

AUBURN UNIVERSITY
COLLEGE OF SCIENCES
AND MATHEMATICS

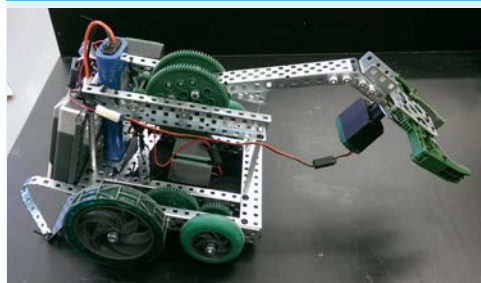
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*Engaging More
Community Connections*



Volume 6: Issue 4

September/October 2014



Upcoming Events & Programs:

Middle School AMP'd

September 13, 2014

Registration Deadline: August 29, 2014

The Middle School Auburn Mathematical Puzzle (AMP'd) challenge is held each fall. The event is a problem solving challenge in which teams of 6 – 8 middle school students (7th-8th grade) work together to 'find the missing treasure' by answering real mathematical puzzles. The focus of Middle School 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.

Schools may register up to two teams of students for participation in the event. The cost to participate is \$50 for the first team and \$30 for the second team from the same school. Fees include student participation certificates, snacks, lunch, a t-shirt for each student/teacher, and a school plaque.

For more information about Middle School AMP'd, including a teaser puzzle visit www.auburn.edu/cosam/ampd or contact Kristen Bond at 334-844-5769 or by e-mail at Kristen.bond@auburn.edu.

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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.

2014 Competing Teams

Autauga Academy
 Brewbaker Technology Magnet High School
 Central Educational Center
 Coosa Valley Academy
 Eastwood/Cornerstone School
 Edward Bell Career Technical Center
 Glenwood School
 Lovelace Academic Magnet Program High School
 Lanett High School
 Lee-Scott Academy
 Loachapoka High School
 Millbrook Middle School
 Montgomery Catholic Preparatory School
 Opelika High School
 Opelika Middle School
 Prattville High School
 Saint James School
 Smiths Station High School
 Southside Middle School
 Spencer High School
 Springwood School
 Wetumpka Middle School
 Wetumpka High School

Upcoming Events and Programs (Cont'd.)



Science Olympiad

Registration Opens in September (First-Come-First-Serve)

Visit <http://www.alabamaso.org> to register!

Science Olympiad is a one-day sports-like science competition involving approximately 2,000 Alabama K-8 students each year. Auburn hosts two separate Olympiad events each year – one for middle students and a separate event for elementary students. More information can be found at www.auburn.edu/cosam/scienceolympiad.

Elementary S.O. – Saturday, February 21st, 2015

Limited to the first 20 registered teams

Limited to two teams per school

Teams may not have more than 25 students

Middle School S.O. – Saturday, March 7th, 2015

Limited to the first 20 registered teams

Limited to 1 varsity team per school

Teams may not have more than 15 students



Project Lead The Way

Auburn University serves as the Project Lead The Way (PLTW) affiliate university for the state of Alabama. In this role, Auburn University facilitates the delivery of PLTW programs by providing professional development through its core training, counselor conferences, college-level recognition, program initiatives, statewide/regional support and communication.

Project Lead The Way is the nation's leading provider of STEM programs. Their world-class curriculum and high-quality teacher professional development model, combined with an engaged network of educators and corporate and community partners, help students develop the skills necessary to succeed in our global economy.

PLTW's success in preparing students with the knowledge and skills they need to succeed has been recognized by colleges and universities, Fortune 500 businesses, and numerous national organizations including Change the Equation, the Social Impact Exchange, and more.

Beginning this fall, the College of Sciences and Mathematics will lead one of PLTW's newest programs, Biomedical Sciences (BMS), at Auburn University. Auburn University will be the first and only university or college offering this innovative, professional development program in the state of Alabama. Other programs already offered by AU include: Pathway to Engineering (PTE), Gateway to Technology (GTT), and Launch.

For additional information about Project Lead The Way, visit

<http://www.pltw.org>

For more information or to join the Alabama PLTW email list, please contact:

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Outreach Calendar

September

- 13 Middle School AMP'd
- 28 War Eagle BEST Mall Day

October

- 9 PLTW State Conference
- 11 War Eagle BEST Competition
- 16 STEM IQ Teacher Workshop



Activity of the Issue

See Leaf Colors

Materials:

- Various types of leaves in different colors
- Small cups
- Coffee filters cut into strips
- Nail polish remover
- Pen

What to do:

1. Tear each leaf into small pieces. Put the pieces of each leaf into a cup. Each leaf should get its own cup.
2. Pour enough nail polish remover into the cups to just cover the pieces of leaves.
3. Label each coffee filter with the original color of the leaf. Stand a strip of coffee filter into each cup. Wait for 10 minutes as the liquid travels up the paper.
4. Take the filter paper from the cup and let it dry. Compare the results for all your leaves. How do the pigments differ?

What's Happening?

Plant **pigments** play an important role in capturing light for photosynthesis. These pigments give leaves their colors. Chlorophyll pigment makes leaves green and allows the plant to capture energy from the sun for photosynthesis. Anthocyanins make leaves red. Carotenoids make leaves yellow.

In the fall, trees prepare for winter by shutting down photosynthesis. As this happens, the chlorophyll disappears from the leaves. As this happens, the green color fades and we begin to see yellow and orange – colors that have been there all along, but were hidden by the green pigment. Sugars trapped inside the leaves react with light and other chemicals to reveal new colors.

The Museum of Science and Industry of Chicago developed this experiment. For more fun experiments involving plants visit:
<http://www.msichicago.org/online-science/>



Since the last issue:

Science Matters Wraps Up

The 2014 Science Matters Summer Academy for Elementary Students wrapped up on August 1st. The summer was great and included 17 weeklong courses for rising 1st – 6th grade students. The program impacted almost 200 elementary school students and 369 seats were filled!

Registration for next year's Science Matters Academy will open on February 9, 2015 at
www.auburn.edu/cosam/sciencematters.

Robotics Academy A Success

The 2014 Robotics Academy for rising 7th -9th graders was a great success. Students engaged in a series of science and engineering-based lessons each day with lessons ranging from torque to gear ratios. Each day concluded with a mini-competition in which students built robots to perform a specific task. The week culminated in a two – hour competition, “Puck Pile-Up”.

For more information about Robotics Academy or any of our outreach programs please visit:
www.auburn.edu/cosam/outreach.

Robotics University:

In 2014, COSAM faculty and outreach personnel, along with technology faculty from Ivy Tech Community College in Indiana conducted a series of robotics education workshops (“Robotics University”) during the summer. Each workshop consisted of 4 days (approximately 25 hours) of intense training on the VEX robotics design systems – the same systems used in the BEST Robotics program. During this training, teachers enhanced technological skills through hands-on training in robot design, construction, operation, and computer programming with Easy-C programming language. Science and math content lessons related to optimizing robotic function were integrated throughout the training. Topics included simple machines, motion, force, and power, along with the basic algebra and trigonometry used in applying these concepts to real situations.

Thirty-five middle school teachers from 21 counties in Alabama participated in the Robotics University workshop this summer. Instructors included: Dr. Allen Landers (Physics Dept), Christina Steele (AU Science in Motion physics specialist), TJ Nguyen (COSAM Outreach), and VEX robotics experts from VisualEdge based in Indiana. Teachers who were not able to attend Robotics University this summer will still have an opportunity to attend a workshop in Summer 2015.



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For more information about
any of our programs visit:

www.auburn.edu/cosam/outreach

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