

# MSCS MESS

Department of Mathematics, Statistics, and Computer Science

St. Olaf College, Northfield, MN 55057

September 23, 2016 Volume 45, No. 2

---

## Next Friday's Research Seminar

Title: On Differing Numbers  
of Different Differences

Speaker: Peter Blanchard

Time: Friday, September 30, 3:30 pm

Place: RNS 204

**About the talk:** Arithmetic progressions have been part of the mathematical landscape almost forever. We will discuss a small amount of history around arithmetic progressions before using alternative characterizations to show why they are so special.

**About the speaker:** Peter F. Blanchard enjoys experiencing patterns in art, throwing patterns up in the air, attempting patterns in music, and searching for patterns in mathematics.

## Next Monday's Colloquium

Title: Subfractals and Subshifts

Speaker: Liz Sattler

Time: Monday, September 26, 3:30 pm

Place: RNS 204

**About the talk:** Fractals provide some of the most beautiful and interesting examples in mathematics. In this talk, we will introduce some of the most popular examples of fractals, including the Cantor set, Sierpinski's triangle, and the Koch snowflake. We will carefully discuss the strong connection between fractals and infinite strings on a finite alphabet (symbolic space). We will take special interest in subfractals, defined by a specific type of subset of the symbolic space. Finally, we will explore methods to distinguish two fractals

and discuss why our usual methods (length, area, volume) will not be helpful.

**About the speaker:** Liz Sattler is originally from Dickinson, ND and has spent the last 8 years in Fargo, ND, completing both her undergraduate and doctorate degrees at North Dakota State University. Dr. Sattler moved to Northfield this summer to start as a visiting assistant professor in the Math/Stats department across the river.

## Sign up for the Putnam Competition

The William Lowell Putnam Mathematical Competition is an annual competition for undergraduates enrolled in the United States and Canada. Awards include a scholarship and cash prizes ranging from \$250 to \$2,500 for the top students and \$5,000 to \$25,000 for the top schools. Last year, St. Olaf placed 40th out of the roughly 500 schools participating (including big universities, ivy league schools, and even Carleton).

The problems are very challenging but also very satisfying. As usual, the competition is done on campus the first Saturday of December (Dec. 3) 9:00-12:00 and 2:00-5:00 (there are two rounds). If you are interested in taking the contest and are not already on the problem solving email alias, please contact Prof. Berliner as soon as possible and no later than Sept. 30.

## Upcoming Analytics Competition

MinneAnalytics, a Twin Cities-based analytics community, is partnering with the Midwest Undergraduate Data Analytics Competition and Social Data Science this autumn to

host MinneMUDAC, an analytics event for undergraduate students interested in the interpretation of big data. Teams of up to five will use a provided data set to approach a research question, culminating in informal interviews and formal presentations on November 5<sup>th</sup> in Eden Prairie, with \$5000 in available prize money and the opportunity to demonstrate capability to an audience of analytics community members, including industry recruiters. For more information or to register a team, visit <http://minneanalytics.org/minnemudac/>

## Some Affirmation

Those struggling to find real-world applications of the math they love can celebrate today because September 23<sup>rd</sup> marks the anniversary of the discovery of Neptune, located in 1846 due to French mathematician Urbain Le Verrier's calculations. All mathematicians can find pride in this immensely valuable feat, knowing that without mathematics, modern astrologers would not have a celestial body to attribute as the ruler of the star sign Pisces.

*To submit an article or event for publication in the Mess, email brooke@stolaf.edu; to receive the Mess digitally each Friday, email martinep@stolaf.edu; visit <http://wp.stolaf.edu/mscs/mscs-mess/> for a digital archive of previous MSCS Mess issues.*

Corey Brooke, Editor  
Bruce Pell, Faculty Adviser  
Patty Martinez, Mess Czar