

ANNUAL REPORT

2015

College of Sciences and Mathematics Outreach

The College of Sciences and Mathematics Outreach Office at Auburn University strives to promote scientific literacy and interest among K-12 students, teachers, and communities in our region, our state, and our nation.



21

on-site programs



118

contact days



9,244

students, parents, and teacher participants

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About COSAM Outreach

To promote careers in sciences and mathematics among K-12 students, the College of Sciences and Mathematics (COSAM) at Auburn University has designed an innovative outreach division offering special events, competitions, workshops, and programs throughout the year for the general public and K-12 students and teachers. These activities are designed to provide a continuum of programs for students in various stages of their educational development.

In 2015, COSAM Outreach hosted over 9,244 students, parents, and teachers at events on the AU campus. A total of 21 on-site programs, with 118 contact days, were hosted/sponsored by COSAM's Outreach Office. Additionally, over 70,000 students and teachers were impacted through Alabama Science in Motion and the Alabama Math, Science, and Technology Initiative (AMSTI). In fact, an additional 40 teacher training days were devoted to AMSTI and Alabama Science in Motion Teacher Professional Development.

In Outreach, we continuously evaluate and assess our existing programs while also creating new programs for specific target audiences. In 2015, we joined efforts with the Women in Science and Engineering (WISE) Institute at Auburn to become the state affiliate site for the Project Lead The Way (PLTW) Biomedical Sciences program.

Project Lead The Way (PLTW)

PLTW is a national K-12 STEM education curriculum that provides professional development for teachers and school administrators through core training and conferences. The PLTW Biomedical program empowers students to develop and apply in-demand, transportable skills by exploring real-world challenges in the health industry. Through this unique curriculum, students not only learn technical skills, but also learn to solve problems, think critically and creatively, communicate, and collaborate. In summer 2015, we facilitated four weeks of intensive teacher training in the two PLTW biomedical courses, Principles of Biomedical Science and Human Body Systems. As more schools across Alabama adopt PLTW as their primary STEM curriculum, Auburn University and COSAM Outreach will have the opportunity like never before to connect to the K-12 school systems across the state as we promote and

support their efforts to implement this dynamic program.

As our program offerings continue to grow, I am pleased to report that an increasing number of COSAM faculty are enthusiastically connecting with the public through our programs and sharing their passion for science and mathematics. Their involvement adds breadth and depth to our program offerings and provides more opportunity for the public to be true shareholders in the resource that IS Auburn University. We invite you to take a moment to review our 2015 annual report for more information on this past year's successes.

Outreach Staff



Mary Lou Ewald
Director of Outreach

As the Director of Outreach for the College of Sciences and Mathematics, Mary Lou's primary responsibilities include: oversight and management of the outreach programs, the Director of AU Science in Motion, Co-PI, AU-AMSTI, and the campus-wide outreach representative for COSAM (WISE Institute, Outreach Faculty Engagement Council). In addition, she is responsible for oversight of all grant-related activities for the unit and serves as the State Affiliate Director of the Project Lead The Way Biomedical Sciences Program.



Erin Percival
Assistant Director of Outreach

Erin's primary office responsibilities include management of Outreach programs, supervision of student employees, and curriculum development oversight. This year she directly managed GUTS, High School AMP'd Challenge, and GEARSEF.



Kristen Bond
Outreach Administrator

Kristen's responsibilities during the 2015 year included: coordination of elementary and middle school Science Olympiads, Science Matters Summer Academy, Middle School AMP'd, as well as school coordination and logistics at both the War Eagle BEST and South's BEST competitions.



Amy Mathis
Office Manager- TES Employee

Amy's primary responsibility included office management. In this role, she managed volunteer hospitality, and managed the office through the purchasing of supplies, updating the Facebook page, and maintaining program records.

Outreach Staff (cont.)



Teddy Dubose

Account II

Teddy's primary responsibility included managing program budgets, office management, and oversight of all financial matters of the unit.



Josh King

Outreach Administrator

Josh's responsibilities during the 2015 year included: coordination of GUTS, High School AMP'd Challenge, GEARSEF, hospitality for BEST Robotics, and serving as the affiliate assistant director for the Project Lead The Way Biomedical Sciences program.



Tj Nguyen

Graduate Assistant

Mechanical Engineering & Secondary Science Education
Graduate Student, Seventh year in COSAM Outreach

Primary Responsibilities:

Technical Assistant and Floor Boss of BEST Robotics

Curriculum Developer and Instructor for Robotics Academy

Curriculum Developer, Instructor, and Data Entry for Robotics University/MSP



Allison Tjelmeland

Graduate Assistant

Biological Sciences & Secondary Science Education

Graduate Student

Fourth year in COSAM Outreach

Primary Responsibilities:

GEARSEF Coordinator

Curriculum Developer and Instructor for STEM-IQ Training.

Student Employees



Amber Derouen
Student Program Assistant

Cell and Molecular Biology
Senior
Third year in COSAM Outreach



Chloe Chaudhury
Student Program Assistant

Biochemistry and Dance
Senior
Second year in COSAM Outreach



Khori Dunn
Student Program Assistant

Interdisciplinary Studies
Senior
Third year in COSAM Outreach



Jacob Varner
Student Program Assistant

Software Engineering
Junior
Third year in COSAM Outreach

Student Employees (cont.)



Hunter Whitten
Student Program Assistant

Building Science
Junior
Third year in COSAM Outreach



Erika Dunavant
Student Program Assistant

Building Science
Junior
First year in COSAM Outreach

2015 Outreach Calendar

January 17	The Alabama STEM Studio for Afterschool Learning (TASSAL)
January 24	High School Auburn Mathematical Puzzle Challenge
February 21	Elementary Science Olympiad
February 28	TASSAL
March 7	Middle School Science Olympiad
March 19	Greater East Alabama Regional Science and Engineering Fair (GEARSEF)
April 11	TASSAL
April 16	Getting Under The Surface (GUTS) - Spring
May 1	AU Explore
May 7	Society of Women in Sciences and Mathematics Annual Symposium
May 29 - Jun. 6	Summer Science Institute (SSI)
June 1 - 5	Science Matters
June 8 - 12	STEM-IQ Workshop
June 14 - 26	Project Lead The Way Core Training
June 15 - 26	Science Matters
July 6 - 10	Science Matters
July 7 - 10	Robotics University
July 13 - 17	Science Matters
July 13 - 17	Save the Animals
July 20 - 23	AP Summer Institute for Teachers
July 27 - 31	Science Matters
September 19	Robotics Merit Badge Day
September 19	Middle School AMP'd
October 9-10	War Eagle BEST
October 27	Getting Under The Surface (GUTS) - Fall
November 10	Project Lead The Way State Conference
December 5-6	South's BEST

Program Descriptions



Alabama STEM Studio for Afterschool Learning

Funding Source: Truman Pierce Institute Grant

TASSAL (The Alabama STEM Studio for Afterschool Learning) is a statewide afterschool STEM professional development program hosted by COSAM Outreach, in partnership with the College of Education's Department of Curriculum and Teaching and the Truman Pierce Institute. The initiative utilizes a series of hands-on, inquiry based activities that integrate science, technology, engineering and mathematics principles in a fun, non-threatening learning environment. The target audience is afterschool educators located at 21st Century Community Learning Centers (CCLC) in Alabama.



AP Summer Institute (COSAM Facillitated)

Funding Source: Participant fees

The AP[®] Summer Institute (APSI) Workshop is endorsed by College Board and designed to aid the professional development of teachers, counselors, and administrators who are involved with Advanced Placement (AP[®]) courses. Workshops are designed for teachers who are teaching an Advanced Placement course for the first time and for experienced teachers desiring refresher training. Topics include subject matter content, test construction, pupil and teacher selection, College Board policies and procedures, and preparation and grading of AP tests. APSI is hosted each summer in partnership with the Office of Professional and Continuing Education at Auburn University. COSAM facilitates course offerings in Biology, Chemistry, Calculus, and History. This year's AP Institute included 4 days of intensive training on July 20-23, impacting 73 teachers from across the near-Alabama area.



Auburn Mathematical Puzzle Challenge

Funding Source: COSAM, participant fees

The Auburn Mathematical Puzzle Challenge, or AMP'd Challenge for short, is a problem solving challenge offered two times each year. In the fall, AU hosts a middle school event in which teams of 6-8 students work together to 'solve a crime' by solving thematic mathematical puzzles. In the spring, a high school event is hosted in which students are challenged to solve 10-12 puzzles in a five hour period.



AU Explore

Funding Source: COSAM

AU Explore is COSAM's annual Open House Day for 5th - 8th graders. Students have the opportunity to experience live animals up close, as well as interact with University faculty and students at the Science and Math EXPOS, Make-n-Take Science Fun Shops and Demo Shows presented by Auburn's finest.

Program Descriptions



Getting Under The Surface (GUTS)

Funding Source: Participant fees

GUTS is a program for kids in grades 1-6 and their parents or grandparents as lab partners. Each evening session includes dessert followed by a 90-minute science activity featuring a “Getting Under The Surface” theme that focuses on a scientific topic or technique.



Greater East Alabama Regional Science & Eng. Fair

Funding Source: COSAM, Samuel Ginn College of Engineering, & fees

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. ISEF, the premiere science competition in the world, annually provides a forum for millions of students from over 50 countries, regions, and territories to showcase their independent research. GEARSEF hosts 6th – 12th grade projects from 21 Southeast Alabama counties. Two exceptional high school students from GEARSEF advance to the Intel ISEF each May to compete against the top 1,500 students in the world for nearly \$4 million dollars in prizes and scholarships.



Project Lead The Way

Funding Source: Participant fees

Auburn University serves as the Project Lead The Way (PLTW)’s engineering and biomedical sciences affiliate university for the state of Alabama. In this role, Auburn University facilitates the delivery of the PLTW Pathway to Engineering (PTE), Biomedical Sciences (BMS), and Gateway to Technology (GTT) programs by providing professional development through its core training and counselor conferences, as well as college-level recognition, program initiatives, and statewide/regional support and communication. Project Lead The Way at Auburn University is a collaboration between the WISE Institute and the College of Sciences and Mathematics. As COSAM Outreach takes a direct role in the planning and facilitation of the program, a more detailed program description can be found in the following pages.



Robotics University Workshop

Funding Source: Alabama State Department of Education (MSP Grant)

Robotics University is a four-day, robotics education training workshop for middle school teachers in the state of Alabama. Teachers use VEX rapid-prototyping kits to build their own operational robot and deepen mathematics and physical science content knowledge. The workshop is the second component in a three-year grant to support the RE²-FoCUS Initiative (Robotics and Engineering Education Fostering the Conceptual Understanding of Science) to offer professional development for Alabama middle school science and math teachers. The RE²-FoCUS Initiative is a collaboration between the College of Sciences and Mathematics, the College of Education, and Alabama Math, Science and Technology Initiative (AMSTI).

Program Descriptions



Save the Animals Workshop

Funding Source: Alabama State Department of Education (MSP Grant)

Save the Animals is a four-day, engineering and science design educator training workshop for middle school teachers in the state of Alabama. While enhancing their design skills and content knowledge across a multidisciplinary course of engineering and the life, physical, earth, and space sciences, educators are challenged to save animals from various posed scenarios. These scenarios include challenges such as building a solar-powered robot to transport penguin eggs to safety or cleaning up after the Gulf Oil Spill. This workshop is the other component in the three-year grant to support the RE²-FoCUS Initiative (Robotics and Engineering Education Fostering the Conceptual Understanding of Science) alongside Robotics University (above).



Science Matters

Funding Source: Participant fees

Science Matters is a summer enrichment program for elementary students offering youngsters a supercharged science experience. The program allows participants to explore the world of science through authentic experiments, local field trips, constructive play, technology, art projects, and hands-on, make-n-take activities. Each summer, up to eighteen different one-week courses are designed and taught by master educators in the region.



Science Olympiad

Funding Source: COSAM, AU Bookstore

Science Olympiad is a national science competition that is organized as a one-day academic track meet, consisting of up to 23 different competitive events. Each spring, Auburn University hosts two separate Science Olympiad competitions- one in February for 500+ elementary students and one for 200+ middle school students in March. Winners from the middle school competition advance to the state competition each April.

Science in Motion

Funding Source: State Department of Education



Alabama Science in Motion (ASIM) is the high school science component of the Alabama Math, Science and Technology Initiative. ASIM is a partnership between universities and high schools in Alabama. The goals of Science in Motion are to provide high-tech laboratory experiences for students and effective professional development for teachers. In many instances the cost of the equipment involved would be prohibitive for individual schools or even systems to acquire. Sharing this equipment through Science in Motion offers equally enriching opportunities to students from different backgrounds and schools.

Program Descriptions



SWSM

Funding Source: Sponsorships and Participant Fees

The annual Society of Women in Sciences and Mathematics (SWSM) Symposium and Luncheon offers women at all stages of their careers in science and mathematics the opportunity to network with one another through panel discussions, break-out sessions, career corner, and a luncheon with Keynote address from the Marie W. Wooten Distinguished Speaker.



STEM-IQ

Funding Source: National Science Foundation Grant

STEM-IQ is a program for middle and high school teachers that focuses on aiding students through the science and engineering fair design process. The program is funded through a National Science Foundation, EPSCoR grant. Participation in this program is by invitation and is limited to school systems interested in participating in AU's regional Science and Engineering Fair.



Summer Science Institute

Funding Source: NSF, SWSM, Physics Department, & COSAM Outreach

The Summer Science Institute 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 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. Students are chosen based upon their academic merit through a rigorous application process.



War Eagle BEST

Funding Source: Sponsorships, COSAM and Samuel Ginn College of Engineering

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 25 local schools design, build, and program a robot from a kit of raw materials through implementation of the Engineering Design Process. The six-week-long program culminates in a one-day, sports-like competition.



South's BEST

Funding Source: Sponsorships, COSAM and Samuel Ginn College of Engineering

Each December, a crowd of over 3,500 students, teachers, parents, and industry mentors assemble at Auburn University for the Annual South's BEST Regional Robotics Championship. Winners from 15 Southeastern BEST hubs advance to South's BEST, where the "Best of the BEST" compete in two intense days of competition.

Program: The Alabama STEM Studio for Afterschool Learning (TASSAL)

Description: COSAM Outreach, in partnership with the College of Education's Department of Curriculum and Teaching and the Truman Pierce Institute, received funding to implement a statewide afterschool STEM training program. TASSAL utilizes a series of hands-on, inquiry based activities that integrate science, technology, engineering and mathematics principles in a fun, non-threatening learning environment. The target audience is afterschool educators located at 21st Century Community Learning Centers (CCLC) in Alabama. In Spring of 2015, we hosted 3 TASSAL workshops focused on integrating robotics into afterschool programs. The teachers used VEX IQ robotics kits to build a robot and were then trained on programming the robot using easyC programming software.

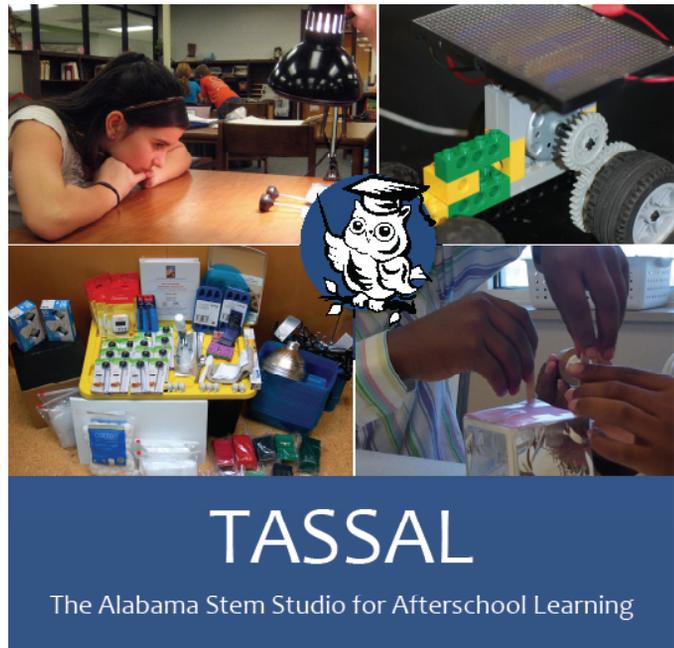
Dates: Saturday, January 17; Saturday, February 28; and Saturday, April 11

Personnel:

- **AU:** Mary Lou Ewald, Allen Landers, Tj Nguyen, Frank Ware, Marllin Simon

Impact:

- **Number of Participants:** 56
- **CCLC Sites Impacted:** BCHS Tiger Nation: Building a Successful Community, Birmingham Civil Rights Institute, Boaz City Schools, Boys and Girls Club of North Alabama (Huntsville), BREAD Center, Chickasaw City Schools, Circles Choctaw County, Craighead Project Lion, Demopolis City Schools 21st Century Program, Eclectic Middle School, Elberta Middle, Elsanor School Project Soar, FAME, Foley Elementary, Got STEAM?, Gulf Shores Elementary School 21st CCLC program, Hubbertville School L.E.A.D Program, Ider 21st CCLC, Jasper City, JOURNEYS-Winfield City Schools, Leroy High School, Millbrook Middle School, Munford Elementary School, Owens Elementary 21St Century Community Learning Center, Project Delta, Robertsdale Elementary School ASCC, Selma Community Learning Center, Stevenson Middle School, The CARE Center (NHCLC), Tuscaloosa One Place, W.S. Harlan Elementary School, Washington County High School Bulldog PRIDE, Watwood Elementary School



Program: High School Auburn Mathematical Puzzle Challenge (AMP'd)

Date: Saturday, January 24, 2015

Description: Math Puzzle Challenge event for high school students

Facilities: Sciences Center Auditorium, Parker Hall

Personnel:

- AU: Erin Percival, Mary Lou Ewald, Kristen Bond, Allison Tjelmeland, Khorizon Dunn, Jacob Varner, Amber Derouen, Hunter Whitten
- Non-AU: Eric Harshberger

Student Impact:

- Number of Students: 133
- Grade Range: 9th-12th
- Schools Impacted:
 - Bearegard High School
 - Beulah High School
 - Central Educational Center
 - East Coweta High School
 - Hoover High School
 - Lanett High School
 - Montgomery Catholic Preparatory School
 - Opelika High School
 - Saint James School
 - W.P. Davidson High School



Program: Science Olympiad- Elementary School (Division A2)**Date:** Saturday, February 21, 2015**Description:** Regional Elementary School Olympiad**Personnel:**

- AU: Mary Lou Ewald, Erin Percival, Kristen Bond, TJ Nguyen, Allison Tjelmeland, Hunter Whitten, Chloe Chaudhury, Jacob Varner, Amber Derouen, Khorizon Dunn.
- Non-AU: Science teachers from participating schools

*Exploring the World of Science*

Schools Impacted: Beulah Elementary, Geneva Middle, Highlands Elementary, W.O. Lance Elementary, Mt. Gap Elementary, W.S. Neal Middle, Ogletree Elementary, Pick Elementary, Oakgrove Elementary, St. Luke's Episcopal, Auburn Classical Academy, Wrights Mill Rd. Elementary, Yarbrough Elementary, Springwood School, LaFayette Eastside Elementary

Total Number of Students: approx. 489**Age Range:** 3rd – 6th grade

Facilities: AU Student Center, Parker Hall, Science Center Labs, Science Center Classroom Building, Science Center Auditorium



Program: Science Olympiad- Middle School (Division B)

Date: Saturday, March 7, 2015

Description: Regional Middle School Olympiad

Personnel:

- AU: Mary Lou Ewald, Erin Percival, Kristen Bond, Amber Derouen, Jacob Varner, Hunter Whitten, Allison Tjelmeland, Khorizon Dunn, Chloe Chaudhury
- Non-AU: Science teachers from participating schools

Schools Impacted: Auburn Jr. High School, Baldwin Arts and Academics Magnet School, Brighton Middle School, Excalibur Christian School, Floyd Middle Magnet School, JF Drake Middle School, Montgomery Catholic Preparatory School, and Nichols-Lawson Middle School

Total Number of Students: approx. 185

- Age Range: 6th – 9th grade

Facilities: AU Student Center, Parker Hall, Science Center Labs, Science Center Auditorium, Science Center Classrooms, Haley Center, Petrie Hal



Program: Greater East Alabama Regional Science and Engineering Fair (GEARSEF)

Date: Thursday, March 19, 2015; 8:00 am - 4:00 pm

Description: Students presented projects from a variety of Science and Engineering fields.

Personnel:

- AU: Erin Percival, Mary Lou Ewald, Kristen Bond, George Blanks, Allison Tjelmeland, Jacob Varner, TJ Nguyen, Amber Derouen, and Khorizon Dunn

Judges:

- College of Sciences and Mathematics: Shailah Armstrong, Brittany Boykin, Joe Chaffee, Paul Cobine, Roland Dute, Bianca Evans, Shobnom Ferdous, Mike Fogle, Katarena Ford, Nicole Garrison, Lauren Gentry, Emily Hardy, Greg Hartwell, Brian Helms, Juan Hu, Shawn Jacobsen, Chloe Josefson, Stephen Kempf, Rebecca Koch, Pia Kulakowski, Marcelo Kuroda, Allen Landers, Chao Li, Yingru Li, Eze Nwaeze, Stephanie Renuart, Elizabeth Schwartz, Christine Sundermann, Charmaine Tutson, Matthew Warren, Ryan Weaver, Kat West
- Samuel Ginn College of Engineering: Virginia Davis, Andrew Eick, Brett Mallinak, Brandi McPherson, Taylor Neumann, Ryan Olsen, Alejandro Otero, James Radich, Jessica Taylor
- College of Education: Katherine Ray, Leonard Towns-Newby
- College of Agriculture: Molli Newman, Sang-Wook Park
- AU AUMSTI & Science in Motion: Roger Birkhead, Tyaunnaka Lucy, Dewayne Riddle, Christina Steele
- WISE Institute at Auburn University: Bonnie Wilson
- Other Representatives: Erika Akins (Southwire Company), Heather Armbruster (Southern Union State Community College), Kelli McCullough (Southern Company Services), Shabaka McKey (Project Lead the Way), Lauren Palmer

Total Number of Students: 142 students presented 117 projects (top 34 projects advanced to state)

- Age Range: 6th-12th grade
- Schools Impacted: Auburn High School, Auburn Junior High School, Beverlye Magnet School, Brewbaker Technology Magnet High School, The Calhoun School, Carver Magnet School, Central High School, D.A. Smith Middle School, Dothan High School, Eclectic Middle School, Elmore County High School, Geneva Middle School, Girard Middle School, Glenwood School, Greenville High School, Greenville Middle School, Hayneville Middle School, J.F. Drake Middle School, Lakeview Christian School, LAMP High School, Lowndes Middle School, Mill Creek Elementary School, Northview High School, Opelika Middle School, Phenix City Intermediate School, Redland Elementary School, Wetumpka High School, Wetumpka Middle School

Facilities: AU Student Center



Program: Getting Under the Surface (G.U.T.S)

Date: Thursday, April 16, 2015; 6:00 pm - 8:00 pm

Description: Parent/Child teams act as lab partners in a 75-90 minute science activity.

Logistics:

- AU Personnel: Erin Percival, Kristen Bond, Khorizon Dunn, Hunter Whitten, Dr. Wendy Hood, Matthew Warren
- Non-AU Personnel: Andrea Riemer- Wrights Mill Road Elementary
- Schools Impacted: N/A
- Total Number of Students: 15
- Total Number of Parents: 17
- Age Range: 1st-6th Grade
- Facilities: SCC 115, SCL 231 & 310

Course: The 3 Second Rule: The true, but gross scientific facts

What's really on our food after we drop it on the floor? What's in the air after we sneeze? Join us as we learn about the invisible and not so invisible stuff in the world around us.

- Age Range: 1st-3rd grades
- Developed by: Andrea Riemer
- Number of Students: 11 total (10 reporting on survey)
- Average Student Satisfaction Ranking: 5 (out of 5)
- Average Parent Satisfaction Ranking: 4.9 (out of 5)



Course: The Dynamic Digestive System

When we eat food, our body will use it to make energy to fuel us, but how does the happen? Travel with us...down.... down...down, as we tour one of the most fascinating organ systems, the digestive system. We will figure out the true story about what really happens to our food after it is chewed and swallowed.

- Age Range: 4th-6th grades
- Developed by: Dr. Wendy Hood & Matthew Warren
- Number of Students: 4 total (3 reporting on survey)
- Student Satisfaction Ranking: 4 (out of 2)
- Parent Satisfaction Ranking: 4.7 (out of 3)



Program: AU Explore**Date:** Friday, May 1, 2015, 8:00 am - 2:00 pm**Description:** Science and Mathematics Open House**Personnel:**

- AU: Mary Lou Ewald, Kristen Bond, Allison Tjelmeland, Tj Nguyen, Erika Dunavant, Amber Derouen, Jacob Varner, Hunter Whitten, Khori Dunn, Chloe Chaudhury
- Non-AU: NA

Schools Impacted:

• Barker Homeschool	• Morris Avenue Elementary
• Bryan Homeschool	• Northside Intermediate School
• Calvary Christian School	• Peripatetic Academy
• Dean Homeschool	• Pick Elementary
• East Smith Station Elementary	• Rosewood Academy
• Fields Homeschool	• Sacred Heart School
• Gadsden Middle School	• Smiths Station Junior High
• Harvest Homeschool	• Valleydale Academy
• Homeschool through Ezekiel Academy	• Vermillion Homeschool
• Knollwood Christian Academy	• Victory Baptist School
• Ladonia Elementary	• Wacoochee Elementary
• Lee Scott Academy	• Wrights Mill Road School
• Liberty Middle School	

Total Number of Students: approx. 1,100

- Age Range: 5th-8th grade

Facilities: Parker Hall, SCL, Rouse Life Sciences, Parker Lawn, Amphitheater, Donald E. Davis Arboretum, SCC, BLC**Natural History Museum EXPO: 9:00 - 12:00 -**

The Natural History Museum hosted its own Biology EXPO which included a series of interactive displays.

- Jon Armbruster
- Jason Bond
- Les Goertzen
- Curtis Hansen
- Brian Helms
- David Laurencio
- Kay Stone
- Dave Werneke



Science EXPO: 9:00 – 12:00 - The EXPO is a series of interactive displays. Students browsed the displays at their own pace and were able to see, touch, hear, and smell the many wonders of science and math! Included in the Science EXPO are live animal displays, featuring snakes, lizards, turtles, spiders, insects, and many more fascinating creatures!

- Nanette Chadwick
- Debbie Folkerts
- Ken Halanych
- Shawn Jacobsen
- Aaron Rashotte
- Microbiology Club

Science Fun Shops – 9:00 – 2:00 “Science Fun Shops” are short, hands-on mini-courses focused on a particular topic. The courses typically last about 45 minutes with 25- 50 participants.

- All About Eyeballs
 - Instructed by: Bob Lishak
 - 1, 45 minute course
 - Number of students impacted: 23
- Build a Hovercraft
 - Instructed by: Kristy Mann
 - 3, 45 minute courses
 - Number of students impacted: 65
- Build a Motor
 - Instructed by: Dave Patrick
 - 7, 45 minute courses
 - Number of students impacted: 126
- Carnivorous Plants
 - Instructed by: Dee Smith
 - 2, 30 minute courses
 - Number of students impacted: 56
- Cartesian Diver
 - Instructed by: Dave Patrick
 - 2, 45 minute courses
 - Number of Students impacted: 54
- Clinical Lab Sciences Open House
 - Instructed by: Kat Milly West
 - 3, 45 minute courses
 - Number of students impacted: 13
- DrawBots
 - Instructed by: Wayne Strickland
- Genes in a Bottle
 - 2, 45 minute courses
 - Number of students impacted: 50
- Genes in a Bottle
 - Instructed by: Mark Liles
 - 2, 45 minute courses
 - Number of students impacted: 42
- Hoo Eats Who?
 - Instructed by : Chris Sundermann, Roland Dute
 - 2, 45 minute courses
 - Number of students impacted: 49
- Seeing is Believing?
 - Instructed by: Linda Pastorello
 - 2, 45 minute courses
 - Number of students impacted: 34
- Sensing Our Beautiful Blue Earth
 - Instructed by: Chandana Mitra
 - 2, 45 minute courses
 - Number of students impacted: 60
- Silly Cilia
 - Instructed by: Tony Moss
 - 2, 45 minute courses
 - Number of students impacted: 45



Math EXPO- 9:00 – 1:00 - The Math EXPO is an outdoor tent full of interactive math learning activities targeted at the 5th-8th grade ability level.

- Andy Owens, Kat Perry (Department of Mathematics and Statistics)
- 4, 45 minute sessions
- Number of students impacted: 261

Demo Shows- 9:00 – 2:00

- Glow Show – 9:00, 10:00, & 1:00
 - Number of students impacted: 102
 - Wei Zhan and Steve Mansoorabadi (Department of Chemistry/Biochemistry)
- Loud and Crazy Show – 12:00 & 1:00
 - Number of students impacted: 134
 - Dewayne Riddle, Christina Steele, Pam Pearson (AL Science in Motion)
- Big Bang – 11:00
 - Number of students impacted: 201
 - John Gorden and Anne Gorden (Department of Chemistry/Biochemistry)



Participation by Departments

Biology

Science EXPO (Interactive Displays)

- Nanette Chadwick
- Debbie Folkerts
- Ken Halanych
- Shawn Jacobsen
- Aaron Rashotte
- Microbiology Club

Science Fun Shops

- All about Eyeballs – Bob Lishak
- Carnivorous Plants – Dee Smith
- DrawBots – Wayne Strickland
- Genes in A Bottle – Mark Liles
- Hoo Eats Who? – Chris Sundermann, Roland Dute
- Seeing is Believing? – Linda Pastorello
- Silly Cilia – Tony Moss

Natural History Museum EXPO

- Jon Armbruster
- Jason Bond
- Les Goertzen
- Curtis Hansen
- Brian Helms
- David Laurencio
- Kay Stone

Chemistry/Biochemistry

Science Demo Shows

- Big Bang – John Gorden and Anne Gorden
- Glow Show – Wei Zhan and Steve Mansoorabadi

Science Fun Shops

- Clinical Lab Sciences - Kat Milly West

Geology and Geography

Science Fun Shops

- Sensing Our Beautiful Blue Earth - Chandan Mitra

Math/Statistics

Math EXPO

- Andy Owens, Kat Perry (graduate students)

Physics

Science EXPO (Interactive Displays)

- Allen Landers and graduate students

Science Fun Shops (Dave Patrick coordinating)

- Build a Motor
- Cartesian Diver

Outreach (AMSTI/ASIM)

Science Fun Shops

- Build a Hovercraft– Kristi Mann (AU-AMSTI)

Science Demo Shows

- Loud and Crazy Show – Dewayne Riddle, Christina Steele, Pam Pearson (AU-ASIM)

Program: SWSM Women's Leadership Symposium**Date:** Thursday, May 7, 2015, 8:00 AM – 1:30 PM**Description:** High School girls, SWSM supporters, AU faculty, and students attend an annual symposium consisting of a panel discussion, breakout sessions, Career Corner, and luncheon with keynote speaker**Personnel:**

- **AU:** Mary Lou Ewald, Kristen Bond, Erica Dunavant, Allison Tjelmeland, Jacob Varner, Amber Derouen, Chloe Chaudhury, Hunter Whitten, Khorizon Dunn, Sherri Rowton, Brook Moates, Tammy Hartwell

Facilities: AU Hotel & Conference Center**Total Number of Students:** 180**Age Range:** 9th-12th Grade**Schools Impacted:**

- Auburn High School
- Beulah High School
- Daphne High School
- Elmore County High School
- Holtville High School
- Lanett High School
- Loachapoka High School
- Montgomery Catholic Preparatory School
- Notasulga High School
- Opelika High School
- Tallassee High School
- Wetumpka High School

Panelists:

- Kathryn Gill, Physics
- Kiara Parker, Biomedical Sciences, Pre-Pharm.
- Katherine Perry, Mathematics and Statistics
- Juanita Rodriguez, Biological Sciences
- Devon Verellen, Geosciences

Breakout session leaders:

- Dr. Beth Yarbrough, Director of COSAM Student Services
- Krysta Diehl, Pre-health Counseling Specialist
- Kathryn Gill, Physics
- Katherine Perry, Mathematics and Statistics
- Juanita Rodriguez, Biological Sciences

Career Corner:

- Anne-Marie Colapeitro, (Microbiology Degree)
- Amy Grilliott (Biological Sciences degree)
- Ashley Hill (Mathematics/statistics degree)
- Angela Jenkins (Chemistry/ Biochem degree)
- Burcu Ozden (Physics degree)
- Lauren Palmer (Pre-health)
- Devon Verellen (Geology/Geography)

Distinguished Speaker: Laura Folsie- Executive Vice President, Response and Environmental Restoration at BP Gulf Coast Restoration Organization

Program: Summer Science Institute

Support: All expenses are covered for SSI students thanks to support from the National Science Foundation, the AU Physics Department, and the Society for Women in Sciences and Mathematics.

Dates: Sunday, May 29 - Saturday, June 6, 2015 (residential)

Description: This summer science program for outstanding 11th-12th grade students interested in science and mathematics is open to students residing in Alabama or Georgia. Seating was limited to 16 (8 females and 8 males) and was granted on an academically competitive basis. During the program students engaged with real-world applications and practitioners of science, performed experiments using cutting edge research equipment, and partnered with COSAM researchers to gain lab skills not taught in high school.



Personnel:

- **Counselors:** Chloe Chaudhury (Chemistry and Biochemistry), Daniel James (Mathematics and Statistics), Allison Tjelmeland (Biology/Education), Jacob Varner (Software and Computer Engineering)
- **COSAM Faculty and Staff:**
 - *Department of Biological Sciences:* Dr. Paul Cobine, Dr. Debbie Folkerts, Dr. Wendy Hood, Shawn Jacobsen
 - *Department of Chemistry and Biochemistry:* Dr. Anne Gorden, Dr. John Gorden, Dr. Steve Mansoorabadi, Dr. Konrad Patkowski, Dr. Brad Merner
 - *Department of Geology and Geography:* Dr. Lorraine Wolf, Dr. Chandana Mitra
 - *Department of Physics:* Dr. Dave Maurer, Dr. Allen Landers, Dr. Uwe Konopka, Dr. Mike Fogle
- **Additional AU faculty/staff:** Mary Lou Ewald (Director of COSAM Outreach), Beth Yarbrough (COSAM Student Services)



Impact:

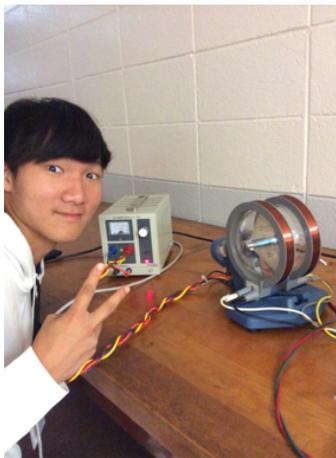
- **Total Number of Students:** 16 students
- **Age Range:** rising 11th-12th grades

Counties Impacted:

- **Alabama:** Elmore, Franklin, Lee, Mobile, Montgomery, Shelby, Tuscaloosa
- **Georgia:** Cherokee, Cobb, Coweta, DeKalb

Facilities: AU Recreation and Wellness Center, Donald E. Davis Arboretum, SCC, SCL, Chemistry Bldg., Rouse Life Sciences Building, Leach Science Center, Petrie Hall





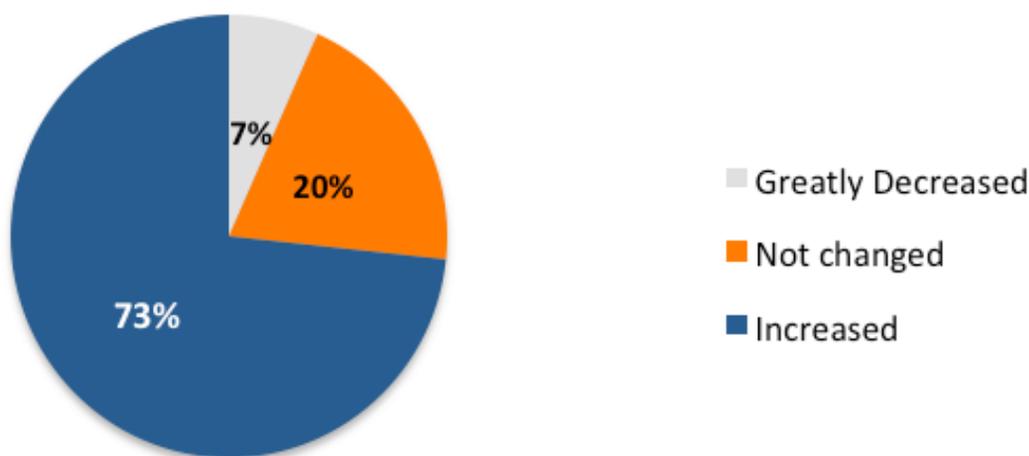
The 2015 Summer Science Institute hosted 16 highly motivated, high achieving students who were chosen to participate by a competitive application process. The students were also selected based on interest in science, mathematics, and Auburn University. The average ACT score of the participants was **31.1**, with a range of 28 to 34. During the first evening of the program, the students completed a short, informational pre-program survey. On the last day of the program, 15 of the 16 participants responded to a 29 question survey. The following section highlights some of the key results from the surveys.

Survey Results:

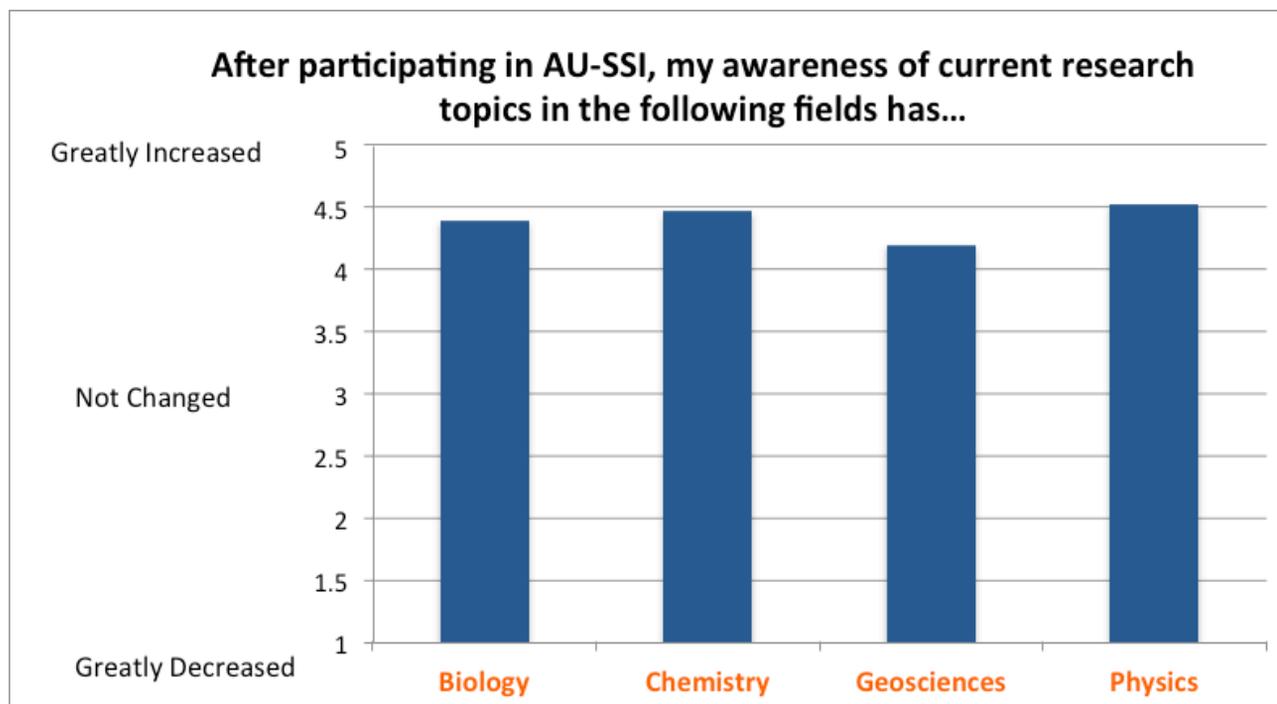
Quantitative Results

- **100%** of the students indicated they would recommend SSI to a friend.
- **100%** of the students reported they were very satisfied (26.67%) or extremely satisfied (73.33%) with their overall experience at SSI.
- **93.33%** reported an increase in their understanding of how to engage in scientific research after participating in AU-SSI.
- **86.67%** of students reported an increased interest in attending Auburn University because of SSI, with **80%** of students indicating they were very or extremely interested.
- **73.33%** reported a greater interest in becoming a scientist after participating in SSI.

After participating in AU-SSI, my interest in becoming a scientist has...

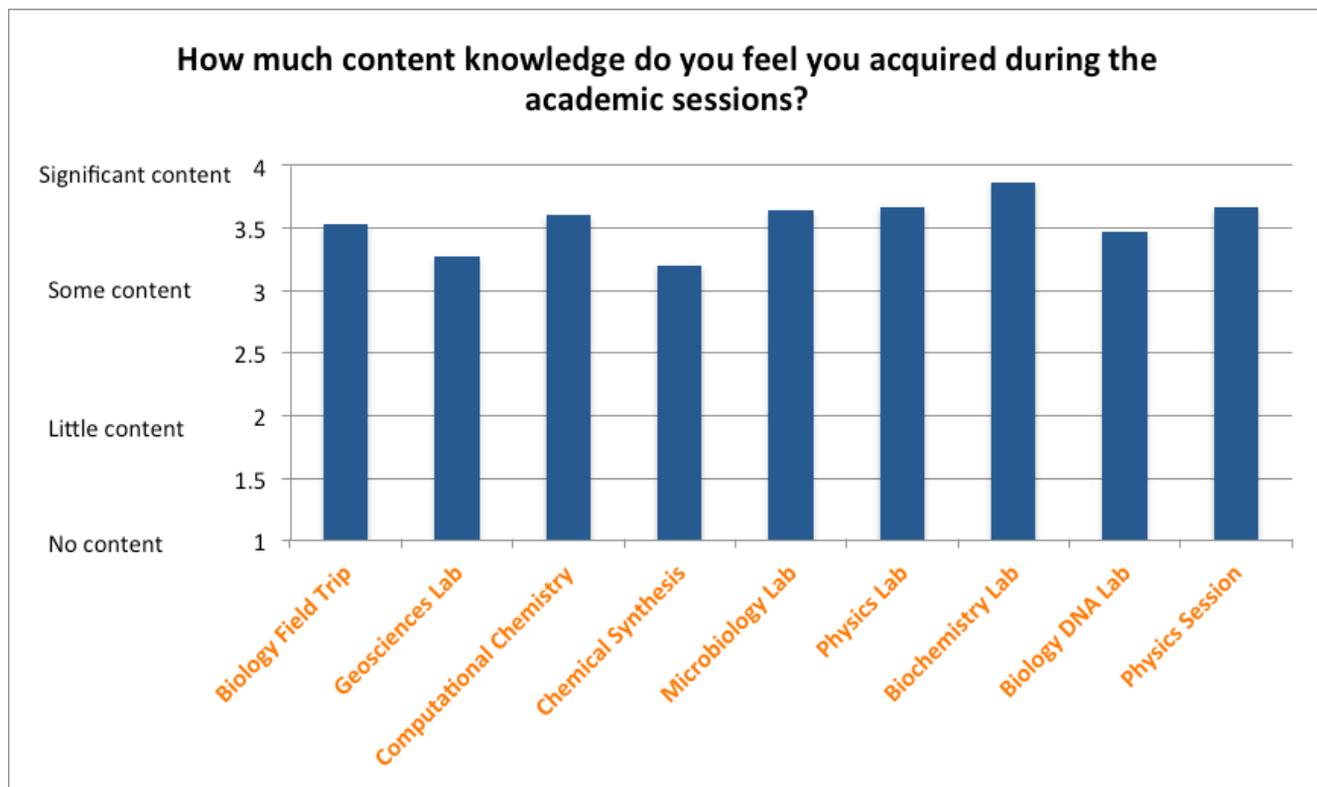


- After participating in SSI, **73.33%** reported an increased interest in biology, **80%** reported an increased interest in chemistry, and **66.67%** reported an increased interest in physics.
- After participating in SSI, **93.33%** of students reported an increased awareness and knowledge of careers in biology, geosciences, and physics, while **100%** reported an increased awareness and knowledge of careers in chemistry.



- **100%** of the students responded that the iPads contributed positively to their experience in AU-SSI. One student commented, “The iPads were greatly helpful during several of the sessions and especially enhanced the modules that involved computational science.”
- **Most** students indicated that the classroom organization website, Edmodo, was easy to use, relatively helpful, but not necessary. One student commented, “Edmodo allowed for communication between the students and the professors which was nice.”

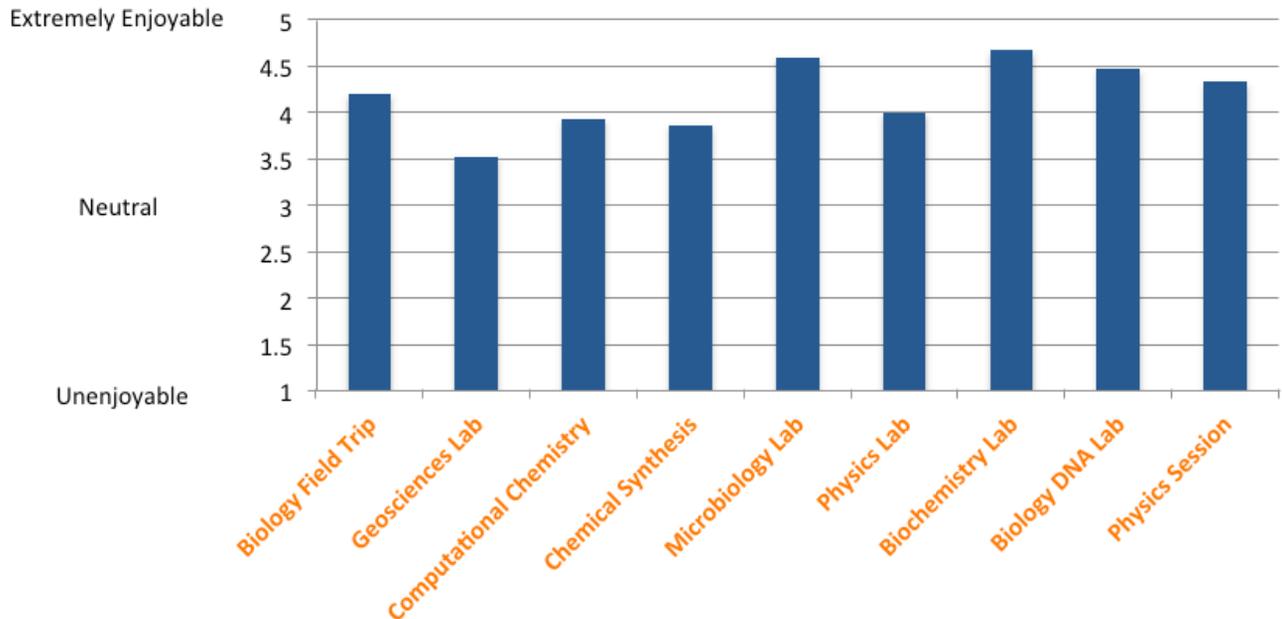




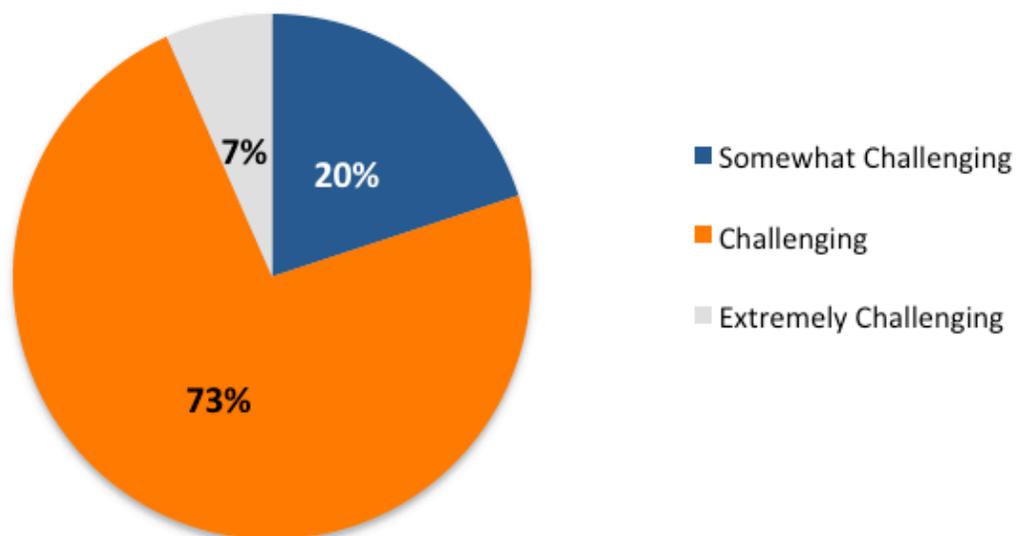
- The most popular academic session was the biochemistry (bioluminescence) lab, with an average rating of 4.67 out of 5. The second most popular session was the microbiology (Gram stain) lab, with an average rating of 4.60 out of 5.
- The students indicated that the most enjoyable lunch-time session was the plasma physics talk and tour of Leach Laboratory, which received an average rating of 4.47 out of 5.
- All of the nighttime activities received ratings over 4 out of 5; the most enjoyable evening program was the Science Demo Show at the Donald E. Davis Arboretum, with a rating of 4.93 out of 5.



How enjoyable were the different academic sessions you participated in during the week?



How academically challenging did you find the courses during the week?



Summer Science Institute Class of 2015



Testimonials from 2015

- “This was really a great program. I loved it and it really got me more interested in science instead of engineering.”
- “It was a great experience. I’m really glad I was accepted to this program. Thanks for a great week!”
- “...I really really like all the professors. They were all so nice and passionate about their fields. I was really inspired.”
- “It was really cool. The field biology we participated in on Monday was super fun. We looked at animals the whole day but did swab bacteria that we saw that we then examined in a microbiology lab.”

Program: Science Matters

Dates:

- Monday, June 1-Friday, June 5; 8:00 AM – 4:00 PM
- Monday, June 15-Friday, June 19; 8:00 AM – 4:00 PM
- Monday, June 22-Friday, June 26; 8:00 AM – 4:00 PM
- Monday, July 6-Friday, July 10; 8:00 AM – 4:00 PM
- Monday, July 13-Friday, July 17; 8:00 AM – 4:00 PM
- Monday, July 27-Friday, July 31; 8:00 AM – 4:00 PM

Facilities: Parker 112, Parker 122, Parker 352, Parker 354, Parker 356, and Natural History Museum



Description: Science Matters is a summer enrichment academy in which elementary and middle school children attend themed weeks filled with experiments, field trips, and make-and-take projects.

Personnel:

- AU: Kristen Bond, Erika Dunavant, Jacob Varner, Chloe Chaudhury, Matthew Morris, Amelie Thomas, Emily Mixson, McKenzie Strickert, Khorizon Dunn, Amber Derouen, Tj Nguyen, Rachel Fisher
- Non-AU: Rebecca Balkcom (Auburn Junior High School), Frank Ware (Retired Sanford Middle School), Gina Watkiss (The Heritage School), Andrew Click (Sanford Middle School), Aleesa Zutter (Yarbrough Elementary School), Dr. Bruce Zutter (Ogletree Elementary School), Cathryn Albright (Dean Road Elementary), Rachel Martin (Yarbrough Elementary School), Julie Price (Yarbrough Elementary School), Brittney Duncan (Wrights Mill Road Elementary School), Linzee Garrison (Yarbrough Elementary School), Jennifer Spencer (Pick Elementary School), Andrea Riemer (Wrights Mill Road Elementary School)

Statistics:

- Total Number of Student Places Filled: 418/436
- Capacity: 96%
- Total Number of Students: 221 students
- Age Range: rising 1st-8th grade

Courses:

Monday, June 1 - Friday, June 5

Engineered for Fun

- Instructor: Brittney Duncan
- Grades: 1 – 2
- Total Number of Students: 22

Slip and Slime

- Instructor: Gina Watkiss
- Grades: 3 – 4
- Total Number of Students: 24



Catch Phrase

- Instructor: Andrea Riemer
- Grades: 5 – 6
- Total Number of Students: 15

Monday, June 15 - Friday, June 19**The Wonder of Weather**

- Instructor: Julie Price
- Grades: 1 – 2
- Total Number of Students: 22

It's Electric

- Instructor: Jennifer Spencer
- Grades: 3 – 4
- Total Number of Students: 24

What's Your IQ?

- Instructor: Frank Ware
- Grades: 5 – 6
- Total Number of Students: 24

The Phenomenon of Fish and Ferns

- Instructor: Museum Curators
- Grades: 7 – 8
- Total Number of Students: 16

Monday, June 22 - Friday, June 26**Lego, Lego, It's off to Play I Go!**

- Instructor: Frank Ware
- Grades: 1 – 2
- Total Number of Students: 22

School of Law

- Instructor: Linzee Garrison
- Grades: 3 – 4
- Total Number of Students: 24

Off the Grid

- Instructor: Dr. Bruce Zutter
- Grades: 5 – 6
- Total Number of Students: 19

Monday, July 6 - Friday, July 10**Science Stew**

- Instructor: Cathryn Albright
- Grades: 1 – 2
- Total Number of Students: 22

Super Sleuth

- Instructor: Julie Price
- Grades: 3 – 4
- Total Number of Students: 24

Balloon Poppers

- Instructor: Andrew Click
- Grades: 5 – 6
- Total Number of Students: 24

Monday, July 13 - Friday, July 17**Space is the Place**

- Instructor: Aleesa Zutter
- Grades: 1 – 2
- Total Number of Students: 22

Lego-Mania – Back to Basics

- Instructor: Frank Ware
- Grades: 3 – 4
- Total Number of Students: 24

Totally Cellular

- Instructor: Rebecca Balkcom
- Grades: 5 – 6
- Total Number of Students: 24

Snacks and Lizards and Insects, Oh My!

- Instructor: Museum Curators
- Grades: 7 – 8
- Total Number of Students: 20

Monday, July 27 - Friday, July 31**Kitchen Chemistry**

- Instructor: Aleesa Zutter
- Grades: 1 – 2
- Total Number of Students: 22

Up in the Air

- Instructor: Dr. Bruce Zutter
- Grades: 3 – 4
- Total Number of Students: 24



Program: STEM-IQ Teacher Fellow Workshop

Description: The objective of STEM-IQ, a 5-year National Science Foundation funded initiative, is to advance teachers' motivation and ability to lead science fair projects and to test the hypothesis that improving science fair participation will enhance teachers' ability to lead scientific inquiry and enhance the quality and diversity of the STEM pipeline in Alabama. Specifically, we aim to develop a professional learning community that links Auburn University STEM faculty with 6th – 12th grade students, teachers and administrators, facilitated through the Auburn University College of Sciences and Mathematics Outreach Center. We will use existing science fair infrastructure as a framework to provide teacher professional development and enhance the STEM pipeline for students from Southeastern Alabama.



Project Goals:

- To establish a network of STEM teachers and area administrators that advocate for students to engage in research experiences and give teachers the tools they need for classroom implementation. To develop a culture of participation in science and engineering fairs in Southeastern Alabama.
- To increase the number of students from underrepresented groups in rural Alabama participating in high quality, meaningful science and engineering research projects.
- To increase positive student attitudes towards STEM through interactions with university research mentors who serve as role models for the students.
- To build a sustainable relationship between Auburn University and regional public schools.

This five-day workshop provided an opportunity for the AU team to meet the work with the first cohort of Teacher Fellows who will be involved in the program for the next 3 years. The workshop provided an overview of the Science Fair system, information on how to mentor students on a science fair project, and gave them the opportunity to create their own inquiry based project while interacting with the AU faculty and staff. We will follow up with a three-day professional development during summer 2016 with this same cohort of 19 teachers to instruct and guide them in hosting their own science fair.

Date: Monday, June 8 - Friday, June 12, 2015

Facilities: AU Sciences Center Laboratory building, AU Sciences Center Classroom building

Personnel:

- **AU:** Mary Lou Ewald (COSAM Outreach), Allison Tjelmeland (COSAM Outreach), Allen Landers (Physics), Virginia Davis (Chemical Engineering), Paul Cobine (Biology), Brian Helms (Biology), Joni Lakin (College of Education)

Impact:

- **Number of Participants:** 18 teachers from the following school systems:
 - Auburn City, Opelika City, Lowndes County, Dothan City



Program: Project Lead the Way Core Training (Biomedical Sciences)

Dates: June 14-26

Facilities: SCL231, SCL310, SCL306

Description:

Project Lead the Way (PLTW) is a non-profit organization that focuses on STEM programs throughout the nation by providing activity-, project-, and problem-based curricula and professional development for STEM educators. By partnering with PLTW, Auburn University is able to facilitate the training of over 200 teachers across 13 different PLTW courses in engineering and biomedical sciences. Acting as PLTW's Affiliate University for Engineering and Biomedical Sciences for the state of Alabama, AU's WISE Institute facilitates the engineering PLTW programs while COSAM Outreach serves the biomedical sciences programs.



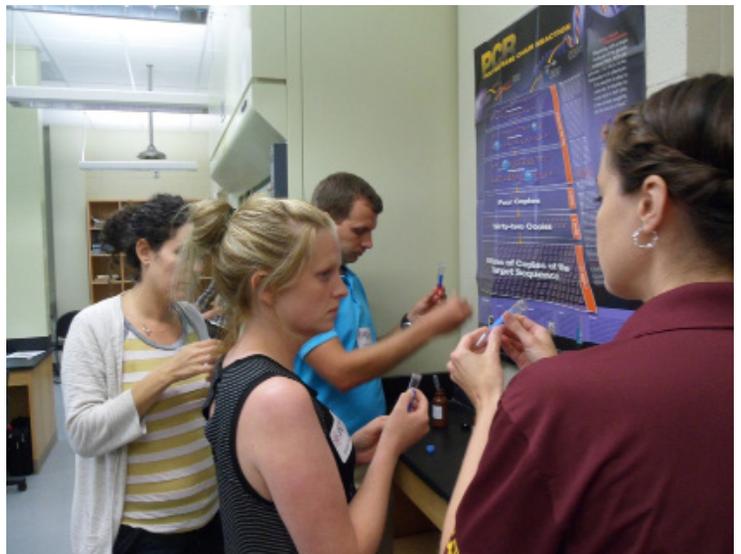
The 2015 Biomedical Sciences educator training was led in June and included the PLTW courses of “Principles of Biomedical Sciences” (PBS), “Human Body Systems” (HBS), and “Medical Interventions” (MI). Each course offers real world based curriculum such as the medical investigation of a fictional death in PBS, data acquisition of respiration in HBS, and the diagnosis of a fictitious disease in MI. Throughout these courses, COSAM Outreach personnel aided in hospitality, lab and classroom resources, staff support, and general facility resources to support instruction.

Courses:

- Medical Interventions
- Human Body Systems
- Principles of Biomedical Sciences

Personnel:

- AU: Mary Lou Ewald, Bonnie Wilson, Erin Percival, Tania McKey, Roger Birkhead, Josh King, Jacob Varner, Chloe Chaudhury
- PLTW Members & Master Teachers: Shabaka McKey, Ahnie Ingram, Chris Walters, Brian Nikodym, Jean Eckert, Jared Fuller, Charity Woodard



Impact:

48 teachers attended from the following schools (states):

- Bottenfield (AL)
- Chapman P - 8 (AL)
- Dallas County Career Technical Center (AL)
- Eufala High School (AL)
- Francis Marion High School (AL)
- Grissom High School (AL)
- Hampton Cove (AL)
- Huntsville City Schools - Mountain Gap (AL)
- Huntsville High School (AL)
- McAdory Middle School (AL)
- Mountain Brook Jr. High School (AL)
- New Century Technology High School (AL)
- Oxford High School (AL)
- Pelham High School (AL)
- Pell City High School (AL)
- Riverchase Middle School - Pelham (AL)
- Robert C Hatch High School (AL)
- Semmes Middle School (AL)
- Sylacauga High School (AL)
- Sylacauga High School (AL)
- Whitesburg P - 8 (AL)
- Tenaya Middle School (CA)
- Hill Campus of Arts & Sciences (CO)
- Celebration K8 School (FL)
- Union Park Middle School (FL)
- Vernon Middle School (FL)
- Winter Park High School (FL)
- Providence Christian Academy (GA)
- Simpson Middle School (GA)
- Mansfield High School (LA)
- New Orleans Charter (LA)
- St. Pauls School (LA)
- Simmons High School (MS)
- Vancleave High School (MS)
- Anson High School (NC)
- Buncombe County Schools- Enka MS (NC)
- Meadowview Magnet School (NC)
- Union County Schools (NC)
- Kenny C. Guin Middle School (NV)
- MESA Charter High School (NY)
- Health and Sciences Academy (OR)
- Murchison Middle School (TX)



Program: Robotics University

Dates: July 7-9 and July 7-10

Facilities: SCA, SCC 115

Description:

Robotics University is Phase II of the Math Science Partnership grant, “RE²-FoCUS”, funded by the Alabama State Department of Education. The RE²-FoCUS acronym was chosen carefully by the proposing team of scientists and educators to reflect the importance of providing teachers with the professional development needed to be effective mentors in a project-based, active inquiry learning environment. The aim is to furnish teachers with the foundational

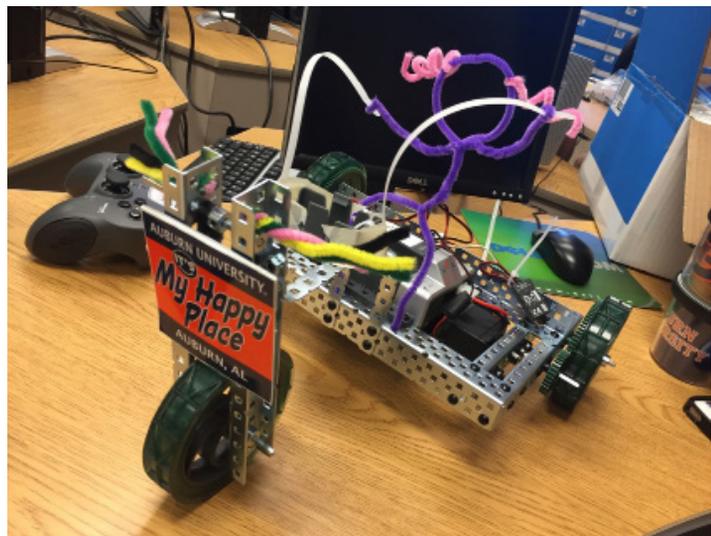


tools to ‘re-focus’ their instructional strategies as the state and nation undergo a transition to establish new science standards designed to effectively prepare students for high-tech workforce needs in addition to inspiring the innovative capacity of our citizenry through K-12 science education. Alabama is fortunate to have two strong statewide programs - AMSTI and BEST Robotics - that if more closely aligned with each other, could aid science teachers in meeting these needs. The RE²-FoCUS Initiative utilizes the statewide networks that AMSTI and BEST Robotics have established between K-12, higher education and industry over the past 11 years to provide effective, content-deepening professional development to middle school teachers, AMSTI specialists, and STEM faculty at 2- and 4-year colleges associated with BEST.

In 2015, COSAM faculty and outreach personnel, along with technical professionals from VisualEdge Robotics (a robotics education and equipment company) conducted a series of robotics education workshops (“Robotics University”) during the summer. Each workshop consisted of 3 to 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, power, along with the basic algebra and trigonometry used in applying these concepts to real situations. To enhance the capacity of each BEST hub to provide meaningful, content rich robotics workshops in their region in future years, BEST hub personnel were invited to attend the workshops at AU.

Personnel:

- AU: Mary Lou Ewald, Allen Landers, Tj Nguyen, Kristen Bond, Josh King, Jacob Varner, Chloe Chaudhury
- VisualEdge: Dan Ward, Aaron Hudson, Kyle Love



Impact:

46 teachers attended from the following schools (counties) in Alabama:

- Alexander City Middle School (Tallapoosa)
- Autauga County Technology Center (Autauga)
- Benjamin Russell High School (Tallapoosa)
- Brantley High School (Crenshaw)
- Buckhorn Middle School (Madison)
- Capitol Heights Middle School (Montgomery)
- Centreville Middle School (Bibb)
- Choctaw County Elementary School (Choctaw)
- Citronelle High School (Mobile)
- Cleburne County Elementary School (Cleburne)
- Cornerstone Classical Christian Academy (Montgomery)
- Cullman Area Career Center (Cullman)
- DA Smith Middle School (Dale)
- Drake Middle School (Lee)
- East Elementary School (Cullman)
- East Limestone Middle (Limestone)
- Evangel Christian Academy (Montgomery)
- Fairview Middle School (Cullman)
- Good Hope Middle School (Cullman)
- Lanett High School (Chambers)
- Lexington (Lauderdale)
- Loachapoka High School (Lee)
- Marbury High School (Autauga)
- Millbrook Middle School (Elmore)
- Moulton Middle School (Lawrence)
- Munford Elementary School (Talladega)
- Muscle Shoals Middle School (Colbert)
- New Hope Elementary (Madison)
- Pleasant Valley High School (Calhoun)
- Reeltown High School (Tallapoosa)
- Rehobeth Middle School (Houston)
- Springwood School (Chambers)
- Straughn (Covington)
- The Donoho School (Calhoun)
- William Rodney Elementary (Tallapoosa)
- Winfield Middle School (Marion)
- Yarbrough Elementary School (Lee)
- Zora Ellis Junior High School (Talladega)

2 BEST hub personnel also attended from the following hubs:

- Birmingham (Blazer) BEST
- Dothan (Wiregrass) BEST



Program: Save the Animals**Dates:** July 13-14 and July 16-17**Facilities:** SCL231, SCC129**Description:**

Save the Animals is a multidisciplinary component of the Math Science Partnership grant (along with Robotics University) that includes engineering as a disciplinary core idea along with life sciences, earth/space sciences, and physical sciences. This component of the grant, funded by the Alabama State Department of Education, seeks to complement the middle grades science curriculum with field-tested, research-based design activities and the scientific concepts and practices that support design. Specifically, Save the Animals acts as a teacher training and resource program complementing the goals of Robotics University—to furnish teachers with the instructional strategies and resources needed as the state and nation undergo a transition to establish new science standards designed to effectively prepare students for high-tech workforce needs in addition to inspiring the innovative capacity of our citizenry through K-12 science education.



In 2015, COSAM outreach personnel, along with Dr. Christine Schnittka (from AU Curriculum and Teaching) and Dan Schnittka (creator of www.stemteachingkits.com) conducted a series of STEM education workshops (“Save the Animals”) during the summer. The cumulative workshop consisted of 4 days (approximately 30 hours) of intense training on the use of STEM teaching kits designed by Dr. Christine Schnittka and Dan Schnittka. During this training, teachers enhanced skills related to engineering design and how the design process could be translated into other spheres of learning such as the life, earth, space, and physical sciences. Science and math content lessons related to the kit scenarios and relevant instructional strategies were integrated throughout the training. Topics included simple thermodynamics, force and motion, energy generation and transformations, circuits, and various other engineering and physical science concepts. To structure the lessons in a fun and problem-based format, topics were presented through real-world scenarios where participants were tasked with using their engineering design skills and content knowledge to save animals from negative outcomes—saving penguins from the effects of climate change, sea birds from the effects of the Gulf Oil Spill of 2010, and various other cases. To enhance the scope and reach of this program, AMSTI specialists also attended the workshop and were given the teaching kit resources to act in the future as hubs for providing further Save the Animals teacher training and resources to their respective local areas.

In 2015, COSAM outreach personnel, along with Dr. Christine Schnittka (from AU Curriculum and Teaching) and Dan Schnittka (creator of www.stemteachingkits.com) conducted a series of STEM education workshops (“Save the Animals”) during the summer. The cumulative workshop consisted of 4 days (approximately 30 hours) of intense training on the use of STEM teaching kits designed by Dr. Christine Schnittka and Dan Schnittka. During this training, teachers enhanced skills related to engineering design and how the design process could be translated into other spheres of learning such as the life, earth, space, and physical sciences. Science and math content lessons related to the kit scenarios and relevant instructional strategies were integrated throughout the training. Topics included simple thermodynamics, force and motion, energy generation and transformations, circuits, and various other engineering and physical science concepts. To structure the lessons in a fun and problem-based format, topics were presented through real-world scenarios where participants were tasked with using their engineering design skills and content knowledge to save animals from negative outcomes—saving penguins from the effects of climate change, sea birds from the effects of the Gulf Oil Spill of 2010, and various other cases. To enhance the scope and reach of this program, AMSTI specialists also attended the workshop and were given the teaching kit resources to act in the future as hubs for providing further Save the Animals teacher training and resources to their respective local areas.

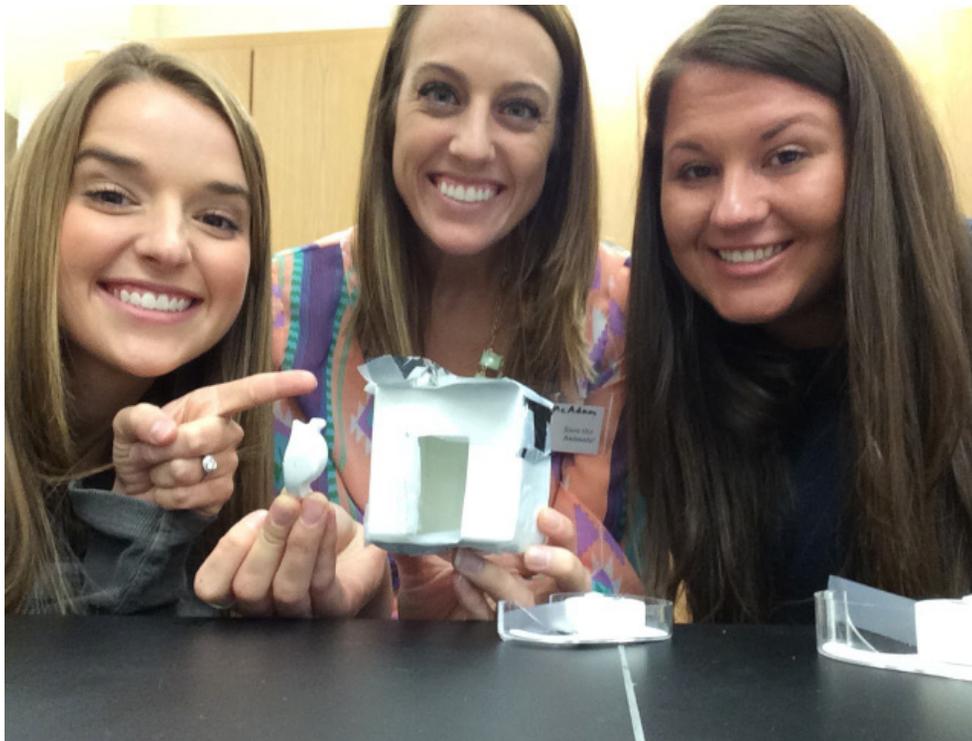
Personnel:

- **AU:** Mary Lou Ewald, Christine Schnittka, Dan Schnittka, Tj Nguyen, Jamil Ghazal, Kristen Bond, Josh King, Jacob Varner, Chloe Chaudhury



Impact:

- 22 teachers attended from the following schools (counties) in Alabama:
 - Alexander City Middle School (Tallapoosa)
 - Autauga County Technology Center (Autauga)
 - Benjamin Russell High School (Tallapoosa)
 - Brewbaker Middle School (Montgomery)
 - Buckhorn Middle School (Madison)
 - CCES, PGES, FFS, CCMS, RHS, RES (Cleburne)
 - D.A. Smith Middle School (Dale)
 - Florence Middle School (Lauderdale)
 - JFDrake (Lee)
 - Loachapoka High School (Lee)
 - Millbrook Middle School (Elmore)
 - Munford Elementary School (Talladega)
 - Reeltown High School (Tallapoosa)
 - Rehobeth Middle School (Houston)
 - Simmons Middle School (Jefferson)
 - Vinemont (Cullman)
- 5 AMSTI representatives also attended from the following sites:
 - Auburn
 - Troy
 - WSCC-ASU
 - Athens
- Other parties represented included 2 representatives from the Alabama State Department of Education and 3 education graduate students from Auburn University.



Program: Robotics Merit Badge Day**Dates:** September 19, 2015**Facilities:** SCC 115**Description:**

Robotics Merit Badge Day was a first time robotics training to help a local Boy Scout troop earn their robotics Merit Badge. The Boy Scouts had to do various activities with the Vex IQ kits in order to check off all of the requirements for the Merit Badge. Along with robotics skills that were covered in a fun competition, the Boy Scouts also had to learn about safety, robotics industry, and robotics careers.

The competition consisted of a simple game invented by Jacob and Tj that involved each team of two Boy Scouts playing against 3 other teams with the only goal to get “good” racquetballs into their quadrant and get “bad” racquetballs into other team’s quadrants. This competition allowed for quick and easy rounds, but also added a lot of area for the Boy Scouts to work on their robot driving skills as well as come up with different strategies and robot designs for the competition.

In order to complete the other requirements, the Boy Scouts listened to informative PowerPoint presentations that were followed by quizzes that were taken using a website called Kahoot.it on provided iPads.

Personnel:

AU: Tj Nguyen, Jacob Varner, Mary Lou Ewald, Allen Landers

Impact:

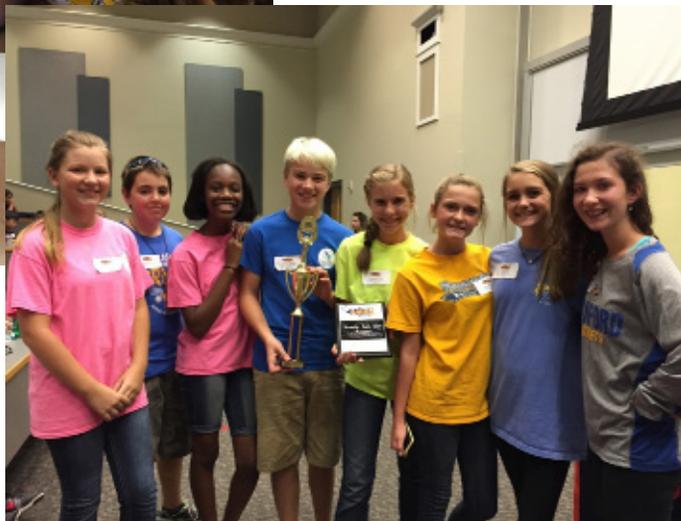
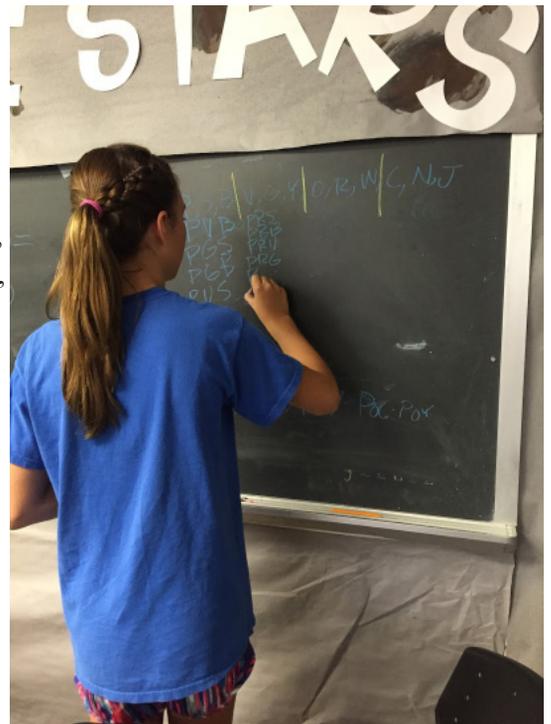
20 Boy Scouts from Troop 371

Program: Middle School AMP'd**Date:** Saturday, September 19, 2015**Description:** Mathematical Puzzle Challenge**Personnel:**

- AU: Kristen Bond, Teddy Dubose, Josh King, Khorizon Dunn, Hunter Whitten, Erika Dunavant, Andrew Owens, Katherine Perry, Josh Harrelson, Dr. Jessica McDonald, Math Graduate Students
- Non-AU: Math/Science/Technology Teachers from participating schools

Facilities: Parker Hall, Science Center Auditorium**Impact:**

- Schools: Arnall Middle School, Beulah Junior High School, Central Educational Center, East Coweta Middle School, Evans Middle School, Lee Middle School, Madras Middle School, Montgomery Catholic Preparatory School, Saint James School, Sanford Middle School, Smokey Road Middle School
- Total Number of Students: approx. 150
- Age Range: 7th – 8th grade



Program: War Eagle BEST**Dates:**

- Thursday, August 27th; 2:30 PM – 7:30 PM (Kick Off Day)
- Sunday, September 27th; 12:00 – 5:00 PM (Mall Day)
- Friday, October 9th; 12:00 – 5:00 PM (Competition Day)
- Saturday, October 10th; 7:00 AM – 5:00 PM (Competition Day)



Description: Middle and high school local robotics program

Personnel:

- AU: Mary Lou Ewald, Kristen Bond, Chloe Chaudhury, Teddy Dubose, Erika Dunavant, Khori Dunn, Garron Griffiths, Peter Jones, Josh King, Ryan Olsen, Jessica Taylor, Jacob Varner, Hunter Whitten, TJ Nguyen, and various student volunteers and judges
- Non-AU: Barbara Bryan, Pete O'Day, Dan Schnittka, Lucas Hunter, and various judges

Schools Impacted:

- A-2-Z Home School
- Alabama Christian Academy
- Central Educational Center
- Eastwood/Cornerstone School
- Edward Bell Career Technical Center
- Glenwood School
- LAMP High School
- Lanett High School
- Lee-Scott Academy
- Loachapoka High School
- Marbury High School
- Millbrook Middle School
- Montgomery Catholic Preparatory School
- Opelika High School
- Opelika Middle School
- Saint James School
- Southside Middle School
- Springwood School
- Tallassee High School
- Wetumpka High School

Total Number of Students: approx. 500

Age Range: 5th – 12th grade

Facilities: AU Student ACT, AU Student Center, Auburn Mall, and Opelika High School

Pay Dirt Storyline

The BEST Inc. Mining Division has purchased a mine that contains several valuable resources in record-shattering concentrations - but there's a problem: The mine is far too dangerous for humans. Consequently, the mine was decommissioned years ago and has since fallen into disrepair. Initial evaluations of the mine have revealed five lucrative materials at various depths beneath the surface: Coal, Iron, Aluminum, Copper, and Lithium.

BEST has released a request to prototype a robotic system that can repair the mine and retrieve these valuable commodities. Much like the real mining industry, success in this design competition will be determined by net profit, and you will be in direct competition with your opponents while gathering commodities and attempting to repair the mine to working order. Also, the market values of the commodities will change over time, so you may have to adjust your priorities mid-contest.



BEST Award Winners

- 1st Place: Wetumpka High School*
- 2nd Place: Eastwood/Cornerstone School*
- 3rd Place: Saint James School*

Game Winners

- 1st Place Robotics: Southside Middle School*
- 2nd Place Robotics: Tallassee High School*
- 3rd Place Robotics: Eastwood/Cornerstone School*
- 4th Place Robotics (finalist): Wetumpka High School*

*Advanced to South's BEST Regional Competition

Sponsors of the Program:

- Alabama National Guard
- Auburn University Outreach
- Boeing
- Brasfield & Gorrie
- Briggs & Stratton
- Donaldson Company Foundation
- Hyundai Motor Manufacturing AL
- Jacobs
- Neptune Technology Group
- Northrop Grumman Corp.
- Southern Company
- Visual Edge
- VWR Foundation
- Walmart Foundation
- Wells Fargo Foundation



Program: Getting Under the Surface (G.U.T.S) - October**Date:** Tuesday, October 28, 2015; 6:00 pm - 8:00 pm**Description:** Parent/Child teams act as lab partners in a 75-90 minute science activity.**Logistics:**

- AU Personnel: Mary Lou Ewald, Josh King, Hunter Whitten, Chloe Chaudhury, Wayne Strickland, Nicole Garrison, and Kat West
- Non-AU Personnel: Aleesa Zutter (Yarbrough Elementary)
- Schools Impacted: N/A
- Total Number of Students: 41
- Total Number of Parents: 42
- Age Range: 1st-6th Grade
- Facilities: SCC 115 & 122, SCL 310 & 231

**Course: Pumpkin Mania**

Have you ever wondered what's in a pumpkin? Where do they come from and why are they so special? How can you measure the size of a pumpkin? What is inside a pumpkin? Is it a fruit? A vegetable? We will use our scientific and investigative skills to delve deep into the pumpkin in this course and find out facts about pumpkins!

- Age Range: 1st-3rd grades
- Developed by: Aleesa Zutter
- Number of Parent-Student Pairs: 10
- Average Student Satisfaction Ranking: 5 (out of 5)
- Average Parent Satisfaction Ranking: 4.5 (out of 5)

Course: Magic Investigators

It's been said that it's hard to tell the difference between magic and very advanced technology, but can you tell the difference when it comes to our illusions? Join up with fellow investigators to see if you can spot the science behind our tricks. Is it real magic, or is there something at work behind-the-scenes? You decide!

- Age Range: 3rd-6th grades
- Developed by: Wayne Strickland
- Number of Parent-Student Pairs: 13
- Average Student Satisfaction Ranking: 4.83 (out of 5)
- Average Parent Satisfaction Ranking: 4.83 (out of 5)

Course: The GUTS of Blood & Diseases

Blood. What does it look like under the microscope? How far do red cells travel in their life-time? Is there really a “blood disease” that can make you become a WEREWOLF or is that a myth? What do sickled red cells look like under a microscope? Medical Laboratory Scientists will help you answer these and other SCARY and fun facts about “The GUTS of Blood and Diseases”.

- Age Range: 1st-3rd grades
- Developed by: Kat West
- Number of Parent-Student Pairs: 12
- Average Student Satisfaction Ranking: 4.75 (out of 5)
- Average Parent Satisfaction Ranking: 4.83 (out of 5)



Course: Along Came a Spider

Do you know that you are rarely ever more than six feet away from a spider and that spider silk is one of the strongest natural fibers known? And, with over 40,000 species, spiders are among the most abundant predators on the planet! Come discover spiders and learn how they benefit humans, how they make and use silk, how spider venom aids them, and how to recognize spiders common to your backyard. Put your fears aside as we explore this important, remarkable, and diverse group of animals.

- Age Range: 4th-6th grades
- Developed by: Nicole Garrison
- Number of Parent-Student Pairs: 6
- Average Student Satisfaction Ranking: 5 (out of 5)
- Average Parent Satisfaction Ranking: 5 (out of 5)



Program: Project Lead The Way (PLTW) Alabama State Conference**Date:** Tuesday, November 10, 2015**Facilities:** AU Student Center

Description: School counselors, teachers and administrators play a key role in promoting Project Lead The Way to students and parents. To successfully enroll students in appropriate PLTW courses, counselors, teachers and administrators need a solid understanding of the program and the curriculum, especially when students are considering engineering technology or health sciences as a career or have strong aptitude in science and math.



As the state's affiliate university, 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 all 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 the annual conference. The 2015 PLTW state conference for teachers, counselors and administrators from Alabama and was co-hosted by COSAM Outreach and the WISE Institute. 27 breakout sessions were offered at the one-day conference.

Personnel:

- COSAM Outreach: Mary Lou Ewald, Kristen Bond, Josh King, Teddy Dubose, Erika Dunavant, Jacob Varner, Hunter Whitten, TJ Nguyen,
- WISE Institute: Bonnie Wilson, Zenda Davis, Taylor Fitzgerald

Impact:

- Number of Participants: Approximately 211 teachers, school administrators, counselors, and other STEM stakeholders

Conference Sessions:

- **Strands Offered:**
 - Launch
 - Gateway
 - Engineering
 - Biomedical
 - Administrator/Counselor
- **Keynote Speakers:**
 - Susan Hayes – Principal of Barkely Bridge Elementary School in Hartselle, AL
 - Kate White – STEM & PLTW teacher at Guntersville High School in Guntersville, AL
 - Kyle Pinckard – Secondary Coordinator and Career and Technical Director for Opelika City Schools in AL
 - Alexis Thrasher – Junior at Auburn University majoring in Microbiology with a Psychology minor. COSAM Leader, student ambassador, and previous PLTW Biomedical student.



Program: South's BEST Robotics Championship

Date: Friday, December 4th; 3:00 – 7:0 PM (Team Registration and Hub Council Meeting)

Saturday, December 5th; 8:00 AM – 7:15 PM (Competition Day)

Sunday, December 6th; 8:00 AM – 5:00 PM (Competition Day)

Description: Middle and high school regional robotics championship program for winning teams from 15 BEST hubs across the south

Personnel:

AU: Mary Lou Ewald, Kristen Bond, Jessica Taylor, Garon Griffiths, Teddy Dubose, Josh King, Chloe Chaudhury, Erika Dunavant, Khori Dunn, Jacob Varner, TJ Nguyen, Hunter Whitten, and various student volunteers and judges

Non-AU: Lucas Hunter (Head Ref), Pete O'Day (Field Construction), Dan Schnittka (Technical Director), Matt Schuster (Production Manager), Science teachers from participating schools

Total Number of Students: approx. 2,000

Age Range: 5th – 12th grade

Facilities: AU Student Center, Wiggins Hall, SCC, SCL, SCA, and the AU Beard–Eaves–Memorial Coliseum



Schools Impacted (Hub Affiliation):

School Name	Hub Affiliation
Brookhaven Academy	Mississippi
Brooks High School	Northwest Alabama
Central Magnet School	Music City
Clarke County High School	Jubilee
Corinth School District	Mississippi
Cottonwood High School	Wiregrass
Covenant Christian School Robotics	Northwest Alabama
DARC	Tennessee Valley
Davidson High School	Jubilee
Demopolis Advanced Robotics Team	Shelton State
Discovery School	Music City
Eastwood/Cornerstone School	War Eagle
Episcopal Day School	Central Alabama
Evangel Christian School	Blazer
Fairview High School	North Alabama
Fort Payne High School	Northeast Alabama
Fyffe High School	Northeast Alabama
Good Hope Middle School	North Alabama
Homewood High School	Blazer
Homewood Middle School	Blazer
John T. Morgan Academy	Selma
Lexington High School	Northwest Alabama
Lindsay Lane Christian Academy	Tennessee Valley
MACH Robotics	Jubilee
Marshall County Homeschool Robotics	Northeast Alabama
Martin Middle School	Selma

School Name	Hub Affiliation
MHMS Robotics Team	Music City
Moulton Middle/Lawrence County High School	Northwest Alabama
Oak Mountain High School	Blazer
Opifex Homeschoolers	Shelton State
Pace High School	Emerald Coast
Providence Christian School	Wiregrass
Ridgecrest Christian School	Wiregrass
Saint James School	War Eagle
Saltillo High School	Mississippi BEST
Saraland Middle School	Jubilee
SCHE	Mississippi
Seaside Neighborhood School	Emerald Coast
Semmes Middle School	Jubilee
South Forsyth High School	Georgia
Southside Middle School	War Eagle
Spain Park High School	Blazer
Sparkman High School	Tennessee Valley
St. Luke's Episcopal School	Jubilee
St. Vincent de Paul Catholic School	Jubilee
Starkville High School	Mississippi
Sweet Water High School	Shelton State
Talladega Career Tech Center	Central Alabama
Talladega High School	War Eagle
The Donoho School	Central Alabama
Tuscaloosa Christian School	Shelton State
Wetumpka High School	War Eagle
Wheeler High School	Georgia
Wicksburg High School	Wiregrass
Woodham Middle School	Emerald Coast



SOUTH'S BEST



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)

Game 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)

Sponsors of the Program:

Southern Company

Hyundai Motor Manufacturing AL

Neptune Technology Group

Donaldson Filtration Solutions

Briggs & Stratton

Wells Fargo

Auburn University Outreach

National Guard

VWR Foundation

Walmart

Jacobs

Boeing

Brasfield Gorrie General Contractors

Visual Edge Robotics

S²P Sound Source Productions

Northrop Grumman

Auburn and Opelika Tourism Bureau

South's BEST 2015 Steering Team

Director

Mary Lou Ewald

Awards/Judging Coordinator

Mary Lou Ewald

Awards/Judging Assistant

Chloe Chaudhury

Emcee

Jay Knorr, Allen landers

Field Management

Pete O'Day, Garon Griffiths

Floor Boss

TJ Nguyen

Graphic Design

Khorizon Dunn

Wally Ridgway

Head Judge

Peter Jones

Head Referee

Luke Hunter

Head Field Referees

Danny Coleman

Matthew Westberry

Hospitality

Josh King

Judging Captains

W. Robert Ashurst

Mike Fogle

Frank Ware

Pit Bosses

Dana Hickey

Dan Schnittka

Photography

Barbara Bryan

Production Manager

Matt Schuster

Registration and Sales

Teddy Dubose

Head Scorekeeper

Jacob Varner

Signage and Staging

Hunter Whitten

Team Advocates

Michael Colletti

Mark Rose

Team Coordinator

Kristen Bond

Technical Coordinator

Dan Schnittka

Video Production/Coordination

Greg Ruff

Volunteer Coordination

Erika Dunavant

Jessica Taylor

Webmaster

Jacob Varner

WISE Breakfast Coordinator

Bonnie Wilson

South's BEST 2015 Represented Hubs

Blazer BEST

University of Alabama-Birmingham (Birmingham, Alabama)

Northeast Alabama BEST

Northeast Alabama Community College (Rainsville, Alabama)

Central Alabama BEST

Central Alabama Community College (Talladega, Alabama)

Northwest Alabama BEST

Northwest Shoals Community College (Muscle Shoals, Alabama)

Emerald Coast BEST

University of West Florida (Pensacola, Florida)

Selma BEST

Wallace Community College (Selma, AL)

Georgia BEST

Southern Polytechnic State University (Marietta, Georgia)

Shelton State BEST

Shelton State Community College (Tuscaloosa, AL)

Jubilee BEST

Mobile, Alabama

Tennessee Valley BEST

Calhoun Community College (Decatur, Alabama)

Mississippi BEST

Mississippi State University (Starkville, Mississippi)

War Eagle BEST

Auburn University (Auburn, Alabama)

Music City BEST

Lipscomb University (Nashville, Tennessee)

Wiregrass BEST

Dothan, Alabama

North Alabama BEST

Wallace State Community College (Hanceville, Alabama)



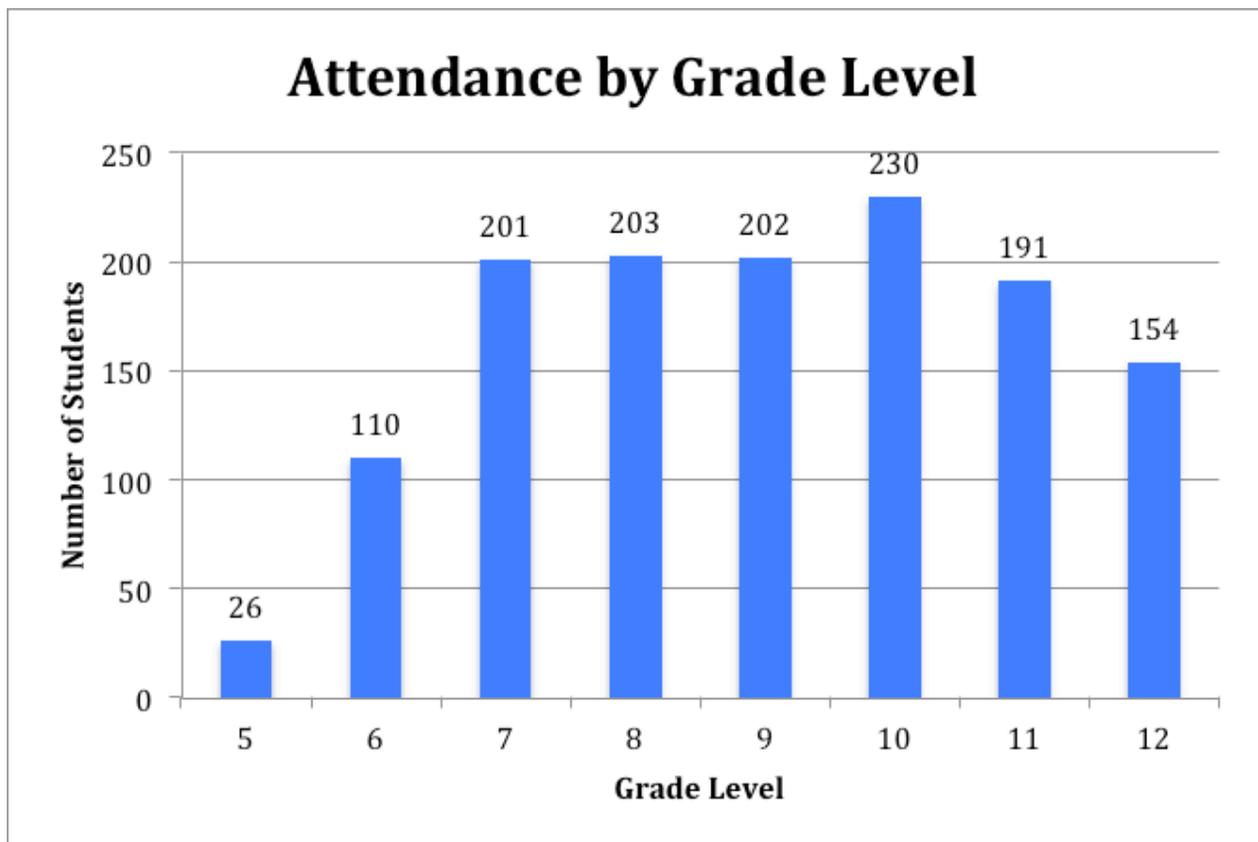
2015 Student Survey Summary

Introduction

The 2015 South's BEST Robotics Championship Competition was held December 5-6 at the Beard Eaves Memorial Coliseum on the campus of Auburn University. Fifty-five teams from five states were in attendance, with 39 of the teams (71%) from Alabama. The other represented states included Georgia, Florida, Mississippi, and Tennessee. A total of 1,352 students in attendance at the event completed a brief one-page survey. Student surveys were a requirement of team participation in the event, but did not necessarily represent all team members and visitors.

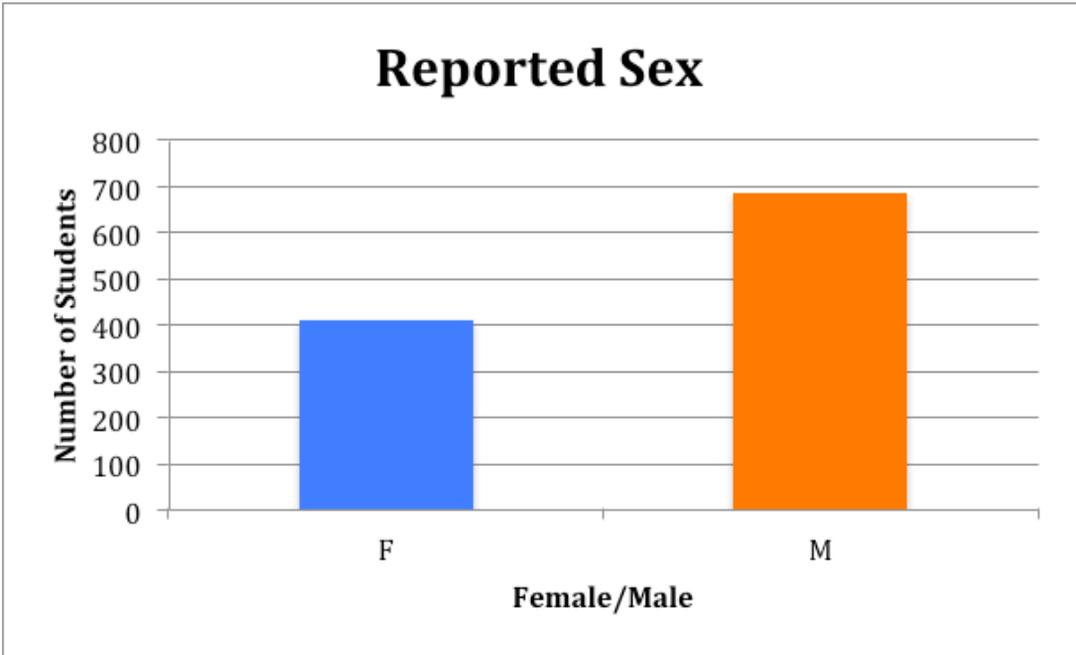
Grade Level

Of the 1,352 students who completed surveys, 1,307 provided their grade level. Middle School students (5th-8th grade) accounted for 543 (42%) of student attendees, while 764 (58%) students reported being in high school (9th – 12th grade).



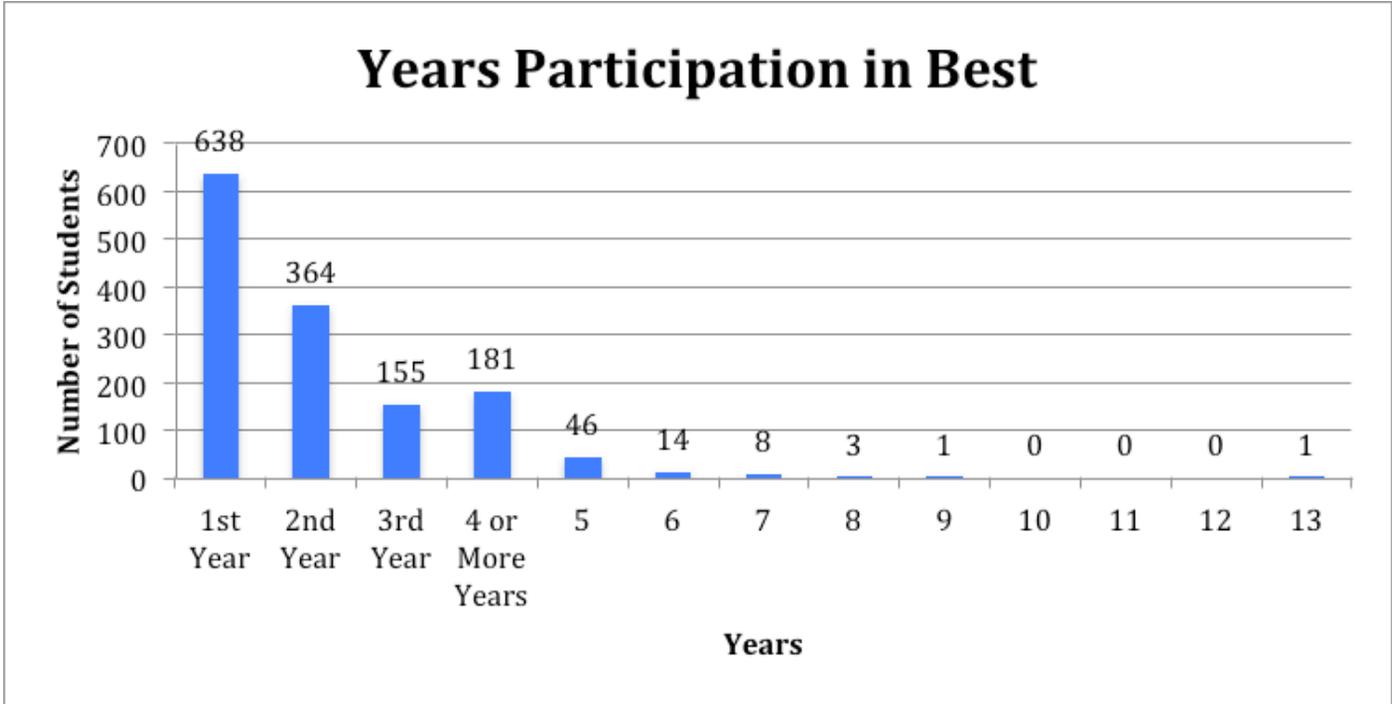
Sex

Of the 1,352 completed surveys, 1,097 students provided their sex; 412 (38%) were female and 685 (62%) were male.

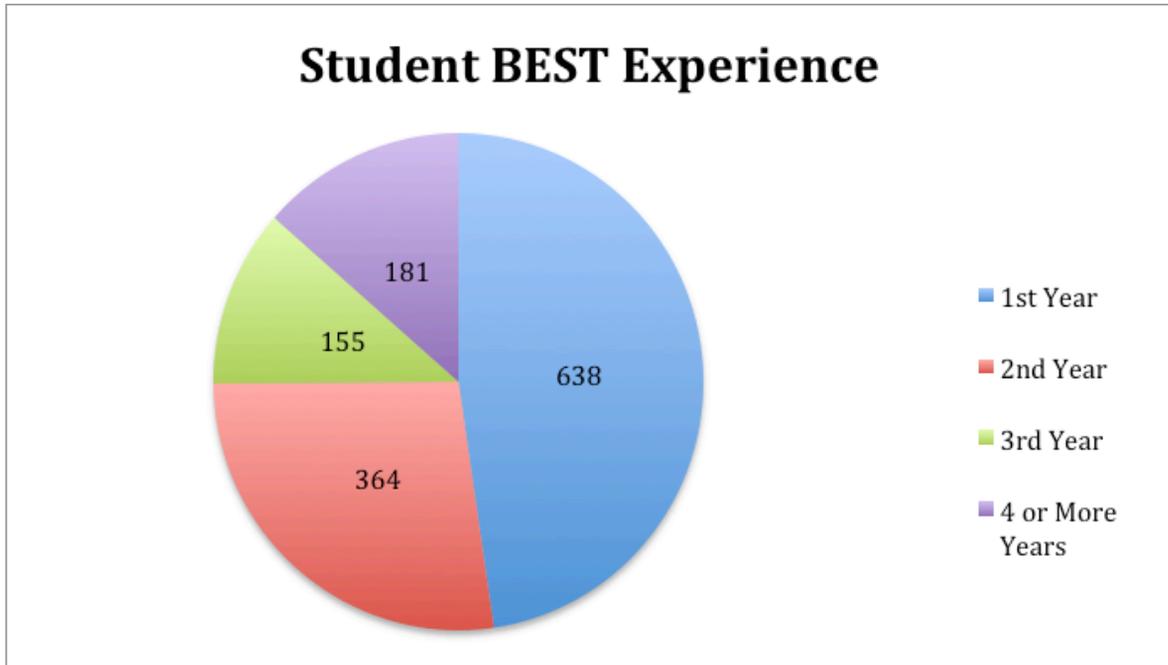


Years in the Program

A total of 1,338 students provided the number of years they've participated in BEST. There were 638 first year students, accounting for 48% of attendees who answered this question; there were 364 second year students, accounting for 27% of students; a total of 155 students were in their third year of BEST, comprising 11.5% of attendees; and there were 181 students who have participated for four or more years, accounting for 13.5%. The longest reported participation was 13 years.

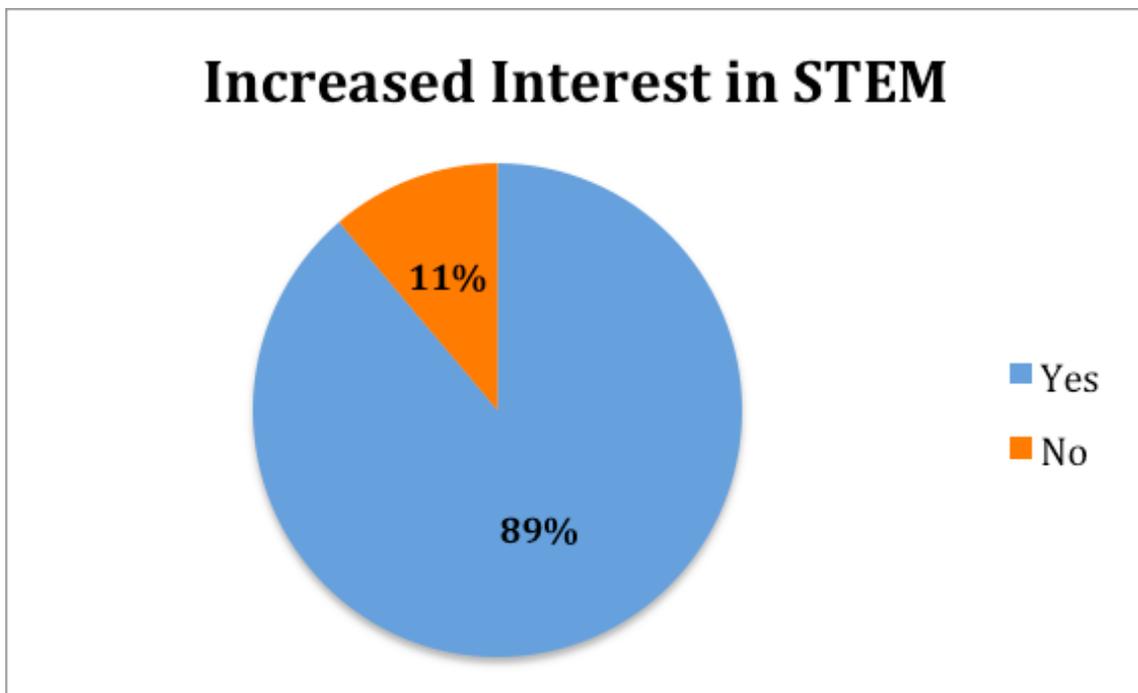


As the program continues to grow, new teams and competition sites are added each year, which attracts a new group of students. These data represent the innovation and competitive spirit of first year teams and participants, as nearly half of competitors are new to the program.



Increased Interest in STEM

Of the 1,352 complete surveys, 1,342 responded to a question regarding their interest in STEM fields *as a direct result* of participation in BEST. 1,191 (89%) expressed an increased interest in math, science, and/or engineering because of their participation in BEST.



Plans to Attend College Among All Students

Of the 1,352 completed surveys, 1,344 students responded, with 22 students not planning to attend college (1.6%), while 1,322 did (98.4%). Of those who did not plan to attend college, two were female, eighteen were male, and two did not report their sex. These students indicated that they did not plan to attend college due to plans to get a job, join the military, or lack of money.

From the completed surveys, there were 777 high school students who indicated that they intend to attend a college or university. Of these 777 respondees, 165 students chose undecided for intended alma mater, accounting for 21% of high school responders.

Of 777 high school students who plan to attend a college or university, there were 612 students who indicated which school(s) they were interested in attending. There was no limit to the number of schools a student could list, and most students listed 1-3 colleges or universities as preferred. The following were listed as primary schools of interest:

Auburn – 23.5%	Univ. South Alabama – 2.2%	Troy – 2.1%
Alabama – 8.7%	Vanderbilt – 1.6%	Full Sail University – 0.9%
Georgia Tech – 6.4%	UAH – 2.9%	Tennessee Tech – 0.9%
Mississippi State – 6.6%	University of TN – 2.1%	LSU – 0.9%
MIT – 2.8%	University of MS – 1.2%	Jacksonville State – 1.3%
UAB – 3.8%	UNA – 2.1%	<i>Other</i> – 17.9%

Fields of Study

There were thirteen available fields of study for students to choose from and an “other” write-in option. The data below represents the frequency of occurrence for the intended fields of study (students were allowed to select more than one field). Of 1,322 students who indicated intent to attend college, only one student did not select at least one major, and 54 students (4%) selected “Undecided” as intended major. ***Engineering/Computer Science accounted for 34.1% of student interest, while Science and Mathematics (Including medical related fields) accounted for 22.3% of selected majors by students.*** The frequency of “other” was 3.3% with write in responses including vocational specialties, anthropology, and more. The remaining response breakdown was as follows:

Agriculture 2%

Architecture 5%

Business 6%

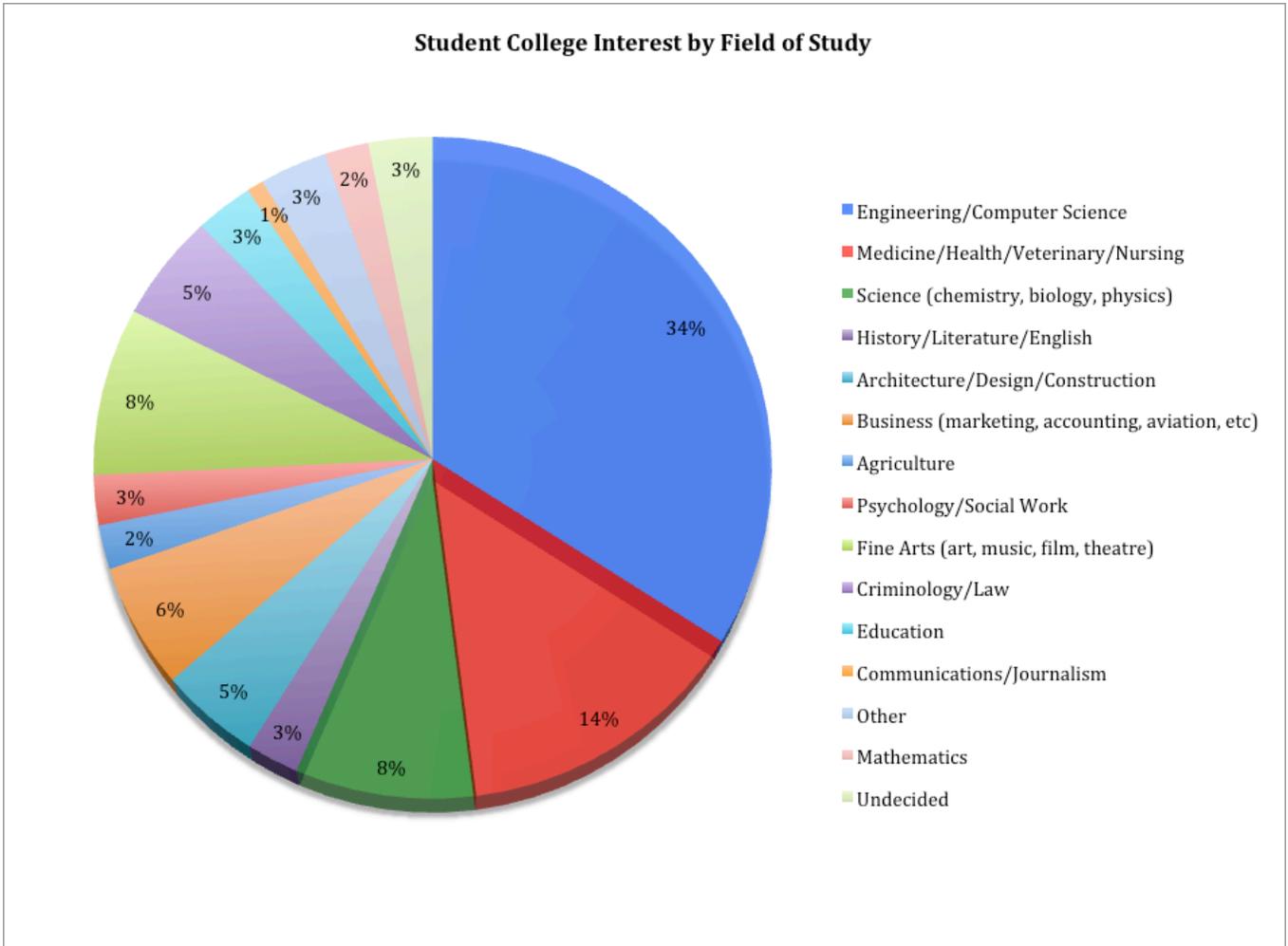
Communications or Journalism 1%

Criminology or Law 5%

Education 3%

(continued below)

Fine Arts 3%
 History, Literature, or English 3%
 Mathematics 2%
 Psychology/Social Work 3%



College Interest Among High School Students

Twenty-two students said they had no plans of attending college, ten of which were in high school. There were 777 high school students that responded with intentions to attend some college or university.

At least one major was selected by 755 of the college-bound high school participants (students were able to select more than one major), with the remaining 22 students indicating undecided. **Engineering/Computer Science was selected by 39.3% of the college-bound high school students, while COSAM (including medicine) majors accounted for 22.0% of the students.** Within COSAM majors, 63.7% of choices were health related, while the remaining 36.3% chose sciences. High school students who selected “other” accounted for 2.7% of the total responding population, not including those who filled in undecided.

The following represents the percentage breakdown of the other choices of study:

Agriculture 1.9%

Architecture 3.9%

Business 7.4%

Communications or Journalism 0.73%

Criminology or Law 4.1%

Education 2.6%

Fine Arts 6.5%

History, Literature, or English 2.4%

Mathematics 1.3%

Psychology/Social Work 2.8%





Student Survey

Name: _____ City/State: _____

School: _____ Grade: _____

Gender: Female Male

1.) Do you intend/want to go to college?

Yes

No

If so, where would you like to attend? _____

What field of study do you plan to major in?

Agriculture

Architecture/ Design/ Construction

Business (marketing, accounting, aviation, etc)

Communications/ Journalism

Criminology / Law

Education

Engineering/ Computer Science

Fine Arts (art, music, film, theatre)

History/ Literature/ English

Mathematics

Medicine/ Health/ Veterinary/ Nursing

Psychology/ Social Work

Science (chemistry, biology, physics)

Other _____

2.) If you are NOT planning to attend college, why not?

I have no interest in attending college

I plan to get a job

I can't afford to attend college

Other: _____

3.) Has participating in the BEST Program increased your interest in the fields of math, science, and/or engineering?

Yes

No

4.) How many years (including this year) have you participated in BEST?

1 year

2 years

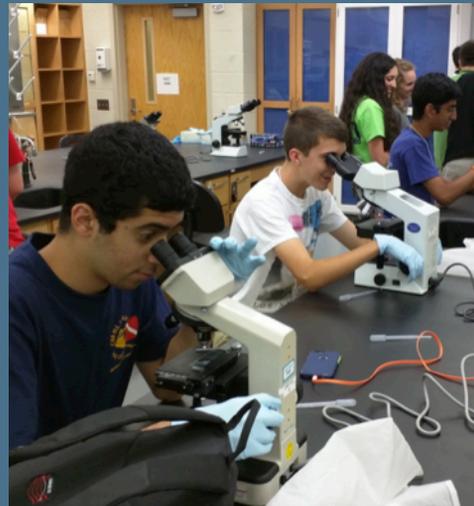
3 years

More than 3 years: _____

5.) Are you a member of your school's BEST team or are you attending as a visitor supporting your school's BEST team?

Team Member

Visitor





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