

MSCS



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Department of Mathematics, Statistics and Computer Science
St. Olaf College
Northfield, MN 55057

September 28, 2007
Volume 36, No.3

This Week's Colloquium

Title:	Summer Math Research in Lodz, Poland: The f-density topology
Speakers:	Joshua Campbell and David Swanson
Time:	1:30 pm Tuesday, October 2nd (Treats at 1:15)
Place:	SC 182

Abstract: St. Olaf College, with backing from the National Science Foundation, supports undergraduate research mathematics in Lodz, Poland. Last year's participants, Joshua Campbell and David Swanson, spent their summer researching a mix of Measure Theory and Topology at the University of Lodz. The two worked with international experts on the density topology and developed properties of the f-density topology, a generalization of the density topology.

Their experience was not only mathematical, but cultural as well, having explored many historic landmarks of Poland, including the Stare Miasto in Krakow, the Teutonic castle of Malbork, the Amber Museum in Gdansk, and Copernicus' house in Torun. Students interested in this research program or in mathematics in general are invited to hear Joshua and David share their mathematical travel experience.

Mathematics and War

Thousands of years ago people started building structures to protect themselves from enemy attacks. As warfare became more sophisticated, new weapons and modes of warfare necessitated advances in the design of fortifications. Beginning in the 1600's military engineers applied geometry to the design of fortresses. The St. Olaf library catalog provides access to electronic copies of several manuals on fortification and siege warfare from the seventeenth century (search The Bridge under subject: Fortification – Early Works to 1800). In addition to presenting designs for fortresses, many of these manuals contain lessons on geometry, including methods of constructing regular polygons. In his work, *Fortification or Architecture Military: Unfolding the Principall Mysteries Thereof, in the Resolution of Sundry Questions and Problemes*, Richard Norwood, probably inspired by the axiomatic approach of Euclid, presented seventeen "axioms observed in fortification." For example, axiom sixteen states: "a Fort of three sides and angles is of no moment, neither is a Fort of foure sides of any great value, but in generall the more sides and angles a Fort hath, the better it is."

-Kay Smith

International Research

for Undergraduates in Real Analysis and Dynamical Systems

With significant support from the National Science Foundation and St. Olaf College, the Department of *Mathematics, Statistics and Computer Science* will sponsor four undergraduate research scholars during summer of 2008. These undergraduates will join teams of professional research real analysis at one of two host institutions, Lodz University in Poland or Selesian University in the Czech Republic. See our website for additional info:

<http://www.stolaf.edu/people/humke/REU2005-2007/REUintro.html>.

Grant funding allows full support for three International Interns per summer for each of the next three years. This support includes:

- all travel expenses to/from the host sites
- all living expenses while in residence in Europe
- a \$4300 research stipend.

The grant also pays for travel and living expenses at one or perhaps two professional conferences upon return. This is a wonderful opportunity and available only for St. Olaf students. Josh Campbell and David Swanson are our current International Research Scholars and they will tell about their experiences during the Colloquium on October 2.

Application is simple:

*Ask 3 professors to write a letter in support of your application. (Two references must be from mathematicians.)

*Complete a 9 question application form on the right hand column of the math website:

www.stolaf.edu/depts/math

or directly at

<http://www.stolaf.edu/people/humke/REU2005-2007/REUintro.html>

The Deadline for all materials is **Nov. 9, 2007**

Problem of the Week (POW)

If

$$a + b + c = 3$$

$$a^2 + b^2 + c^2 = 5$$

$$a^3 + b^3 + c^3 = 7$$

Then

$$a^4 + b^4 + c^4 =$$

Solutions to the Problem of the Week should be submitted to Mike Weimerskirch's mailbox in OMH 201.

Game Night

Date: Wed. Oct. 3

Time: 6:30.

Location: SC 188

There will be pizza!

The game of the month is *Philosopher's Phutball* for rules: <http://en.wikipedia.org/wiki/Phutball>

Questions? see Mike Weimerskirch in OMH 304

Problem Solving Group

The Problem Solving Group is designed to prepare students for the Putnam Exam, the Konhauser Problemfest and other problem solving competitions.

Meetings: Tuesday at 7:00pm in SC 188.

The first meeting will be Tue. Oct. 2.

Mark Your Calendar

MSCS&BIO Tailgate Party

Thursday October 9 (evening)

Details next week...

Editor-in-Chief:	Kate Tummers
Faculty Advisor:	Katie Ziegler-Graham
MM Czar:	Donna Brakke
Problems Editor:	Mike Weimerskirch

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