

MSCS



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Department of Mathematics, Statistics, and Computer Science
St. Olaf College, Northfield, MN 55057
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Apply for Math 396: Directed Undergraduate Research!

I (Professor Berliner) will be offering **Math 396: Directed Undergraduate Research** next fall to three students (and again next spring to three more students). This course is dedicated to the joy and challenge of doing original mathematics research. You've never done math research before? Perfect! This course is great for everyone: future teachers, future graduate students, future industry professionals, or just plain curious people. In this course, you will learn some math related to my research area, then take control over a significant project from start to finish.

My research areas are linear algebra, graph theory, and "combinatorial matrix theory," which is at the intersection of graph theory and matrix theory/linear algebra. A graph (sometimes called a network) can be thought of as a collection of vertices (dots) and edges connecting some of the vertices. They're super fun to play with and draw! It also turns out every graph can be turned into a matrix. Combinatorial matrix theory is an area in which we can ask questions about graphs and then do some linear algebra to get some answers. Or, we ask some questions about linear algebra and then look at graphs to get answers. So, if you like

playing around with examples but also seeing connections between different ways of thinking, this may be for you!

Here are some details about the course:

- The Class & Lab time will be our official meeting time. Some meetings can be flexible.
- We will spend the first part of the semester reviewing and learning some new math, after which you will take control of a research project. You will then be expected to meet with me 1-2 times per week as a team, meet with each other 1-2 times a week, and do independent work as well.
- The **prerequisite is either Math 244 or Math 252 or my permission**. Ideally, you will have also enjoyed linear algebra (it's OK if you don't remember it well, though).
- You should enjoy working on math with others - this is fundamentally a group effort.
- The course carries the OEP attribute for the Ole Core!

- **Registration will be by permission only.** Apply by filling out the [Google Form](#)

I hope you will consider applying for the course. It will be challenging, rewarding, and fun!

If you have any questions, please don't hesitate to email me (berliner@stolaf.edu) even though I am on sabbatical.

APPLICATION DEADLINE: FRIDAY, APRIL 7

ADVISING WEEK: April 10-14

NOTIFICATION of ACCEPTANCE: Sometime April 14-17

REGISTRATION: April 18-20

Apply for Distinction in Computer Science

The application for Distinction in Computer Science is open. Please check your emails for the application! The application is due on Friday, May 5 at 5:00pm.

Natural Sciences and Mathematics Honors Day Poster Session

Hello, Everyone. You are invited to register for the 2023 Natural Sciences and Mathematics Honors Day Poster Session. Whether you did research at St. Olaf (last summer or during the current academic year) or elsewhere, you are eligible to participate. Please share this invitation with your family and friends and let them know that we would be delighted to have them join us on campus for this almost-end-of-the-year celebration.

Details

- The celebration will be on **May 6th**, 4-6pm on the 4th floor of the Regents Natural Science [RNS] building.
- Registration deadline: 5:00 pm, **April 28th**
- Register online [here](#).

If you already happen to have a poster, you can just plan to present it on May 5th. Otherwise, poster printing will be done by the St. Olaf Print Center. Thanks to the generosity of the Paul and Mildred Hardy Endowed Fund, there will be no cost to you. Posters will be displayed on easels throughout the 4th floor of RNS. You will be assigned a specific poster number and will be able to place your poster on the corresponding easel between 5:00 pm Thursday (May 4th) and 9:00 am Friday (May 5th). Students with odd-numbered posters should plan to present their research (be present at their poster) for discussion/questions from 4:00 – 4:45 pm, and those with even-numbered posters from 5:00 – 5:45 pm.

Please visit the Honors Day Poster Session web page for all the details!

If you have any questions, please contact either your advisor or Kathie Towler (RNS260, towler2@stolaf.edu).

Vesuvius Challenge

Interested in machine learning and computer vision? Well nows the time to put your skills to the test! There is currently a [Vesuvius Challenge](#) which involves using these techniques to read preserved scrolls, Herculaneum Papyri. There are prizes of \$700,000, \$50,000 for two sepecific challenges - their requirements are three sentences, give them a look! Additionally there are \$380,000 which have not been allocated to a specific challenge, so stay tuned!

Volunteer/Experience Opportunities

REUs: Summer Research in MSCS

If you are interested in being paid to collaborate on a research project with students from around the country off campus this summer, keep reading! To look through the programs available for Research Experiences for Undergraduates (REU's), check out this [link](#)! Most of them are done over the course of 8 – 10 weeks during the summer and include stipends around \$4,000. Applications will open in November and most will be due between late January and early March.

Read the eligibility for each because many are restricted to certain years in school, certain

majors, or US citizenship. The website has a variety of tabs at the top to help you find programs that apply to you! In particular, there are lots available for international as well as domestic students!

Most applications require a personal statement about why you would like to participate in the REU as well as letters of recommendation, so start looking into these sooner rather than later.

Make sure to reach out to us (mercur1@stolaf.edu and mainel1@stolaf.edu) if you have any questions!

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/mscs-mess/> for a digital archive of previous MSCS Mess issues.

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