

UNDERGRADUATE MATH SEMINAR

The next math seminar is

DATE: THURSDAY, May 21

Time & 12:30 – Refreshments in Bailey 204

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



Prof. Julius Barbanel

Union College **Professor Emeritus Julius Barbanel** will give the following talk:

Title: Doubling the Cube: How it was done by the ancient Greeks

Abstract: According to legend, sometime in the fourth century BCE, the people in the Greek city of Delos were suffering from a terrible plague. Relief was sought from the oracle at Delphi. Delos had an altar in the shape of a cube that was used in religious ceremonies, and the oracle told the people of Delos that they could rid themselves of the plague if they constructed an altar double the volume of that altar. How would one do this? Some of the most brilliant of the ancient Greek mathematicians worked on this problem. Did they solve it? Yes and No.

In a previous talk this term, **Professor Emeritus Karl Zimmermann** explained the “No”: The cube cannot be doubled using standard straightedge and compass constructions. We will explain the “Yes”. We present two methods of doubling the cube that involve techniques beyond straightedge and compass constructions. One is due to Eratosthenes (276-194BCE) and is a mechanical argument involving moving triangles. The other is due to Archytas (428-350BCE) and involves a three-dimensional construction in which a certain point is determined as the intersection of three surfaces of revolution.

Special Interdisciplinary Math Talk by Alumnus, Nikhil Srivastava '05

Tuesday, May 19, 5:30 PM in the Nott Memorial

As part of an annual Distinguished Lecture Series in Interdisciplinary Mathematics, Computer Science and Engineering supported by an NSF LEAPS-MPS grant, the award-winning and highly acclaimed mathematician and computer scientist, **Professor Nikhil Srivastava** from the **University of California, Berkeley** and member of the **Union class of 2005**, will present a talk entitled

The Uncanny Valley of Proof

The talk will discuss how AI has evolved from struggling at middle school math to solving research-level math problems, and perhaps what lies ahead.



Prof. Nikhil Srivastava

Interested in meeting and talking with Professor Srivastava, read the next article about Math Club!

Two Math Club Events This Week

Though the spring term is winding down, Math Club is still going with full force!

- The Math Club will be holding an informal conversation over coffee with **Professor Nikhil Srivastava '05**, a math professor at the University of California, Berkeley on

Wednesday, May 20, 1:30 – 2:30 pm, Math Common Room (Bailey 204)

You can chat about his path since Union, his work, opportunities in academia – whatever is of interest to you.

(Turn the page for more!)

- The Math Club, along with the Society of Physics Students, is organizing a trip to the **Schenectady Museum of Innovation and Science, miSci**. Attending with the clubs will get you *free entry* and will include a planetarium show!

Sign-ups will start on Monday, May 18th at common hour in the StuAct office.

The trip itself will be **Saturday, May 23**, leaving from Old Chapel Circle at 2:00 pm (rain date: May 24). As the museum is just down Nott Terrace, the plan is to walk to the museum so please wear appropriate footwear and prepare for the weather.

Fall Term Registration – plan your math courses!

With fall term registration just around the corner, Tuesday, May 26 – Thursday, May 28, remember to connect with your faculty advisor to discuss and plan your schedule. To help you along, here is a list of some math courses that are suitable for math majors and minors.

- Math 199** is the department's "bridge course," intended to help students make the transition from computationally oriented courses to more theoretical proof-writing courses. This is a **required** course for all math majors and minors that is *usually* taken after Math 115. This course carries WAC-R credit. *MTH-199-01: MWF 10:30-11:35*. Note this was a pre-approval course
- Math 221 – Mathematical Cryptology**. This course will provide an in-depth look at the mathematical theory underlying modern methods to accomplish the secret transmission of data. This is another good choice for students coming from Math 199, as well as more advanced students. Note that students generally may not take both Math 221 and Math 235 (Number Theory) – choose wisely! This course carries GDQR credit. *MTH-221-01: MWF 11:45-12:50*.
- Math 234 - Differential Equations**. A first course in differential equations that takes a somewhat more theoretical approach than its 100-level counterpart, Math 130. Students may only take one of these two courses. This course carries GDQR credit. *MTH-234-01: MWF 1:50-2:55*.
- Math 336 - Real Variable Theory** is a core course that is **required** for math majors. In this course, you will learn some of the theoretical underpinnings of the calculus of functions whose domain lies within the set of *real* numbers. *MTH-336-01: MWF 10:30-11:35*.

Fall Term Calculus Help Center Tutoring Positions Available – Apply Now!

The Math Department is now accepting applications for vacant **Calculus Help Center (CHC) tutoring positions**. Tutors in the fall work in the CHC one fixed night per week, Sunday through Thursday, from 7:30-10:00pm.

Qualifications: Calculus through Math 115 with grades of no less than A-. Preference will be given to students who

- have also completed Math 117 (with a grade \geq A-),
- are declared math majors,
- are considering becoming a math teacher or pursuing graduate work in mathematics, and
- have other tutoring experience (not necessary, though).

**CHC Tutoring
Application Deadline:**

Tuesday, June 2 at NOON

To apply for a position, send an email to Professor Paul Friedman (friedmap@union.edu) expressing your interest, listing your mathematical background, including coursework (term, professor, and grade) and tutoring experience (if any), and discussing why you think you would be a good tutor.