

MSCS MESS

Department of Mathematics, Statistics, and Computer Science
St. Olaf College, Northfield, MN 55057
22 October 2021 | Volume 50, No. 6

Today's Research Seminar

Title: An Introduction to Crystal Bases
and Their Combinatorial Models
Speaker: Prof. Adam Schultze
Date: **Friday, October 22**
Time: 3:30pm
Location: RNS 204

About the talk: We begin by answering the questions, “What are crystal bases?” and “Why should we care about them?”. We then develop the tools needed to build two different combinatorial models for such structures: the Tableau model and the quantum alcove model. We conclude by discussing the benefits and detriments of each model which motivates an isomorphism between the two. Elements of this seminar will be continued in a second talk by Prof. Schultze on November 5...

About the speaker: Adam Schultze recently received his Ph.D. in mathematics from SUNY University at Albany. His research area is algebraic combinatorics, a field where abstract mathematical structures, often pertaining to certain symmetries, are broken down into discrete models.

CS Resume Workshop

On **Thursday, October 28** from **7pm till 8pm** in **RNS 204**, Linux Ladies and ACM (the Association for Computing Machinery) are collaborating to host a CS resume workshop to help build and update resumes! They will be talking about good

resume practices and holding a peer review session. Students with resumes in all stages are welcome to attend!

Special Course Offerings

The MSCS department has some exciting, upcoming courses being offered for the first time! Here are their titles, professors, and descriptions. If you've still got a hole in your schedule for Interim or spring, one of these classes might do the trick...

Spatial Data Analysis

When: Interim

What: STAT 282

Who: Prof. Laura Boehm Vock

Do police stops tend to happen more in certain areas than others? Is your health related to your zip code? How much will it snow in Northfield? Do bees of different species tend to live near each other or in separate areas? These seemingly different questions are united by a common thread: we address them using data collected over space. In this course, you will learn to visualize and analyze three main types of spatially correlated data through examples in a wide variety of applications! Prerequisites for the class are an introductory statistics course and experience with R (e.g. from STAT 212 or MSCS 150/264). Please contact **Prof. Boehm Vock** with any questions!

Elliptic Curves

When: Spring

What: MATH 382

Who: Prof. Tyler Billingsley

How do modern websites secure your information? How can you earn **\$1 million** by studying math? The answer to these questions and more lies in the theory of elliptic curves, which, in its most basic form, seeks to find solutions to cubic equations in two variables. Elliptic curves are hugely impactful in modern number theory and cryptography, so experience with the subject is useful for Math and CS majors alike. The only prerequisite is MATH 252. Please contact **Prof. Billingsley** with any questions!

Directed Undergraduate Research

When: Spring

What: MATH 396

Who: Prof. Kristina Garrett

Prof. Garrett will be offering a research course in the spring to 3-4 students! This course is ded-

To submit an article, event, or anything else for publication in the Mess, email mcgowa2@stolaf.edu; to receive the Mess digitally each Friday, email habero1@stolaf.edu; visit <http://wp.stolaf.edu/mscs/mscs-mess/> for a digital archive of previous MSCS Mess issues.

icated to the joy and challenge of doing original mathematics research. Never done math research before? Perfect! This course is great for anyone interested in digging into a problem and discovering something new! In this course, you will learn some math in my research area (combinatorics), and then take control over a significant project - from start to finish - in a group setting. The prerequisite is MATH 252 and a desire to work closely with others. Registration is by permission only, so if you're interested, please send **Prof. Garrett** some relevant background information (classes you've taken and how they went, a math prof who knows you well), and also write a sentence or two about why you want to be in the course.

Got Registration Woes?

Wondering what class to take next for your major? Not sure where to start with a concentration? Curious about courses that are good for grad school preparation? **Talk with an MSCS prof!** They'll be happy to talk about next steps, no matter where you are in your process.

David McGowan, Editor
Laura Boehm Vock, Faculty Adviser
Ellen Haberoth, Mess Czar