

UNDERGRADUATE MATH SEMINAR

The next math seminar will be

DATE: **THURSDAY, April 24**

Time & **12:30 – Refreshments in Bailey 204**

Location: **12:50 – 1:45 Seminar in Bailey 207**



Professor Jenn Qian

The seminar will be given by Union College Math **Professor Jenn Qian**
Title: An Introduction to Complex Numbers and Conformal Maps

Abstract: Conformal mappings - angle-preserving mappings - have many real-life applications. To name a few, it has applications in Cartography (map-making), Aerodynamics, Electrostatics & Fluid Dynamics, Medical Imaging, etc. In today's talk, we will start from the basics of complex numbers to complex differentiation. Then we will present how being differentiable in the complex sense is equivalent to being an angle-preserving mapping. A concrete example of the conformal map $\cos(z)$ will be presented at the end.

Pieces from Thesis, by Jacob Schuckman

*Jacob wrote his senior thesis this past fall and winter under the guidance of **Professor Jeff Hatley**.*

This Fall and Winter, I wrote my thesis, advised by Professor Jeffrey Hatley. For my thesis, I learned about scheme theory and wrote an expository paper on the subject. Schemes are mathematical spaces studied in the field of algebraic geometry. Every polynomial equation determines a scheme: the space of solutions to that equation. Such spaces may be glued together to form more general schemes. Scheme theory provides a uniform language for studying geometry over different number systems.

Writing mathematics is a very different experience from reading or being taught math. In writing my expository paper, I had to overcome challenges I had never considered before. For example, when stating a theorem dependent on a natural number n , do you preface with "Let n be a natural number"? Or do you say "For all natural numbers n , ..."? Or do you leave n implicit? Such considerations must be made all throughout a paper. After this experience, I have a greater understanding of what goes into mathematics communication and a greater respect for those who do it well.

Through completing my thesis, I learned a lot of math but also how to write math. To those who will be writing a thesis in the future: your thesis is a great opportunity to learn; you should take advantage of it.

News from the Clubs

- **Association for Women in Mathematics (AWM).** This spring term, AWM meets on **Mondays** during **common hour** in **Bailey 204**. Come join the group to help plan upcoming activities.
- **Math Club. Elections and Game Night!** If you would like to run for a position in the Math Club (President, Co-President, Treasurer, Co-Treasurer, or PR-Chair) then please send an email to **Professor Rylan Gajek-Leonard** (gajekler@union.edu). Voting will take place **Friday, April 25th in Bailey 204 at 3:15 PM**. After voting we will be having a **Game Night!** There will be a variety of different board games, as well as snacks.



Math Club members enjoying origami and pizza, April 18, 2025. From left: Henry Howe, Nolan Blake, Molly Fry, Izzy Petersen.

Pi Mu Epsilon Application Deadline: Thursday at Noon
 (see [recent newsletters](#) for requirements)