

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

Mathematics Colloquium

In recent years there has been an increase in the number of summer Research Experiences for Undergraduates (REUs). Most of these programs are designed for students who have completed their junior year and who have taken certain upper-level courses such as linear algebra, abstract algebra, analysis, or number theory. But are students able to conduct undergraduate research before taking these advanced courses? Can we engage first-year students in undergraduate research? The answer is YES! In this talk, **Dr. Aklilu Zeleke**, Professor of Mathematics at Michigan State University, will discuss examples of research projects completed by undergraduates at all levels. He will also tell us about the summer R.E.U. program he is directing at M.S.U., a program open to first-year students.

Undergraduate Research in Mathematics: An Opportunity for All

Presenter: **Dr. Aklilu Zeleke**

Date: **Tuesday, February 7th**

Time: 4:00

Place: SAC 109

Refreshments at 3:50.

Important Dates for Seniors

January 27: Topic of your presentation is due.

February 21: MFAT 5-7 pm

March 9: Your paper is due.

March 13: Presentations begin @ 4:00 and
Senior dinner @ 5:30

Focus on Faculty: Dr. Andrew Thall

Dr. Andrew Thall was born and raised in Kalamazoo, Michigan with his parents and two brothers. He attended Kalamazoo College and received his undergraduate degree in mathematics. After taking eight years off



from school working different jobs, such as a baker, Dr. Thall made his way to Chapel Hill to pursue his doctorate in Computer Science and Medical Images Analysis from University of North Carolina. He switched from math to computer science because computer science was an up-and-coming field and UNC had state of the art equipment to help him learn. Dr. Thall has recently published a paper on Mersenne Prime testing on graphics cards.

Dr. Thall has innumerable programming languages in his repertoire such as Java, Python, and C++. He has been in the Alma Bubble since 2008 and loves everything about being here; he enjoys the fact that it is a learning institution as opposed to a research institution, although he still considers himself a scientist.

In his free time, Dr. Thall loves to play music, bass, electric, acoustic, hand drums, etc., and hopes to one day record his music at a professional level. He loves punk rock, graphic novels, and comic books. Dr. Thall also enjoys spending time with his wife of fifteen years, Nancy, and fourteen year old son, Robert. One day, after he retires from Alma, Dr. Thall plans on taking a food tour of Paris and travel the rest of the world. *Jon Young*

Michigan Undergrad Math Conference

The 14th Annual Michigan Undergraduate Mathematics Conference (MUMC) will be held on **Saturday, March 3rd**, at Siena Heights University. The sponsors are hoping that the spring conference date will allow students more time to put together a presentation or poster. The meeting will give undergraduate students the opportunity to present results of their projects and research, and to listen to topics that are of interest to other undergraduate students in our region. *Any topic* in undergraduate mathematics that is likely to be of interest to other undergraduate mathematics students is appropriate, be it in history, education, research, or anything between. We are scheduling the talks for 15 minutes each with five minutes between talks.

Spring Term Course

Registration for spring term begins on **February 6th**. And if you're looking for a math course, there is one upper-level course offered: **MTH 391, *Introduction to Graph Theory***. In this course you'll be introduced to the major concepts and applications of graphs, digraphs, and networks. By the way, a *graph* is simply a finite collection of vertices and edges depicting some binary relationship among some objects. We'll study many interesting properties of graphs and discuss a variety of applications in areas such as transportation, games, and puzzles. Prof. Sipka is the instructor, and the pre-requisite for the course is MTH 122 or permission.

Solution to Previous Problem

For 10 days you must take exactly 1 *A* and 1 *B* pill at noon, or you will die. The pills are indistinguishable! All goes well until day 3. On this day, you shake 1 *A* and 2 *B* pills into your hand and do not know which is which. Can you survive? If so, how?



Gwendolyn Greer was the first to solve the problem. She said: "You take the three pills you have, and cut them all in half, making sure you put one half of each into 2 piles. You then take an extra *A* pill, cut that in half, put a half in each pile. You now have two days worth of the correct pills."

Problem of the Bi-Week

Find the sum

$$1 \times 1! + 2 \times 2! + 3 \times 3! + \dots + 100 \times 100!$$

Use of any technology is strictly forbidden!

A prize of **\$2.00** will be awarded to the **FIRST** student who submits a correct solution to Prof. Sipka.

Visit the Math Help Center

For MTH 113, 121, & 122:

Monday through Thursday: 7-10 pm
SAC 216

For MTH 116:

Thursday: 7-10 pm in SAC 213

Student assistant:	Jonathan Young
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).