**Mathematics Talks**

Avner Halevy will be speaking on Monday, March 10, at 4 p.m. in CMC 206.

**Adventures in High Dimensions**

Go ahead, put on your $n$-dimensional goggles. To be sure, we’re not talking $n = 3$ (for kids and the faint-hearted). Think higher; so high your head has almost disappeared; so high your neighbors are all suspiciously alike and almost perfectly different. As thrill-seeking mathematicians, we will explore some mind-bending high-dimensional phenomena including surprising methods for eliminating surprises, saving space with low-distortion inter-dimensional travel, what the laws of large numbers don’t tell you, how geometry and probability are sometimes the same thing, mowing your hyper-spherical lawn, and where to look for your hat in a high-dimensional room. As you transition back to the familiar three dimensions, stay away from heavy machinery!

Allison Tanguay will be speaking on Wednesday, March 12, at 4 p.m. in CMC 206.

**The Needle Problem**

In 1917, S. Kakeya posed “the needle problem,” asking: what is the area of the smallest figure in the plane in which a unit line segment (a “needle”) can be rotated 180 degrees? It was conjectured that the smallest such “Kakeya set” was a deltoid with area $\pi$. However, in 1928, A.S. Besicovitch published a surprising result: Kakeya sets can be arbitrarily small. More than just a historical and geometrical curiosity, Kakeya sets have come to play an important role in analysis today. In this talk, we will construct a Kakeya set with an arbitrarily small area and then discuss some problems that are unexpectedly related to these sets.
**Last Stop On The Tour**

At this week’s final stop, Katie St. Clair will talk about “Models for Estimating Animal Abundance and Species Diversity.” The talk will be on Friday, March 7, in CMC 206 at 3:30 p.m.

**Carleton Analytics Team**

Looking for fame, fortune, and data analytics experience? Want to travel to exotic Winona, Minnesota? Compete with the Carleton Analytics Team (AKA the CAT’s meow) in the 3rd Annual Midwest Undergraduate Data Analytics Competition on April 5-6! The top teams will receive accolades and a cash prize! If you are interested in participating (and who wouldn’t be?) contact Katie St. Clair or Miles Ott by the last day of winter term.

**STA Teaching Opportunity**

Southern Teachers Agency (STA) is looking for candidates for the 2014-15 academic year. These teaching jobs range from math at the elementary-grade level through AP Calculus. Candidates do not have to be in a teacher-preparation program or major in education to be considered for some faculty positions. While a degree in math education is desirable, most middle and upper grade teachers are hired based on their subject knowledge and their ability to work with young people. Candidates should have a minimum GPA of 3.0. For more information, visit their site: www.southernteachers.com.

**Fun Math Books**

Starting this month, the Gazette will be featuring math books that will be available for students to read for fun. All books will be kept in the Reading Nook in the back corner of the Math Skills Center.

This month, take a look at *A Guide to Functional Analysis* by Steven G. Krantz. This is a book about infinite-dimensional spaces of functions. This subject, known as “functional analysis,” is now a central and essential part of modern mathematical analysis. This book contains many pithy examples and applications, and it concludes with a dramatic result of Lomonosov that was proved only 30 years ago.

**Problem of the Week**

Let \( n \) be a positive integer with \( k \) divisors \( d_1, d_2, \ldots, d_k \) (including 1 and \( n \)). Show that \( d_1 d_2 \ldots d_k = n^k \).

**Acknowledgments**

Frank Yang, Madeline Geitz, and John Snyder in Oconomowoc all submitted correct solutions to last week's problem. By lottery, Madeline wins a prize from the BBOP. Stop by the department office to pick it up!