

MSCS



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

Title: **The Shift and Backward Shift Operators and Their Generalizations**

Speaker: Meredith Sargent '06

Date: 12/2/22, 3:30pm

Place: RNS 310

In the Hardy space of the unit disk, the adjoint of the “multiplication by z ” operator (also called the shift) is the backward shift. Both the shift and its adjoint are useful for modeling other operators and shift-cyclicity has connections to polynomial approximation. In this talk, I will discuss the classical background, including the one variable Hardy space, shift (and backward shift) invariant subspaces, and the SzNagy-Foias model before generalizing to the several variable and (time permitting) noncommutative cases.

Volunteer/Experience Opportunities

REUs: Summer Research in MSCS

Prof. Mercurio and Prof. Mainellis will be holding an evening workshop to help with REU applications and personal statements! They are planning to meet

in the 6th floor lounge in the RMS building, from 6-7pm on Wednesday, December 7th.

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! And keep an eye on your email for an invitation to an REU application workshop coming later in November!

Make sure to reach out to us (mer-

curl@stolaf.edu and mainel1@stolaf.edu) if you have any questions!

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 us-

ing 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.

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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