

MSCS



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Department of Mathematics, Statistics, and Computer Science
St. Olaf College, Northfield, MN 55057
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Monday's Colloquium

Title: **Analysis of Cognitive Data**
Speaker: Prof. Kirsten E. Eilertson '06
Date: 11/7/22, 3:30pm
Place: RNS 310

Cognitive decline, impairment, and improvement is a major area of medical research. In particular, researchers seek to understand how aging, genetics, disease, radiation, trauma, and other factors may impact one's cognitive abilities and brain health. In this talk Prof. Eilertson will present a few commonly used cognitive measures with their typical experimental designs, and the corresponding analysis strategies. Prof. Eilertson will include examples from both mice and human studies. She also will provide an example from a project she's worked on, and how the results have been used to draw conclusions and determine future research directions. **Everyone is welcome!**



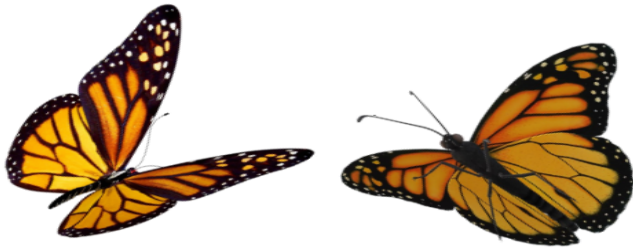
Friday's Seminar

Title: **Polychromatic Colorings of the Integers**
Speaker: Prof. John Goldwasser
Date: 11/11/22, 3:30pm
Place: RNS 310

Abstract: Loosely speaking, if L is any large structure consisting of some elements, and F is a family of substructures of L , we say a k -coloring of the elements of L is F -polychromatic if every substructure in F gets all k colors. The polychromatic number of F in L is the largest k such that there exists an F -polychromatic k -coloring. I will focus on this theorem: If S is any set of 4 integers, then there is a 3-coloring of the integers such that every additive translate of S gets all 3 colors. This proves a conjecture of Newman that the codensity of any set of 4 integers in Z is at most $1/3$ (the codensity of a finite set S of integers is the minimum density of a set T in Z such that $S + T = Z$).

About : Prof. Goldwasser has been a professor at West Virginia University for more than 30 years. Prof. Goldwasser has also taught at the university level at Iowa State University, Amherst College, the University of Malawi, and Chiang Mai University in Thailand, and at the high school level at a school for Native

Americans in Milwaukee and private schools in Connecticut and Maine. Prof. Goldwasser has had sabbaticals in Budapest and Shanghai.



Attention Math Majors! Undergraduate Resource Fair - Nov 19th & 20th [Zoom]

You're invited to the **Online Undergraduate Resource Fair for the Advancement and Alliance of Marginalized Mathematicians (OURFA²M²)**, taking place via Zoom November 19th and the 20th.

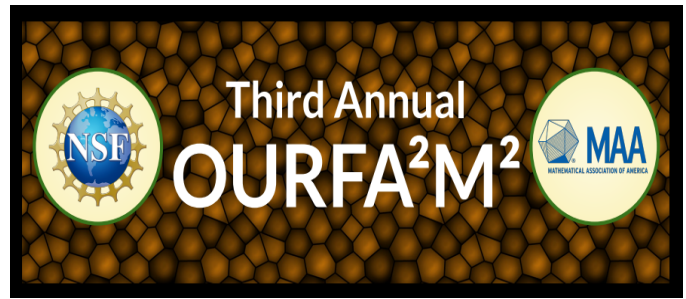
This conference aims to help students start or develop a math career (in research, teaching, or industry). Anyone is welcome to attend, and we are especially aimed at students from underrepresented and marginalized groups in mathematics.

This conference is for:

- Students at all levels, from pre-calculus up.
- Students who want to learn about career building opportunities.
- Students who want to connect with peers and potential mentors.

This event will also include a crash course of areas of math common to undergraduate research, various programs for undergrads, a resource presentation on mentorship and math organizations, and networking lunches.

Please see more details on their [website](#), and register [here!](#)



Club Feature - *The Society for Industrial and Applied Mathematics!*

SIAM, the Society for Industrial and Applied Mathematics, is the St. Olaf student chapter of an international organization for math enthusiasts. Their mission is to “build cooperation between mathematics and the worlds of science and technology.” Students also get a free national membership when they join the club! They meet every other week in the RMS 6th floor lounge, from 8:00-9:00 pm. They do a variety of events, from socials to hosting guest speakers. If you are interested in joining and using applied math to solve real world problems, email siam-officers@stolaf.edu.

Graders and TAs for MSCS Spring 2023!

The MSCS department is looking for graders for the several courses in the coming semester. Here is the [link](#) to apply! Please note the application deadline will be **Noon Thursday, November 17th**. The qualifications include:

- Completed the course you are applying for with an A or B grade
- Ability to maintain confidentiality
- Capability to complete work in a timely manner

Once the deadline has passed, with guidance from the professors, we will start matching courses and student workers. When the matches are completed and if you are chosen, Ellen Haberoth will contact you to see if you're still available. Please note this process may go

into December and January. If there are any questions please email habero1@stolaf.edu.

MSCS Students - St. Olaf Hackathon Volunteer Sign ups

We are still looking for more volunteers who can help us run a hackathon. Typically a hackathon works to tackle a particular problem, puzzle, or a challenge to create a particular application. OleHacks will be a 36-hour long Hackathon starting on Friday night and ending on Sunday afternoon. We hope to have volunteers with a variety of skill sets which means ***you do not need to have the ability to carry out every responsibility written below!*** We also welcome volunteers who cannot stay during the entire 36 hours.

Responsibilities of volunteers include:

- Logistics help (Help greeting guests, setting up and cleaning up venue, organizing meal breaks, etc).
- Providing technical mentorship for participants.
- Facilitating group sessions happening during the Hackathon.
- Facilitating game sessions during the Hackathon.
- Helping guest speakers and sponsors set up their presentations.
- Reaching out to potential sponsorships for funding.

Here is one example of a previous [hackathon](#) held at St. Olaf! And here is another example of a previous [hackathon](#)!

CS Undergraduate Research

St. Olaf CS invites applicants for undergraduate research student work during Fall '22 and

possibly Spring '23, for work on projects involving cloud computing or Raspberry Pi units, as part of the CSinParallel research group. Specifically, the work relates to (1) “Runestone Backend”, an automated containerized parallel/cluster computations on Google Cloud using Kubernetes, and (2) the Self-Organizing Cluster system for the Raspberry Pi, including system image development. Qualifications depend on the particular project, as described in the application details. Both are ongoing projects with flexible expectations for hours per week, and strong applicants who may have partial qualifications are encouraged to apply for one or both projects.

Please apply [here](#), applications will be accepted and considered until further notice.

MSCS Students - Summer in Budapest!

Come spend a summer in Budapest to explore the [Hungarian mathematics pedagogy](#), which emphasizes problem solving, mathematical creativity, and communication. [Summer@BSME](#) is a six-week study abroad program designed for undergraduates, recent graduates, and in-service teachers interested in the learning and teaching of secondary mathematics. Participants take mathematics education courses to learn about the Hungarian pedagogy. They also engage in a week-long field experience at a math camp, where they obtain first-hand experience on how the methods learned in the courses are put into practice. **To learn more about this exciting summer opportunity, visit bsmeducation.com. To learn more generally about studying abroad, check your emails for the Smith Center for Global Engagement, that offers more information about programs and funding.**

To submit an article, event, or anything else for publication in the Mess, email hilst1@stolaf.edu; to receive the Mess digitally each Friday, email habero1@stolaf.edu; visit <http://wp.stolaf.edu/mscs/mcs-mess/> for a digital archive of previous MSCS Mess issues.

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