

The Almagest

The bi-weekly newsletter of the Department of Mathematics and Computer Science. Your trusted source for news.

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Alma College
Alma, MI 48801

Math Colloquium - December 4th

Take one of your shoelaces and tie it into a super messy knot. Hand this knot to your friend. With enough time, will your friend be able to unknot your knot?



Take your other shoelace and tie it into the same super messy knot. Now, this time, glue the ends of your shoelace together so that you've made a knotted loop. Hand this knotted loop to your friend. With enough time, will your friend be able to unknot your knotted loop?

What do these questions have to do with math? How can math be used to model and study knotted loops? Can we classify these knotted loops to make ourselves a "periodic table of knots"? Are there any applications for this stuff? Come find out!

A Friendly Introduction to Knot Theory

Presenter: **Dr. Adam Giambrone**
Date: **Thursday, December 4th**
Time: **4:00**
Place: **SAC 113**

Refreshments at 3:50.

Math Team Places 5th in MATH Challenge

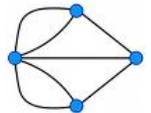
On November 1st, seventy-five teams from 32 different schools (mostly small colleges) participated in the 20th annual **MATH Challenge**, a team-oriented math competition for undergraduates sponsored by Alma College. Alma entered three teams, and the team of **Bryan Austin, Luke Bent**, and **Jason McKelvey** finished in 5th place. This team was the top team from Michigan, finishing

ahead of all teams from the fifteen other schools from Michigan. Our two other teams finished in 27th and 47th place.

The top ten teams in this year's competition were:

1. Colgate University (NY)
2. Taylor University (IN)
3. Taylor University
4. DePauw University (IN)
5. **Alma College**
6. Calvin College
7. Kalamazoo College
8. Hillsdale College
9. Wheaton College (IL)
10. Calvin College

Senior Presentation - Dec. 2nd



Christopher McDonald will be giving his senior presentation on Tuesday, **December 2nd** at 4:00 in SAC 113. His topic is: *The Königsberg Bridges Problem*. Refreshments at 3:50.

Why Should You Attend a Summer REU?

As the semester nears an end, now is an excellent time to start thinking about applying for an REU, or research experience for undergrads. Universities across the country are preparing to open their doors this summer for undergraduate students just like you, and now is the time to take advantage of the opportunity to dive into mathematics and reap the many benefits of an REU.

Meet People and Build Connections Not only will REU participants have the opportunity to work with fantastic faculty at the college or university hosting their REU, but they have the opportunity to interact with and build friendships with other REU participants too. An REU can connect you with

people just as interested in and excited about mathematics as you. Your roommates, fellow researchers, and advisors all pose the potential to be friends and professional connections you maintain for the rest of your life.

Visit Someplace New Participating in an REU allows you the opportunity to explore a new city. Many of the universities that host REU students are located in bustling college towns or cities with no shortage of fun and interesting things to fill your free time with.

Learn New and Interesting Math An REU also provides the opportunity to work with concepts in mathematics that few students will ever see in a mathematics course. Whether investigating a problem within a familiar branch of mathematics or exploring something entirely new, an REU enables undergraduates to expand their knowledge and work in depth on new topics in mathematics.

Gain Experience If learning new math wasn't enough, an REU is also a source of many other types of experiences. From public speaking (perfect for preparing Alma students for their senior presentations) to research strategies and techniques, the benefits of an REU extend beyond the realm of mathematics—providing work experience to benefit even the most polished resume.

Earn Money Last, but certainly not least, REU participants gain all these benefits on top of a healthy stipend, often nearing \$3,000-\$4,000 dollars for 5-8 weeks.

To check out REU's offered last summer and find REU's approved for the summer of 2015, visit <http://1.usa.gov/1xZqbYN> *Katie Krauss*

Solution to Previous Puzzle

Which of the numbers are in the wrong order?

2	7	9	3	8	4
3	6	4	2	6	9
9	8	6	7	7	3
4	4	8	6	2	2
8	9	7	8	3	7
6	3	2	4	9	6



Isaac Burrell solved the puzzle: if you begin in the lower right hand corner, you should notice that the sequence 6, 7, 2, 3, 9, 4, 8 is repeated as you weave your way through the square of numbers. When you arrive at the 6 and 8 in the third column, the two numbers are reversed.

Puzzle of the Bi-week

Here's a Martin Gardner puzzle: Five toothpicks form the giraffe shown to the right. Change the position of just *one* toothpick and leave the giraffe in exactly the same form as before. The reformed animal may alter its orientation or be mirror reversed but must have its pattern unchanged



A prize of \$1.00 will be awarded to the FIRST student who submits a correct solution to Prof. Sipka.

Student assistant: Katie Krauss
 Faculty advisor: Tim Sipka
 Distribution: Deb Smith

If you would like to submit an announcement or a short article, please send it via e-mail to Tim Sipka (sipka@alma.edu).

Many of us will say this on Thanksgiving Day.

