

AUBURN UNIVERSITY  
COLLEGE OF SCIENCES  
AND MATHEMATICS

**E=mc<sup>2</sup>**

Engaging More  
Community Connections



Volume 5: Issue 1

January/February 2013



## Upcoming Events & Programs: Kidz-sized SCIENCE

Registration for COSAM's newest program, **Kidz-sized SCIENCE**, is now open. The program is designed to introduce kids, ages 4-6, to the wonders of science through hands-on exploration. Kids will have the opportunity to engage in science through experimentation, exploration, language arts, and mathematics skill building. Kids will begin a take-home project that will allow parents to build upon the Kidz-sized SCIENCE learning experience at home.

Kidz-sized SCIENCE will occur in the Community Room (next door to Sears) at the Village Mall in Auburn and is open to all pre-kindergarten and kindergarten students (ages 4-6). Pre-registration is required.

For more information or to register, visit  
[www.auburn.edu/cosam/kidzsizedscience](http://www.auburn.edu/cosam/kidzsizedscience)

For questions, contact Erin Percival at [erin.percival@auburn.edu](mailto:erin.percival@auburn.edu) or by phone at 334-844-7449

Note: Registration is for the entire spring program. The program will take place on the 2<sup>nd</sup> Friday of each month during the months of February – May. The spring dates include the following: February 8, March 8, April 12, and May 10, 2013.

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## Upcoming Events and Programs (cont'd.)

### GEARSEF

Registration Deadline: Thursday, January 10<sup>th</sup>

The Greater East Alabama Regional Science and Engineering Fair (GEARSEF) is open to students in grades 6-12 who reside in one of the following Alabama counties: Autauga, Bullock, Butler, Chambers, Coffee, Covington, Crenshaw, Dale, Dallas, Elmore, Geneva, Houston, Lee, Lowndes, Macon, Montgomery, Pike, Russell, or Tallapoosa.

GEARSEF is an Intel ISEF (International Science and Engineering Fair) Affiliate. Middle school and high school projects (6<sup>th</sup> – 12<sup>th</sup> grades) are eligible to advance to the state science fair in April 2013 and the top two high school finishers at GEARSEF will win an all-expense paid trip to compete at the Intel ISEF Competition in Phoenix, Arizona in May 2013.

GEARSEF will occur on Tuesday, March 5, 2013 at the Auburn University Student Center on Auburn's main campus. Students planning to submit projects should do so under the supervision of a teacher or school administrator. School registration has been extended to Thursday, January 10<sup>th</sup>.

### Summer Science Institute

Application Deadline: Thursday, January 31<sup>st</sup>

The Summer Science Institute (SSI) at Auburn University is a summer science program for rising 11<sup>th</sup>-12<sup>th</sup> grade students with a high aptitude and interest in the fields of science and math. The program, supported by the College of Sciences and Mathematics at Auburn University, partners students with experienced AU Science and Math research faculty to explore topics more advanced than what is typically taught in a public or private high school environment. This program is offered at **NO COST** to its participants. Selected participants may attend regardless of their financial status.

Applicants must reside in Alabama or Georgia. Seating is limited to 24 and will be granted on an academically competitive basis. The deadline to apply is January 31, 2013. Application materials can be found on our website at [www.auburn.edu/cosam/ssi](http://www.auburn.edu/cosam/ssi).

For more information contact Mary Lou Ewald at [ewaldml@auburn.edu](mailto:ewaldml@auburn.edu) or by phone at 334-844-5745 OR visit our website at [www.auburn.edu/cosam/ssi](http://www.auburn.edu/cosam/ssi).

# Science Olympiad

## Elementary Event

February 9, 2013

### Participating Schools:

- Bagley-** Dora, AL
- Cary Woods Elementary School-** Auburn, AL
- Chalkville Elementary School-** Birmingham, AL
- Dean Road Elementary-** Auburn, AL
- Geneva Middle School-** Geneva, AL
- Highlands Elementary School-** Dothan, AL
- W.D. Lance Elementary School-** Lanett, AL
- Oak Grove Elementary School-** Bessemer, AL
- Ogletree Elementary School-** Auburn, AL
- Prattville Christian Academy-** Prattville, AL
- Richland Elementary School-** Auburn, AL
- St. Luke's Episcopal School-** Mobile, AL
- Thompson Intermediate School-** Alabaster, AL
- Trinity Presbyterian-** Montgomery, AL
- Wrights Mill Road Elementary School-** Auburn, AL
- Yarbrough Elementary School-** Auburn, AL

# Science Olympiad

## Middle School Event

February 23, 2013

### Participating Schools:

- Auburn Junior High School-** Auburn, AL
- Baldwin Arts & Sciences Academy-** Montgomery, AL
- Beverly Magnet School-** Dothan, AL
- Carver Magnet School-** Dothan, AL
- J.F. Drake Middle School-** Auburn, AL
- Montgomery Catholic Preparatory School-** Montgomery, AL
- Pleasant Grove Middle School-** Pleasant Grove, AL
- St. James School-** Montgomery, AL



## Outreach Calendar

### January

- 26 After-school Science Teacher Training

### February

- 8 Kidz-sized Science
- 9 Elementary Sci. Olympiad
- 19 GUTS
- 22 TEAMS
- 23 Middle School Sc. Olympiad

# Activity of the Issue

## Blubber Gloves

### Materials:

- Two large zipper lock bags (large enough for your hand to fit inside!)
- Shortening
- Spoon
- Duct tape
- Water
- Ice (crushed/cubes)
- Bucket



### What to do:

1. Since we can't afford to send you to the polar regions, you have to recreate a typical Arctic or Antarctic circle scenario. So make an ice bath! Fill a one or two gallon bucket half full with cold water. Add a bunch (scientific measurement) of ice. This ice bath will be a great representation of the near-freezing waters of the polar regions.
2. Since you aren't a seal, walrus, or whale, you don't have blubber. You need to find a suitable blubber substitute.
3. Fill a zipper lock bag (make sure the bag is big enough to fit your whole hand inside) with three or four heaping spoonfuls of shortening. Seriously... get at it!
4. Put your hand inside a second zipper lock bag of the same size and push it into the shortening-filled zipper lock bag.
5. Spread the shortening around the zipper lock bags until the inner bag is mostly covered.
6. Fold the top of the inner zipper lock bag over the top of the outer zipper lock bag, keeping the shortening between the two. Duct tape the fold in place so that the shortening may never

escape (just like blubber, because whales can't use a treadmill).

7. Now you have a blubber-filled glove, ready to test the frigid waters of the bucket in your kitchen. Stick your hand in the glove and dip your blubber-gloved hand into the icy water. Crazy... your hand doesn't get cold in the water!
8. Try comparing a hand inside the Blubber Glove to a hand stuck in the water without the glove. What do you experience? It's probably a little chilly!

### What's Happening?

Uses for shortening: making cookies, frying chicken, melting chocolate, insulating a Blubber Glove? How does a cooking ingredient double as a perfect insulator? Easy. Shortening is a fat, just like blubber, and is great for thermoregulation. That means fat keeps heat in and cold out. Fats work well as insulators because of their high density and low thermal conductivity relative to water. Despite being submerged in incredibly cold water, fats can maintain a constant temperature. Blubber, in particular, requires very little blood supply, allowing more blood to be circulated to skin surfaces that are more directly exposed to the frigid temperatures. Using the Blubber Glove, your hand isn't directly exposed to the water, so the fat takes the full brunt of the cold.

### Extension:

Are there other home items that are good insulators? Take this demonstration one step further and test these common items out!

- Butter
- Margarine
- Cotton balls
- Starch peanuts
- Dirt or sand

This activity is from [stevespanglerscience.com](http://stevespanglerscience.com), be sure to check out his website for more great science activities to do at home!

# Since the last issue

## South's BEST Results

BEST (Boosting Engineering, Science and Technology) is a high school/middle school robotics program. BEST raises awareness of young people to the career opportunities available in science, engineering, technology, and math, and to motivate them toward pursuits in these fields. BEST is comprised of 49 local competition sites, called "hubs" – organized as BEST Robotics, Inc. On December 1 – 2 Auburn University hosted The South's BEST as one of four regional championships for hubs east of the Mississippi River (18 total). Below are the winners.

### BEST Award Winners:

- 1<sup>st</sup> Place: Cornerstone Christian Prep. Academy-Venetia, PA
- 2<sup>nd</sup> Place: Holy Cross- New Orleans, LA
- 3<sup>rd</sup> Place: Decatur Austin Robotics Coalition- Decatur, AL

### Game Winners:

- 1<sup>st</sup> Place Robotics: St. Vincent de Paul Catholic School – Mobile, AL
- 2<sup>nd</sup> Place Robotics: Holy Cross- New Orleans, LA
- 3<sup>rd</sup> Place Robotics: Spain Park High School- Birmingham, AL



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