

AUBURN UNIVERSITY
COLLEGE OF SCIENCES
AND MATHEMATICS

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Engaging More
Community Connections



Volume 4: Issue 6

November/December 2012



Upcoming Events & Programs: Kidz-sized SCIENCE

Friday, November 9th

Meet **Kidz-sized SCIENCE**, the newest COSAM outreach program. 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.

To register, visit

www.auburn.edu/cosam/kidzsizedscience

For questions, contact Erin Percival at erin.percival@auburn.edu or by phone at 334-844-7449

Note: Kidz-sized SCIENCE is currently in its pilot stage. We plan to have a permanent monthly program beginning in January 2013. Parents may register for the entire spring program starting in early December.

Inside

Upcoming Events and Programs

Kidz-sized Science

GEARSEF Registration

Summer Science Institute Application

South's BEST

1

Activity of the Issue

Raise a Butterfly

4

Since Last Issue...

AMP'd

War Eagle BEST

GUTS

Kidz-sized Science

5



Upcoming Events and Programs (cont'd.)

GEARSEF

Registration Deadline: Friday, December 14th

The Greater East Alabama Regional Science and Engineering Fair 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 (6th – 12th 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 ends on Friday, December 14th.

Summer Science Institute

Application Deadline: Thursday, January 31st

The Summer Science Institute (SSI) at Auburn University is a summer science program for rising 11th-12th 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.

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

South's BEST

December 1-2, 2012

Auburn Arena

BEST (Boosting Engineering, Science and Technology) is a high school/middle school robotics program now in its 20th year nationally (12th year in Alabama).

The purpose of BEST is to raise 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. The South's BEST is one of four regional championships for hubs east of the Mississippi River (18 total). Auburn University will host 57 teams at "The South's BEST" on December 1-2, 2012.

While in Auburn, teams will compete in a series of head-to-head matches on two playing fields designed for this year's game, *Warp XX*. The educational theme behind *Warp XX* is the space elevator, a real-world engineering challenge of transporting supplies to and from the International Space Station on a tethered cable. Teams have been tasked with designing and building a robot capable of climbing a thirteen-foot pole to carry and deliver essential items (empty and full fuel cells, solar panels, habitation modules, etc.) to and from the space station located at the top of the pole.

South's BEST will be held at the Auburn Arena and is open and free to the public.

Matches begin at 5:00pm on Saturday and the competition will continue on Sunday beginning at 9:30am. The event should conclude by 5:00pm on Sunday.

Weekend Highlights to include*:

Start of Matches

Saturday, 5:00 – 8:30pm

Official South's BEST Opening

Sunday, 9:30am

Science and Engineering Exhibit Fair

Sunday, 11:00am – 2:00pm

Semi-Final Matches (top 16)

Sunday, 3:00pm

Championship Matches (top 4)

Sunday, 4:00pm

Awards Ceremony

Sunday, 4:30pm

For more information about the BEST program or South's BEST visit our website at www.southsbest.org.

*All times are tentative and subject to change.



Outreach Calendar

November

- 1 SSI Applications Available
- 1 GEARSEF Registration Opens
- 9 Kidz-sized SCIENCE

December

- 1-2 South's BEST



Activity of the Issue

Raise A Butterfly

Materials:

- A medium/large glass or plastic jar
- Assorted leaves and twigs
- Kleenex tissues
- String
- Mesh fabric
- A caterpillar from the yard!

What to do:

1. First, take a clean jar and measure the opening of the lid. Cut a clean piece of mesh that will fit over the top and can be secured with a rubber band. Also place a few tissues at the bottom of the jar to collect moisture.
2. Go outside and collect a few different green leaves and a few twigs or small branches that will fit inside your jar. Wash off everything and place them inside the jar, leaving lots of room for your caterpillar to crawl around.
3. After setting everything up, go outside and carefully capture a caterpillar in your jar. Look on plants with wide, green leaves or in patches of thick grass. Try not to touch your caterpillar. Simply pick up the leaf it is on and place it in the jar. Make sure to collect a few more of those leaves for him to eat.
4. Every day or two, take out the tissues at the bottom and put in new ones. Also remove and replace any dry leaves. If your caterpillar likes a certain kind of leave, make sure to put those in. Caterpillars don't drink very much water, but they will drink the water off the leaves if you wash them before putting them in.
5. In a few weeks, your caterpillar will climb up on one of the twigs and weave a chrysalis (if it is a butterfly) or cocoon (if it is a moth). If it is hanging on a twig, leave it there and remove all of the tissues and leaves. If the

cocoon is not hanging up, you can use string to very carefully hang the cocoon from a twig inside the jar.

6. Before the butterfly emerges, be sure the hang some strips of mesh inside the jar. This will give the butterfly something to hold on to. Once your butterfly has emerged, spread his wings, and dried off, it is time to release him outside - preferably near flowers. Be sure not to touch his delicate wings, and you can watch him fly away!

What's Happening?

The life cycle of a butterfly is four steps. From an egg, the larval stage hatches as a caterpillar. During this stage they spend all of their time eating plants (mostly leaves) and getting as big as they can. When they become full sized, caterpillars will wander around until they find a safe space to weave their chrysalis. They will then hang upside down and spin the hard silk chrysalis around themselves. Inside this protection, they enter their pupal stage and mature. In the spring, the adult butterfly will push their way out of the chrysalis, spend a few hours drying their wings, and then will be ready to fly away to feed on flowers.

Make it an Experiment:

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

1. Does my caterpillar prefer wet or dry leaves? (Offer both at the same time)
2. Does my caterpillar prefer grass or leaves? (Offer both at the same time)
3. What color sugar water does my emerged butterfly prefer?

Since the Last Issue

AMP'd Results

The second annual Auburn Mathematical Puzzle Challenge (AMP'd) occurred on September 29th. Six middle schools competed in this year's competition with the following results:

1st Place Overall:

Montgomery Preparatory Catholic School-Team 1

2nd Place Overall:

Auburn Junior High School- Team 2

3rd Place Overall:

Opelika Middle School-Team 2

Five Star Award:

McIntosh High School-Team 2

SET Cyphering:

Russell County Middle School-Team 1

Secret Agent Deliveries Challenge Winner:

Opelika Middle School-Team 2

Top Secret Headquarters Challenge Winner:

Auburn Junior High School- Team 2



War Eagle BEST Results

The culmination of the six-week-long War Eagle BEST program occurred at Smiths Station High School on Saturday, October 13th. The event brought together twenty-five middle and high school teams from east AL and west GA in friendly competition.

All teams were required to design and construct a robot capable of climbing a thirteen-foot pole and delivering items to the top. In this year's game, Warp XX, the pole represents a space elevator. Teams were tasked with transporting items to and from the 'space station' at the top of elevator.

Many teams also elected to compete in the BEST Award component of the competition and participated in the following judged categories: Marketing Presentations, Team Exhibit and Interview, Project Engineering Notebook, and Spirit and Sportsmanship. Below you will find the winners of the 2012 War Eagle BEST program.

BEST Award Winners:

1st Place: Wetumpka High School

2nd Place: Saint James School

3rd Place: Columbus Consortium

4th Place: Brewbaker Technology Magnet High School

Game Winners:

1st Place Robotics: Columbus Consortium

2nd Place Robotics: Stanhope Elmore High School

3rd Place Robotics: Wetumpka High School

4th Place Robotics: Saint James School

Winners Advancing to South's BEST:

Brewbaker Technology Magnet High School

Columbus Consortium

Saint James School

Stanhope Elmore High School

Wetumpka High School

Since the last issue

Kidz-sized SCIENCE

Our first-ever Kidz-sized SCIENCE program kicked-off on Friday, October 26th with a course entitled “The Great Pumpkin Project”. Kids explored pumpkins in a variety of ways, including pumpkin tasting, digging into pumpkin ‘guts’, planting pumpkin seeds, reading stories about pumpkins, and calculating whether the number of ribs on a pumpkin is correlated to the number of seeds inside. The program was a great success and we are looking forward to hosting our second Kidz-sized SCIENCE on Friday, November 9th at the Village Mall in Auburn.

GUTS

We hosted our annual Halloween-themed GUTS program on Tuesday, October 23rd. Kids explored pumpkins, simulated the blood flow through arteries and veins, and got up-close with a live bat! Pictures of the event are found throughout this newsletter!



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