



AUBURN UNIVERSITY

COLLEGE OF SCIENCES
AND MATHEMATICS

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Engaging More
Community Connections

Volume 8: Issue 1



COSAM Outreach Newsletter
January/February 2016



Upcoming Events & Programs

Greater East Alabama Regional Science & Engineering Fair

Project Registration Deadline Approaching!

GEARSEF is a regional affiliate fair of the Intel International Science and Engineering Fair (Intel ISEF), the world's largest international pre-college science competition. GEARSEF is open to all students in grades 6-12 who have advanced from their local science fair (school, county, district, or community fair) and reside within the following Alabama counties: Autauga, Barbour, Bullock, Butler, Chambers, Coffee, Crenshaw, Dale, Elmore, Geneva, Henry, Houston, Lee, Lowndes, Macon, Montgomery, Pike, Russell, and Tallapoosa. Students can be enrolled in public or private schools in the region or affiliated with a home school.

Students should present their projects at a school or county science fair and only top winners advance to GEARSEF. Local winners planning to attend GEARSEF on March 3 (Junior Division) and March 10 (Senior Division) 2016, should register by **Friday, February 12, 2016**. The cost to participate is \$15 entry fee/project.

For more information about GEARSEF or to register, visit our website at www.auburn.edu/cosam/gearsef. Further questions can be directed to Josh King at 334-844-8123 or by e-mail at josh.king@auburn.edu.

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Science Olympiad

Science Olympiad is a one-day sports-like science competition involving elementary to high school students throughout the US. Auburn hosts two separate Olympiads each year—one for elementary students and a separate event for middle schoolers—with approximately 1000 students participating in these events.

This year's Elementary Science Olympiad features 30 participating teams and the Middle School Science Olympiad welcomes 18 teams to the competition.

Elementary Science Olympiad – 2016 Competing Teams February 20, 2016

Auburn Classical Academy - Auburn
Bagley Elementary School - Dora
Bethel Baptist School - Hartselle
Beulah Elementary School - Valley
Fairhope Intermediate School - Fairhope
Gardendale Elementary School - Gardendale
Highlands Elementary School - Dothan
Hillcrest Elementary School - Enterprise
LaFayette Eastside Elementary School - Lafayette
Montana Street Magnet School - Dothan
Mt. Gap Elementary School - Huntsville
Oak Grove Elementary School - Bessemer
Ogletree Elementary School - Auburn
North Highland Elementary School - Hueytown
Pick Elementary School - Auburn
Prattville Christian Academy - Prattville
St. Luke's Episcopal School - Mobile
Springwood School - Lanett
Thompson Intermediate School - Alabaster
W.O. Lance Elementary School - Lanett
Wrights Mill Road Elementary School - Auburn
Yarbrough Elementary School - Auburn

Middle School Science Olympiad – 2016 Competing Teams February 27, 2016

Admiral T. Moorer Middle School - Eufaula
Auburn Junior High School - Auburn
Baldwin Arts and Academics Magnet School - Montgomery
Brighton Middle School - Brighton
Beulah High School - Valley
JF Drake Middle School - Auburn
Iqra Math and Science Academy - Anniston
Lee-Scott Academy - Auburn
Marion Academy - Marion
Montgomery Catholic Preparatory School - Montgomery
Nichols-Lawson Middle School - Sylacauga
Russell County Middle School - Seale
Saint James School - Montgomery

For more information about Science Olympiad, visit www.auburn.edu/cosam/scienceolympiad

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Outreach Calendar

January

23 High School AMP'd

February

- 6 AAPT Conference at AU
- 12 GEARSEF Registration Due
- 12 SSI Postmarked Deadline
- 20 Elementary Science Olympiad
- 27 MS Science Olympiad

Save the Dates!

GUTS – March 29 & April 11

G.U.T.S. is a 90-minute, hands-on, science evening program for 1st-6th grade students and their parents or grandparents.

Look for more details and registration in late February/early March!





Registration Opens February 8th

Upcoming Events and Programs (Cont'd.)

Science Matters is a summer enrichment program for students in rising grades 1 – 8 offering youngsters a supercharged science experience. The program allows participants to explore the world of science through **real experiments**, technology and **art projects**, and hands-on, **project-based activities**. During this action-packed program, kids can design and build, **dabble in the art of chemistry**, “become a flight specialist”, **see amazing critters**, and more!

Science Matters offers six different science-themed weeks for rising 1st – 6th graders and two special courses offered through the Biodiversity Learning Center for rising 7th and 8th graders.

All programs operate between 8am-4pm daily. Prices range from \$190 – \$230 per week/child. Multiple week discounts are available. Courses fill on a first-come-first-serve basis.

2016 Course Offerings by Grade

Week	1st - 2nd Grade	3rd - 4th Grade	5th - 6th Grade	7th - 8th Grade
June 6-10	Investigation: Earth	Elements of Surprise	Minute to Win It	No Offering
June 13 - 17	Animal Kingdom	Space Odyssey	Amusement Park Adventure	Back to the Future I
June 20 - 24	Under the Sea	Double Bubble	Grocery Games	Back to the Future II
June 27 - July 1	The Body Shop	Good Things Come in Trees	Let's Take a Selfie	No Offering
July 18 - 22	I Dig Dinosaurs!	Creepy Crawly Olympics	Circle of Life	No Offering
July 25 - 29	Natural Wonders	The Egg-Stravaganza	Toying with Physics	No Offering

For more information or to register visit www.auburn.edu/cosam/sciencematters. Further questions can be directed to Kristen Bond at Kristen.bond@auburn.edu or by phone at 334-844-5769.

Summer Science Institute

Application Deadline Soon: February 12, 2016

The Summer Science Institute (SSI) is for outstanding students who are currently in the 10th or 11th grades and are interested in science and mathematics. Students engage in real-world applications of science, perform experiments using cutting edge research equipment, and partner with COSAM scientists to gain lab skills not taught in high school. The program is offered at no cost to accepted students. Interested students will need to download the full application and recommendation forms online at www.auburn.edu/cosam/ssi.

For further information, visit us online or contact Mary Lou Ewald at ewaldml@auburn.edu or by phone at 334-844-5745. **Applications must be postmarked by February 12 to be considered.**

Activity of the Issue

Elephant's Toothpaste*

(Revisiting Foamy Chemical Reactions)

Materials:

- Clean 16oz soda bottle
- ½ cup of 6% hydrogen peroxide (often available from a beauty supply store or hair salon)
- 1 tablespoon dry yeast
- Liquid dishwashing detergent
- Food coloring



Extension

The project above is a DEMONSTRATION. To make it a true experiment, you can try to answer these questions:

1. Does the amount of yeast change the amount of foam produced?
2. Does the experiment work as well if you add the dry yeast without mixing it with water?
3. Does the size of the bottle affect the amount of foam produced?

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

<http://www.sciencebob.com>

Safety:

- Hydrogen peroxide can irritate skin and eyes, so wear safety goggles and try not to touch the peroxide directly.
- Do not ingest anything used in this activity.
- The foam in this activity will overflow the bottle vigorously, so perform the activity on a washable surface or place the bottle in a large tray.

What to do:

1. Ask an adult to carefully pour the hydrogen peroxide into the bottle.
2. Add 8 drops of your favorite food coloring into the bottle.
3. Add about 1 tablespoon of liquid dish soap into the bottle and swish the bottle around a bit to mix it.
4. In a separate small cup, combine the warm water and the yeast together and mix for about 30 seconds.
5. Now the adventure starts! Pour the yeast water mixture into the bottle (a funnel helps here) and watch the foaminess begin!

How it works

Foam is awesome! The foam you made is special because each tiny foam bubble is filled with **oxygen**. The yeast acted as a **catalyst** (a helper) to remove the oxygen from the **hydrogen peroxide**. Since it did this very fast, it created lots and lots of bubbles. Did you notice the bottle got warm? Your experiment created a reaction called an **Exothermic Reaction** – that means it not only created foam, it created heat! The foam produced is just water, soap, and oxygen so you can clean it up with a sponge and pour any extra liquid left in the bottle down the drain.

Since the last issue:

South's BEST 2015

South's BEST is a Regional Robotics Championship held each December. This year the top 55 teams competed from 15 BEST hubs in five states. Below are the overall winners.

BEST Award Winners:

- 1st Place:** Starkville High School (Mississippi BEST)
2nd Place: W.P. Davidson High School (Jubilee BEST)
3rd Place: DARC (Tennessee Valley BEST)

Robotics Winners:

- 1st Place:** Merrol Hyde Magnet School (Music City BEST)
2nd Place: DARC (Tennessee Valley BEST)
3rd Place: Starkville High School (Mississippi BEST)
Finalist: St. Vincent de Paul Catholic School (Jubilee BEST)

Middle School Winners:

BEST Award: Seaside Neighborhood School (Emerald Coast BEST)

Robotics: Martin Middle School (Selma BEST)

More information about South's BEST, including a full listing of event winners, can be found at

www.southsbest.org.

Since the last issue (cont.)

High School AMP'd Winners

The AMP'd Challenge occurred on January 23, 2016. Teams of 5 – 7 high school students competed by completing a series of 12 puzzles. Puzzles ranged from crosswords, to logic puzzles, to complex math challenges. This year's event featured 12 high schools from across Alabama.

Overall Winners:

- 1st Place – Saint James School (Team Charlie)
- 2nd Place – Beaugard High School (Team Zulu)
- 3rd Place – Montgomery Catholic Preparatory School (Team Alpha)

Puzzle Master Honorable Mentions:

- Lakeview Christian School (Team Lima)
- Lakeview Christian School (Team Kilo)
- Beulah High School (Team Mike)



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