The Almagest

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

Volume 4, No. 6 November 21, 2011

Alma College
Alma, MI 48801

Mathematics Colloquium

Mathematical modeling can play an important role in understanding and predicting biological phenomena. In this talk ***Dr. Brian Yurk***, a mathematics professor at Hope College, will discuss the role of mathematical models in understanding the development of cold-blooded organisms (poikilotherms). Because their body temperatures are not internally regulated, poikilotherm development rates depend on environmental temperatures. By modeling this dependence we can predict how insect populations might respond to global climate change.

Dr. Yurk will focus on his work with two species of beetles—mountain pine beetles and bean beetles. Mountain pine beetles are responsible for recent massive forest loss in western North America and have undergone recent range expansion linked to climate change. Bean beetles are an emerging model insect species that infests stored products (legumes) in Africa and Asia.

Mathematics and the Beetles:

Using Mathematical Models to Understand Insect Development in a Changing Climate

Presenter: ***Dr. Brian Yurk***
Date: **Tuesday, November 29th**
Time: 4:00
Place: SAC 109

Focus on Faculty: Dr. Myles McNally

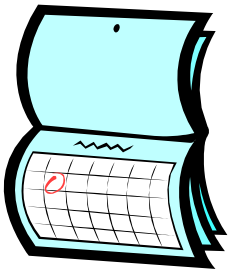
Dr. Myles McNally is a man from the city of brotherly love who made his way to the Alma Bubble in 1992. He received his Bachelor's Degree from Drexel University in 1974 in Humanities and Social Sciences. From Drexel, Dr. McNally moved on to receive his Ph.D. in Philosophy from Temple University in 1982. Dr. McNally has been published nearly twenty times and a couple of those were with colleague Dr. Robert Molina. Dr. McNally worked at Drexel for almost a decade where he acquired the bulk of his computer science knowledge.

When Dr. McNally isn't teaching his favorite classes, which are CSC 345 (Artificial Intelligence) and CSC 120 (Introduction to Programming), he is a webmaster for local organizations managing their web pages. But don't think that he spends all of his time behind a computer monitor. Dr. McNally really enjoys staying in shape and weight lifting with Dr. Molina. One of Dr. McNally's greatest passions is birding; he's actually quite the birding fanatic. He has driven nearly nine hundred miles in a weekend looking for rare birds, which is probably what helped him become ranked as one of the top ten birders in Michigan. He has photos of various birds that will be published in the next issue of *Birding*, a magazine that he would love to show all who share his interest in ornithology.

Jon Young

Mandatory Meeting For Seniors

All senior mathematics and computer science majors are required to attend a meeting on ***Friday January 13th*** at 3:30 in SAC 216. At this meeting we'll provide details about the written and oral components of the senior presentations. Please put this important meeting on your calendar.

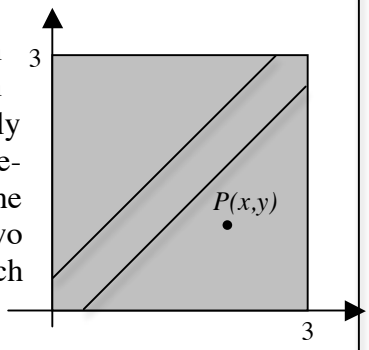


Juniors: Time to think about an REU

Have you ever thought about going to graduate school to study in mathematics or computer science? Would you like to "test the water" and see if grad school might be the right thing for you? If you're a *junior* wrestling with these questions, then please consider applying for a summer REU (Research Experience for Undergraduates). This is a great opportunity to spend 7 or 8 weeks of the summer working on some interesting project in mathematics or computer science. And to make it even more attractive, you'll receive a stipend of approximately **$2500** in addition to free room and board. There are numerous REU's dealing with a wide variety of topics. Please check out the topics and deadlines for applying at the following website: www.ams.org/employment/reu.html

Solution to Previous Problem

Bob randomly selects an x-coordinate between 0 and 3, and Betty randomly selects a y-coordinate between 0 and 3. What's the *probability* that their two values are within 0.5 of each other?

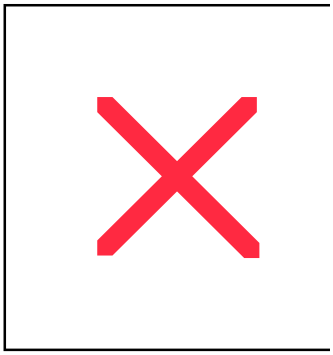


Josh Daniels was the first to submit a correct solution, 11/36. He observed that the points satisfying the requirement were those points "living" in the region between the two diagonal lines. The area of this region divided by the area of the square is 11/36

Also submitting correct solutions were: **Isaac Burrell, Alex Hegedus, Dr. Andrew Thall,** and **Dr. Steuard Jensen.**

Problem of the Bi-Week

A circle of radius 2 and center (2,2) is shown below. A chord joins the points where the circle intersects the coordinate axes. Another segment is drawn tangent to the circle and parallel to the chord. What is the ***exact area*** of the shaded trapezoid?



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

Math Help Center Hours

Monday through Thursday: 7-10 pm

SAC 216

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).