



AUBURN UNIVERSITY

COLLEGE OF SCIENCES
AND MATHEMATICS

$$E=mc^2$$

Engaging More
Community Connections



Volume 8: Issue 4



COSAM Outreach Newsletter
September/October 2016



Upcoming Events & Programs

AMP'd

October 29, 2016 & April 22, 2017

The Auburn Mathematical Puzzle (AMP'd) challenge is held each fall semester for middle school and each spring semester for high school. The event is a problem solving challenge in which student teams work together while answering real mathematical puzzles. The focus of AMP'd is for students of all math ability levels to engage in math in a way that is fun, interesting, and different from a traditional math class. AMP'd has two separate competitions—one each for middle and high schools. Information about AMP'd can be found at www.auburn.edu/cosam/ampd.

Middle School AMP'd

- **Date:** October 29, 2016
- **Contact:** Kristen Bond: 334-844-5769 or kristen.bond@auburn.edu

High School AMP'd

- **Date:** April 22, 2017
- **Contact:** Josh King: 334-844-8123 or josh.king@auburn.edu

Registration for MS School AMP'd is currently open! Check back soon for High School registration information.

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Upcoming Events



War Eagle BEST

War Eagle BEST is the local BEST Robotics hub for schools located in East Central Alabama and West Georgia. The program is co-hosted by the College of Sciences and Mathematics and the Samuel Ginn College of Engineering at Auburn University. Each fall, 20+ local schools design, build, and program a robot from a kit of raw materials. The six-week-long program culminates in a one-day, sports-like competition. For more information about War Eagle BEST including dates/locations and public viewing of the event, visit

www.wareaglebest.org.

2016 Competing Teams

Alabama Christian Academy	Benjamin Russell High School	Central Educational Center	Central High School
Early College Academy/Jordan High School	Eastwood/Cornerstone Schools	Edward Bell Career Tech Center	Glenwood School
Holtville Middle School	LaGrange Academy	LAMP High School	Lanett High School
Lee-Scott Academy	Loachapoka High School	Millbrook Middle School	Montgomery Catholic Preparatory School
Opelika High School	Opelika Middle School	Saint James School	Sanford Middle School
Southside Middle School	Springwood School	Tallassee High School	Wetumpka High School

GEARSEF is going paperless!

Training sessions on the new system available September 22nd and 26th

GEARSEF (the Greater East Alabama Science and Engineering Fair) is a regional affiliate fair of Intel ISEF, the world's largest international pre-college science competition. This year, we're moving to a new online system for paperwork. As such, ALL participating teachers or administrators should join us for one of the training sessions noted above. Registration links and further info for these trainings can be found online at <http://auburn.edu/cosam/gearsef>. For questions, or if you are unable to attend either session but would still like to participate, please contact josh.king@auburn.edu.

Outreach Calendar

September

- 22 GEARSEF Webinar
- 25 War Eagle BEST Mall Day
- 26 GEARSEF New School Training
- 27 September Science Cafe

October

- 8 War Eagle BEST Competition
- 25 October Science Cafe
- 27 G.U.T.S.
- 29 Middle School AMP'd



The AU Science Café

Join us **each month** for a night of science, good drinks, tasty sweets, and great conversations! At the AU Science Café, you'll have the opportunity to sit down and talk about new and exciting science and technology with scientists in our community, all the while relaxing in a great local food and drink venue.



The event is **FREE** and open to all of the public. **No science background is required**, and no question is too silly to ask! For more info, including parking directions and the event schedule, visit us online at <http://auburn.edu/cosam/sciencecafe> or contact Josh King at josh.king@auburn.edu.

Next Science Café Dates:

September 27th – “Why I Want Alabama to Have More Snakes” by Dr. David Steen @ Mama Mochas
 October 25th – “Radiation, Energy, and U” by Dr. Anne Gorden @ Mama Mochas

G.U.T.S.

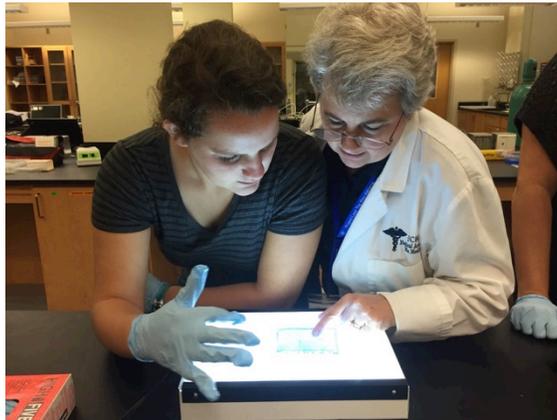
Getting Under the Surface

October 27th, 2016

G.U.T.S. is an evening program for **1st-6th grade students and their parents or grandparents**. Each evening session includes snacks followed by a **hands-on 90-minute science activity** featuring a “Getting Under the Surface” theme designed to demystify science topics—this fall themed as the mysterious and monstrous. The mission of G.U.T.S. is to enhance science literacy and engagement within our community by providing relevant science activities to students and their parents. **The cost of attendance is \$10 per parent/child team.** Slots fill on a first-come-first-serve basis.

Registration will open in mid September. For more information, please visit us online at <http://auburn.edu/cosam/guts> or contact Josh King at josh.king@auburn.edu for questions.

Upcoming
Programs
(Cont...)



PLTW State Conference

November 9th & 10th, 2016

As the state's affiliate university for Project Lead The Way (PLTW), Auburn provides training annually in the form of a State Conference. School districts agree to permit appropriate counselors, teachers and administrators to attend the conference and pay all fees and expenses incurred. Although school districts may encourage other additional counselors, teachers, and administrators to attend the conference at least once, it is required that each school district send at least one advisor or counselor to this annual event. This year, two conferences dates will be offered – Thursday November 10th with a focus appropriate for administrators, counselors, and teachers, preceded by a pre-conference workshop day on Wednesday November 9th for select Gateway courses.

The PLTW State Conference is designed to:

- Increase knowledge of Project Lead The Way and its benefits to students
- Increase awareness of the needs of the U.S. workforce in engineering, health sciences and related fields
- Make connections between Project Lead The Way and post-secondary success

Registration will open in mid September. For more information, visit us online at <http://auburn.edu/pltw>, or for questions contact Mary Lou Ewald at ewaldm1@auburn.edu.



Bone-Bending*

(A little acid, a little calcium)

Materials:

- A jar large enough to fit a chicken bone
- A chicken bone – a leg or “drumstick” bone works best
- Vinegar

What to do:

1. Have a nice chicken dinner and save a bone. Leg bones work best.
2. Rinse off the bone in running water to remove any meat from the bone.
3. Notice how hard the bone is – gently try bending it. Like our bones, chicken bones have a mineral called calcium in them that makes them hard.
4. Put the bone in the jar and cover the bone with vinegar. It might be a good idea to put the lid on the jar or cover it – let it sit for 3 days.
5. After 3 days remove the bone and rinse it with water. It should feel different. Now try bending it again. Is it really a rubber bone?



Make it An Experiment

This activity is a demonstration. To make it a true experiment, you might try to answer these questions:

- Does the length of time the bone is in the vinegar affect how much the bone bends?
- Do different types of vinegar affect how bendy bones become?

- Do any other safe kitchen solutions also make the bones bendy? Are they acids?

*This activity and accompanying graphics were developed by “Science Bob” and adapted for this publication. For more experiment ideas visit:

<http://www.sciencebob.com>

How Does it Work?

What is so special about vinegar that it can make a hard bone squishy? Vinegar is considered a mild acid, but it is strong enough to dissolve away the calcium in the bone. Once the calcium is dissolved, there is nothing to keep the bone hard – all that is left is the soft bone tissue. Now you know why your mom is always trying to get you to drink milk – the calcium in milk goes to our bones to make our bones stronger.



Since the last issue

Summer Impact: COSAM Outreach was busy this summer bringing science to hundreds of students and teachers across the state and across the nation. Here's a quick summary of our impact!

- Number of Programs: **10**
- K-12 Students Impacted: **235**
- Teachers Trained: **560**

Thanks to all who participated, donated space or supplies, or taught with us throughout these programs. We couldn't do it without you!



Engaging More Community
Connections

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