCS course offering: Math 224—History of mathematics in the west

How do new mathematical ideas arise? How have politics, economics, arts, and science influenced and been influenced by the development of mathematics? Using primary sources and historical studies, students will address these questions by examining significant events in the history of mathematics and the contexts in which they occurred. The course focuses on mathematics in ancient Greece and in Europe (and later the United States) from the Renaissance to the present.

This new course, which will satisfy the HWC general education requirement and count as an elective for the math major, will be taught by Kay Smith and will meet Tuesday 9:35 - 11:00 and Thursday 9:30 - 10:50 this spring. If you have questions about the course, contact Professor Smith at smithk@stolaf.edu or stop by to see her in RNS 320.

Quiet week approaching

With registration for Interim and next semester in a few weeks, our next issue of the Mess will include course descriptions for MSCS course offerings. In the meantime, the St. Olaf webpage has plenty of information for those eager to see which classes they might find inviting.

Having mentioned math history...

...how about a little math herstory? If you're looking for some reading material for the upcoming break, check out *Hidden Figures*, the *New York Times* bestseller published last month by Margot Lee Shetterly that explores the lives and work of a group of black female mathematicians recruited by NASA dur-

ing the Cold War to calculate flight trajectories that enabled the 1969 Moon landing. For those less inclined to read, don't worry—a film based on the book will be released on Christmas.

And finally a joke (or two?)

Q: What's an anagram for Banach-Tarski?

A: *Banach-Tarski Banach-Tarski.*

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