

UNDERGRADUATE MATH SEMINAR

The next seminar of the winter term will be

DATE: **THURSDAY, February 24**

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

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

In this seminar, **Professor Leila Khatami**, an algebraist in the Union College Math Department, will present the following talk.



Title: The Hidden Mathematics of SET

Abstract: The card game SET hides a surprising amount of mathematics behind a simple matching rule. In this talk, we will use the game to explore ideas from combinatorics and finite geometry, including how cards can be viewed as points, sets as lines, and how questions about finding or avoiding sets lead to interesting mathematical problems. The talk is inspired by the paper *The Card Game SET* by Benjamin Lent Davis and Diane MacLagan.

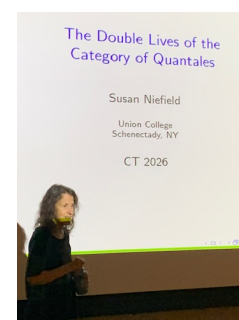
What Do Math Faculty Do in the Summer?

Some highlights of 2026 summertime activities by math faculty.

- **Professor Sean Carney**, an applied mathematician, spent the summer playing basketball on campus and developing his work on inverse problems and robust optimization that he is preparing to submit to a journal. He also traveled to Tennessee, China, and Texas.
- **Professor Rylan Gajek-Leonard**, a number theorist, submitted a paper with Antonio Lei on an explicit construction of signed p -adic L -functions for non-ordinary modular forms. His dog, Ginny, also worked hard and obtained her AKC Rally Novice title at the Mid-Hudson Kennel Association dog show in August.
- **Professor Jeff Hatley**, a number theorist, along with Union alumnus Zack Porat '20 (now a Visiting Assistant Professor of Mathematics at Bucknell University) led a team of graduate student researchers as part of the Rethinking Number Theory 7 program, resulting in a paper, "Distinguishing Elliptic Curves Modulo p and Identifying Images of Product Representations". Professor Hatley also taught in the summer AOP program at Union.
- **Professor Emerita Susan Niefeld** delivered an invited address at the International Category Theory Conference 2026 in Baltimore.
- **Professor Christina Tønnesen-Friedman** went to the Mittag-Leffler Institute in Sweden for a week to participate in the conference "Degenerations in Complex Geometry." She gave a talk entitled "Robustness of CSC Sasaki existence under the Sasaki join operation." At the institute she was also able to spend some time working with collaborators on a paper in progress.



Professor Gajek-Leonard and Ginny



Professor Niefeld giving a keynote address



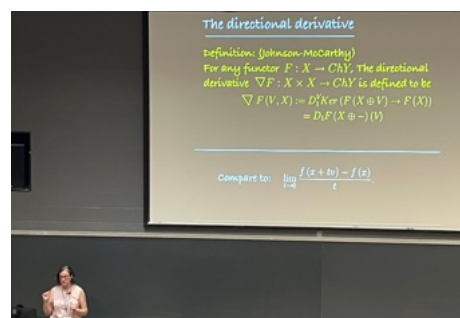
Professor Tønnesen-Friedman at a conference in Sweden

Turn the page – there's more news from the math department!

Union College Math Department Hosted a Big Research Conference

This past weekend, Friday, September 18 through Sunday, September 20, the Union College Math Department welcomed nearly 100 mathematicians to campus for a research conference. The conference had four parallel sessions in the following fields, with organizers as noted.

- **Algebraic Topology**, Brenda Johnson (Union College) and Marco Varisco (SUNY Albany). The session on algebraic topology showcased a wide range of work in algebraic topology, including, but not limited to, homotopy theory, algebraic K-theory, and interactions between category theory and these fields.
- **Applied Topology**, Ellen Gasparovic (Union College) and Greg Malen (Skidmore College). The applied topology session featured talks on recent developments in the fields of applied topology and topological data analysis. There were talks on both theoretical research as well as on computational methods and applications.
- **Computational Mathematics**, Sean Carney (Union College) and Jihun Han (SUNY Albany). This session was part of the first annual Upstate New York Computational Mathematics Day
- **Differential Geometry and Geometric Analysis**, Jeff Jauregui (Union College) and Christina Tønnesen-Friedman (Union College). This session had talks on mathematical general relativity, Kähler and Sasakian geometry, minimal surfaces, and geometric PDEs.



Professor Brenda Johnson's work gets acknowledged in Bauer's plenary address.

There was also a plenary speaker from each session who delivered a talk to the entire conference. These were given by **Julie Blackwood** (Williams College), **Carina Curto** (Brown University), **Lan-Hsuan Huang** (University of Connecticut), and **Kristine Bauer** (University of Calgary).

Support for the Union College Mathematics Conference 2026 was provided by a generous gift by David ('74) and Jeanette Wagner and Union College.

Applying to Graduate School in Math?

If you are considering applying to graduate school in math, start your planning now. **Professor Grant Moles** is the graduate school sage in the math department. Reach out to him to discuss your thoughts and for advisement about

Join the Math Club!

The Math Club held its first meeting of the term this past Friday, September 18. If you are interested in planning and/or participating in social, math-related activities, join the club! Contact **Mukundan Thanigaivelan** or **Professor Rylan Gajek-Leonard** for more information.



Math club members at their first meeting

Free peer tutoring at the **CALCULUS HELP CENTER!**

Sunday - Thursday: 7:30 – 10:00pm

Sorum House Seminar Room