

UNDERGRADUATE MATH SEMINAR

This week, there will be **two** late-afternoon math seminars, with refreshments begin served beforehand in Bailey 204, the Math Common Room. We hope to see you there!

- **Wednesday, January 22, 4:45 – 5:45pm in Bailey 207**
- **Friday, January 24, 4:45 – 5:45pm in Bailey 207**



Union Represented at World's Largest Math Meeting: JMM 2025

The American Mathematical Society (AMS), in collaboration with 16 partnering mathematical organizations, held its annual [Joint Mathematical Meetings](#) (JMM) in Seattle, Washington from January 8 through January 11. On its website, the JMM is touted as “*the world’s largest gathering of mathematics professionals and enthusiasts.*” The Union College math department and its students are typically well-represented at the JMM, and this year was no different. Below is a report from some Union attendees!

This past weekend, students Audrey Benson, Hunter Gould, Grace Newcombe, and Josh Vaidman attended the Joint Mathematics Meetings in Seattle, Washington, the largest math conference in the world, to present their research completed in conjunction with Professor Phaniel Mariano. The group has been researching the growth rate of random matrices since Winter 2024, and their research was published in Fall 2024. The students presented a poster at one of the undergraduate poster sessions amongst undergrads from all over the world! Furthermore, Audrey Benson gave a talk about her thesis work she has been doing with Professor Mariano as well. “It was such a cool experience to be surrounded by so many incredibly bright individuals who loved math just as much as we do!”



From left to right: Josh Vaidman, Hunter Gould, Audrey Benson, Grace Newcombe, and Professor Phaniel Mariano.

Interested in seeing what research in math is all about?

One way is to participate in an REU.

What's that?

Turn the page and find out!

Free Peer Tutoring in Calculus Courses

CALCULUS HELP CENTER!

Sunday - Thursday: 7:30 – 10:00pm in the Sorum House Seminar Room

Summer Research Experiences for Undergraduates (REUs) in Math

Are you interested in learning new mathematics and trying your hand at mathematical research, and getting paid for it? Then consider applying for one of the many National Science Foundation (NSF) sponsored Research Experiences for Undergraduates (REUs). These are small summer programs that last 6-8 weeks, hosted by several universities and colleges around the United States. This summer, some will be held remotely, and others might be held at the host university. The range of research fields covered by different REUs is wide, including algebra, computational mathematics, differential geometry, data science, discrete math, knot theory, mathematical biology, and more. There is something for everyone!

Who should apply? Math majors, typically in their junior or sophomore year, though some programs accept applications from current seniors, and even first-year students. Most applicants to REUs are considering going to graduate school in math and would like to see what math research is about. Most REUs require participants to be US citizens or permanent residents. In terms of coursework, most programs require participants to have at least had multivariable calculus through Math 117, a course similar to Math 199, and/or a course beyond Math 199 that requires proof-writing.

What are the options and how does one apply? The primary site listing REUs, their descriptions, the application requirements, etc., is hosted by the American Mathematical Society (AMS).

<http://www.ams.org/programs/students/emp-reu>

The AMS website and the corresponding NSF site can be a little difficult to navigate. So here is another site that has links to many REUs.

<https://sites.google.com/view/mathreu/>

The advice offered at this website is excellent, and includes

- *Apply to several different REU sites.*
- *Do not limit yourself to only certain topics or certain geographical areas.*
- *Follow the directions.*
- *Carefully read all your application materials, and have someone else read them as well.*
- *Tailor each application to specifically address the REU for which you are applying*
- *Don't sell yourself short.*
- *Think carefully about your letter writers, and make sure that they know you well*
- *If possible, get more senior people to write letters.*
- *Give your letter writers sufficient time (at least one month) and give them additional information.*
- *Start your application process early.*
- *Have a backup plan.*

Act soon! Most of the application deadlines to REUs are in February or early March.

What now? Browse through the REU programs, get excited by the opportunities, and start the application process, including securing letters of recommendations. In addition, feel free to contact the math department's REU advisors, **Professors Jeff Hatley** (hatleyj@union.edu) and **Rylan Gajek-Leonard** (gajekler@union.edu), to discuss the different programs and your options.

Association for Women in Mathematics (AWM) to Meet on Tuesdays

Union's chapter of the Association for Women in Mathematics (AWM) is planning on meeting weekly on **Tuesdays at 2:00 in Bailey 204, the Math Common Room**. For more information, attend a meeting(!) and/or contact one of the chapter co-presidents **Audrey Benson** and **Frankie Morone**.