

# MSCS MESS

Department of Mathematics, Statistics, and Computer Science  
St. Olaf College, Northfield, MN 55057  
3 May 2019 | Volume 47, No. 23

## Today's Research Seminar

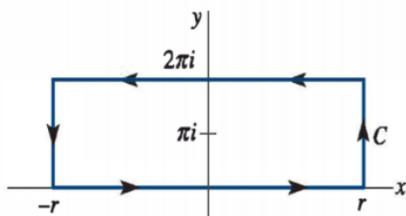
Title: *Improper* Improper Integrals:  
An Introduction to the Cauchy  
Principle Value  
Speaker: Bobby Benim  
Time: 3:30 PM  
Date: May 3  
Place: RNS 310

## Next Monday's Colloquium

Title: Applying Statistics in Social  
Epidemiology: Understanding  
Health Inequities  
Speaker: Nicole Novak  
Time: 3:30 PM  
Date: May 6  
Place: RNS 310

35. Use the contour shown in **FIGURE 19.6.5** to show that

$$\text{P.V.} \int_{-\infty}^{\infty} \frac{e^{ax}}{1+e^x} dx = \frac{\pi}{\sin a\pi}, \quad 0 < a < 1.$$

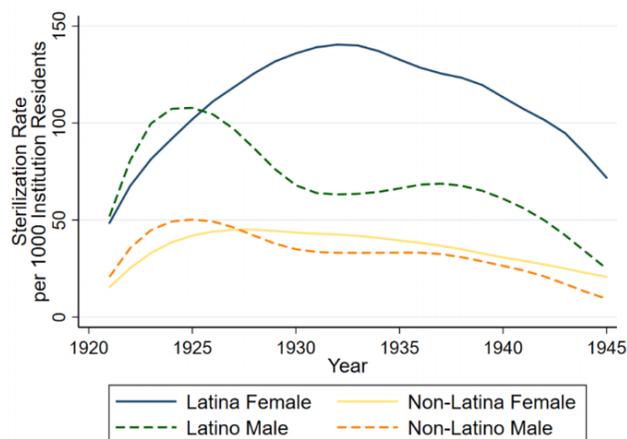


**About the Talk:** We will recall improper integrals and then investigate a natural extension of certain improper integrals, the Cauchy Principle Value. We will look into the details of an interesting example that appears in a table of integrals by Gradshteyn and Ryzhik in 1943.

## Honor's Day Poster Session

Time: 4:00 PM  
Date: May 3  
Place: Fourth Floor of RNS

**About the Event:** Come to the Honors Day Poster Session to see what students have been researching! There will be over 50 research posters from 100+ involved students. A list of student presenters and abstracts is available [here](#).



**About the Talk:** Epidemiology is the “basic science of public health”. Epidemiologists often use statistical methods to examine population-level patterns in risk of disease and identify strategies for intervention. Social epidemiology is a growing subfield of epidemiology that examines the causes of inequalities in health between different social groups. I’ll share my own path to this field and present case studies where I’ve applied epidemiologic methods to understand inequities in reproductive health for Latinx populations in the United States.

**About the Speaker:** Nicole Novak is a social epidemiologist and community health researcher with a focus on health equity and health disparities in the United States. She focuses on understand-

ing structural and policy influences on the health of immigrants, Latinos, and rural residents.

## Apply to Ole Development Team!

What is ODT? It's a team of three students who help to maintain Oleville.com and build technologies for SGA and the student body. Members will be expected to commit about three hours a week. This is a terrific opportunity to increase your experience with technology and would look great on a resume. Apply by May 10<sup>th</sup> here.



*To submit an article, event, or anything else for publication in the mess, email [jadkow1@stolaf.edu](mailto:jadkow1@stolaf.edu); to receive the Mess digitally each Friday, email [habero1@stolaf.edu](mailto:habero1@stolaf.edu); visit <http://wp.stolaf.edu/mscs/mscs-mess/> for a digital archive of previous MSCS Mess issues.*

## Call for Math Research

Every year, Professor Dietz edits a research volume in mathematics that contains all the papers written by Ole math majors over the past year, whether under the guidance of a St. Olaf professor or at an REU. This “publication” is an in-house collection, so it doesn’t interfere with actually publishing your paper in a proper journal; it’s just a fun gathering of all the work that Oles have done. If you have something to contribute, reach out to Professor Dietz ([dietz@stolaf.edu](mailto:dietz@stolaf.edu)) soon. It should specifically be a math paper rather than a paper in stats, CS, or some other related field.

Will Jadkowski, Editor  
Dave Walmsley, Faculty Adviser  
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