

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

Senior Presentations

Please make an effort to attend the final two senior presentations of the term. They begin at 4:00 pm in SAC 113 on the next two Tuesdays.

Tuesday, April 1st

Alex Hegedus: *Gödel's Incompleteness Theorem*

Tuesday, April 8th

Annie Bruce: *Islamic Geometric Patterns*

Seniors On The Move

In a few short weeks, our seniors will begin the next chapters of their lives, and we thought you'd like to know a little bit about their plans.

Adrien Allward has accepted a position as a Quality Analyst in the Underwriting Systems Department at Auto-Owners Insurance.

Kirstyn Baker has accepted a job as an Associate Software Developer at Auto-Owners Insurance.

Jon Bricker is headed to grad school to study mechanical engineering. He's been accepted at GVSU and is waiting to hear from a few others.

Ben Brow will be student teaching at Breckenridge High School in the fall; then he'll look for a math teaching position.

Annie Bruce will be working at Auto-Owners Insurance in the TPP Web Systems department, developing web apps that the agents use.

Katie Dwenger will be working at Auto-Owners Insurance. She'll be working in their automobile systems department as a software developer.

Alex Hegedus is off to grad school to study applied mathematics. He'll attend either the University of Michigan or UC-Davis.

Erica Kamm has no solid plans as of right now, but would like to do some more traveling before looking for a permanent job. She may eventually go to grad school.

Jesse Monarch has a job as a software engineer at Plex Systems in Troy, Michigan. He'll design and maintain business software for databases.

Emily Noble will be looking for a math teaching position in the southeast Michigan area. She also plans to continue singing and participating in local theatre productions.

Amanda Shaffner will be looking for a math teaching position somewhere in the U.S. or perhaps in a foreign country.

Danae Sietsema will be student teaching in the fall at Byron Center High School; then she'll look for a math teaching position.

Lauren Steinhurst is looking for a job. She has an interview with Auto-Owners; and if she's hired, the company may be taken over by Alma alums.

Cory Townes isn't sure what he'll be doing next fall, but eventually he'll attend grad school to study physics.

The faculty in the Department of Mathematics and Computer Science wish you well.

New Members of PME

Pi Mu Epsilon, the Mathematics Honorary, welcomed nine new members this spring. They are:

Doug Beckman, Jacob Blazejewski, Tyler Foley, Joonas Kotka, Jason McKelvey, Lillie Miller, Tom Paron, Krystle Reiss, and Christine Wiersma.



Other members of PME are: **Kirstyn Baker, Annie Bruce, Katie Dwenger, Alex Hegedus, Brandon Krause, Katie Krauss, & Emily Noble.**

Math Joins the Fight Against Cancer

A little over a week ago, the Alma College Community made its contribution to the fight against cancer. Continuing in this vein, we take a moment to examine the part that mathematics has been playing in this fight.

Dr. Vittorio Cristini of the University of New Mexico School of Medicine's Department of Pathology has developed a mathematical equation for cancer treatments. Cristini hopes that this model, which calculates how many of a patient's tumor cells a given treatment will effectively kill, can be used to develop more effective cancer treatment plans.

Dr. Cristini has already developed a general model for all cancer cells, but continues to work at improving his equation. Currently, a particular type of cancer cell has attracted his attention: pancreatic tumors. Dr. Cristini's interest in pancreatic tumors stems from the high number of ipovascular pancreatic tumors; that is, tumors with limited blood flow. Such tumors can receive a blood supply up to ten times smaller than that of surrounding tissue, and have traditionally been a challenge to treat since this low blood flow limits the ability of chemotherapy medications to reach and shrink the tumors. Dr. Cristini's research has, however, revealed a linear relationship between the amount of chemo-radiation treatment to the response in ipovascular tumors, making the model an almost perfect fit and, hopefully, an effective tool for developing plans of treatment for cancer patients.

Dr. Cristini is currently working on a clinical trial to test applications of his equation and hopes to expand this approach to other types of disease. It is his hope that mathematics will be a key to unlocking better treatment plans and more successful outcomes for cancer patients. Read the full article at <http://bit.ly/1gyaNuN> *Katie Krauss*

News from the Math Club

Four members of the Math Club will be presenting on Honors Day this Thursday. Please show your support for **Jacob Blazejewski, Krystle Reiss, Emma Patmore, and Christine Wiersma.**

Solution to the Previous Problem

What value comes next in the sequence 2, 4, 6, __ ?

The answer is: *any number you want.*

Because March 14 was π day, I'd like you to *find a single formula* for the sequence 2, 4, 6, π . That is, find a function f such that

$$f(1) = 2, f(2) = 4, f(3) = 6, \text{ and } f(3) = \pi.$$

Jake Brower offered the following function:

$$f(x) = 2x + \left(\frac{\pi - 8}{6}\right) \cdot (x - 1) \cdot (x - 2) \cdot (x - 3)$$

Check it out; it works.

Look for the *Almagest* Next Fall

This is the final issue of our newsletter for the academic year. We hope you have enjoyed reading the *Almagest* and have found it to be your trusted source for departmental news.

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