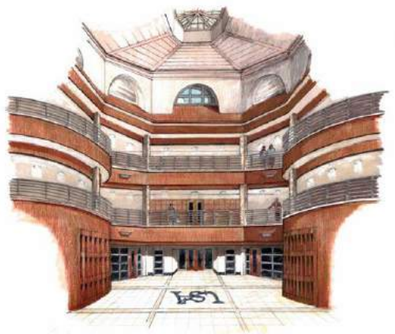
Shelby Hall

at the University of South Alabama

University Blvd. and Old Shell Road



Shelby Hall's atrium



University of South Alabama
CFITS | Center for Forensics, Information Technology & Security
150 Jaguar Drive, Mobile, Alabama (251)460-6390

UNIVERSITY OF SOUTH ALABAMA

Les Barnett, Director
2018

K-12 CYBER STEM INITIATIVE

CFITS PARTNER SCHOOLS PROGRAM

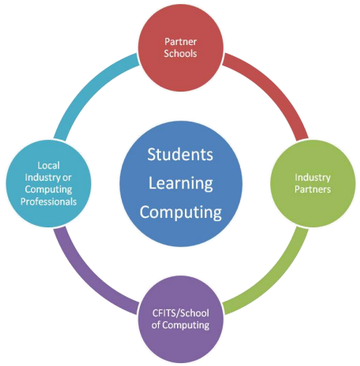


CENTER FOR FORENSICS, INFORMATION TECHNOLOGY, AND SECURITY

with the

SCHOOL OF COMPUTING

K-12 STEM PARTNERS



Structurally, the Partnership connects the Center for Forensics, Information Technology, and Security (CFITS) to each Partner School.

Other stakeholders in the Partnership are The School of Computing and its Faculty, 25 Industry Advisory Board members, 200 Industry Partners, and 1,000 Industry Professionals.

Additional stakeholders include the Department of Defense through its AMRDEC collaboration agreement with CFITS, the Air Force ROTC, and other participating agencies including Keesler's Cyber Warrior School, the Navy's Center for Information Warfare Training, the US Army Corps of Engineers, National Science Foundation's CyberCorps, and others, all appreciated.

Administration Support

Les Barnett, Director, CFITS
Dr. Alec Yasinsac, Dean, School of Computing
Melissa Smith, Senior Instructor and Recruiter, School of Computing

Children of Alumni Scholarship

The USA National Alumni Association Scholarship is a one-time (non-renewable) $2,500 tuition fee waiver. Academics, activities, and leadership are considered in awarding the scholarship. The scholarship will be disbursed in two installments beginning Fall Semester. Recipient will be notified by mail in mid-April.

USA National Alumni Association Baldwin County Book Scholarship

The USA National Alumni Baldwin County Chapter Book Scholarship is awarded to an outstanding entering freshman who is a full-time resident of Baldwin County, AL. Academics, activities and leadership are considered in awarding the scholarship. Recipient will be notified by mail in May.

MEASURING RESULTS

There is a wide acceptance of the fact that STEM competence among US High School graduates, including Alabama High School graduates, is not up to world standards. Among educators, the need to improve STEM education to world standards has been a topic for improvement at the federal, state and local levels, and is well accepted as a real problem in workforce development.

What is less widely recognized is the fact that here in the U.S., over two-thirds of STEM job openings for college graduates today and through 2022 are predicted to be in the computer sciences.

If the U.S. stays on its present course, of this total of nearly 160,000 jobs in computing, only about 50,000 students who fill them will be graduated in the U.S., and of those 50,000 many will be foreign nationals.

The opportunity for our High School graduates in this field is very large, and dependent on the quality of STEM education we provide our young people. To this end, there are many efforts all across the country to generate student interest in STEM education, and growing recognition of the dominant prospects in the computer sciences at the college degree level.

One challenge we all face is budget cuts. For that reason alone, we must measure the impact of these efforts, and their efficacy for each learning activity. There is wide excitement among students, teachers and parents about robotics camps, as evidenced by their widespread growth. However, they are not always managed in such a way that their impact on STEM learning can be measured.

CFITS, working with our Partner Schools has developed a protocol for measuring the impact of each learning activity that is part of our effort. The initial elements include:

- Measuring each activity in terms of student time "immersed" in the activity, called "immersion units."
- Keeping accurate and true costs of each activity, divided by each school, grade, class and per student.
- Employing each activity with whole grades of students in a given Partner School, or where not possible, an entire class.
- Keeping accurate records of the frequency of each activity by "immersion units" within each grade or class, by year.
- In addition to the budget constraints, it is just good business.

HONORS COLLEGE

Students should consider applying to the Honors College. Admitted students benefit from a community of intellectual curiosity and drive, as well as opportunities to participate in the larger intellectual and cultural life of the campus, the community, the state, and the world. Honors students may be elligible to receive additional scholarship support, including Whiddon, Alumni, and University funds for single awards to support tuition and educational expenses. The Honors College also offers awards for study abroad, conference travel, and research. Students may apply as late as their junior year, but to maximize the value of the Honors College experience, we recommend that students apply, if possible, immediately after being admitted to the University of South Alabama. All majors welcome.

To learn more, go to http://southalabama.edu/colleges/honors/apply.html

NATIONAL ALUMNI ASSOCIATION

USA National Alumni Association Port City Book Scholarship

The USA National Alumni Association Port City Chapter Book Scholarship is awarded to an outstanding entering freshman who is a full-time resident of Mobile County, AL. Academics, activities, and leadership are considered in awarding the scholarship. Recipient will be notified in the mail in July.

William J. Sirmon Graduate Student Scholarship

The USA National Alumni Association William J. Sirmon Graduate Student Scholarship is a one-time (non-renewable) $1,000 tuition fee waiver. Academics and leadership are considered in awarding the scholarship. The scholarship will be disbursed in two installments beginning Fall semester. Only completed applications will be reviewed by the Alumni Scholarship Selection Committee. Recipient will be notified by mail in mid-April.

Madge and Gladys Outlaw Freshman Alumni Scholarship

The USA National Alumni Association Freshman Scholarships are awarded to outstanding entering freshmen at USA. Academics, activities, and leadership are considered in awarding the scholarships. The four (4) $2,500 one-year (non-renewable) scholarships are tuition-fee waivers and will be awarded for the Fall semester. Semester disbursement is based upon the individual being enrolled as a full-time student at USA, actively participating in University activities and maintaining a 3.0 cumulative GPA. If the student does not meet these standards, he or she will be requested to appear before the Alumni Scholarship Selection Committee. Recipient will be notified by mail in mid-April.

Patrick E. and Mary F. Hicks Book Scholarship, Allen J. Pearl Book Scholarship

The USA National Alumni Association Scholarships (Patrick E. and Mary F. Hicks Book Scholarship and the Allen J. Pearl Book Scholarship) are designed to recognize a student who has achieved success in extracurricular as well as academic endeavors at the University of South Alabama. Academics, activities, and leadership are considered in awarding the scholarships, as well as financial need. The two $500 book scholarships will be awarded at the beginning of Fall Semester. Recipients will be notified by mail in mid-April.

PROGRAM ORIGIN

The K-12 STEM Partner School Program is the result of the K-12 STEM Initiative of the USA School of Computing Advisory Board, and continues to be actively supported by the efforts of the Promotion Special Interest Group of that Board.

Implementation of our SoC K-12 STEM Initiative - the Math, Science, and Computing Initiative Project (4.1) - was intended to increase the pool of qualified high school graduates in the area from which to recruit for growth of our programs in the SoC.

SoC programs here at USA are widely recognized across all university disciplines by college associations as well as government associations at the federal, state, and local levels. In 2011 and renewed again in 2016 our efforts were recognized with designation as a Center of Academic Excellence in Information Assurance Education by the Department of Defense and Homeland Security.

The State of Alabama's efforts in workforce development are largely driven by efforts in economic development, and we at SoC and CFITS are part of that effort. With the Department of Labor reporting that through 2022, over two-thirds of all jobs in STEM fields will be in computing, it becomes clear why so much demand exists for our graduates.

Currently, there are 3 jobs for each computing graduate. Department of Labor data projects this to continue at least ten years into the future.

By engaging industry partners who demonstrate specific interest in K-12 math and science education, we have accelerated the development of this program; its implementation began in Fall 2012.

This program endeavors to improve student success in *all* STEM disciplines, with a substantially increased number of high school graduates both STEM capable and Computer Science aware.

GOALS

1. Improve retention of grade level STEM skills in our Partner School students.
2. Educate K-12 students in Computer Science.
3. Create employable individuals in the sciences.
4. Help address the Cyber Security work force needs of our nation.
5. Impart the importance of Learning Objects as a teaching tool in the STEM fields of learning.
6. Establish the cost effectiveness of each activity, while improving the value of each.
7. Build a pool of STEM proficient high school graduates from which to recruit successful college students ready and able to participate in the School of Computing degree programs.

Connecting K-12 Students to Computing as a Science



Les Barnett
CFITS Director

The School of Computing has many objectives, not the least of which is to expand enrollment by reaching out to community, state and regional populations to promote computing as a career and the USA School of Computing as a competitive choice for those who are seeking computing education.

To that end, the SoC faculty has developed and approved a policy to provide a structured approach for SoC faculty members to conduct outreach activities. These activities will improve recruiting access and opportunity within our school, and will be incorporated into the faculty member's service activities for an academic year. SoC faculty members are expected to incorporate K-12 outreach activities into their service goals and objectives in each academic year.

One result of this committed effort on the part of our faculty has been the creation of age-appropriate, computing-focused instructional segments. These take many forms, including field trips, workshops, summer camp classes, computing camps, presentations at high schools, participation in STEM extra-curricular activities at the K-12 level, teacher training, and mentoring.

A second result is the delivery of such content to K-12 students by SoC faculty. Some examples are:

- Cryptography – Designed for a high school math or computing class
- Blender3D – Covers coordinates; good for 3rd-6th grade math or art classes
- Creating a Web Page – HTML code; good for Middle School math classes
- Brain-Computer Interface – Good for middle or high school logic/decision making class or a life science class
- Project Management - Critical Path Method – This is a logic/decision making concept for middle school. Note-there is no use of computers in this field trip
- Retro Gaming Console using Raspberry Pi – This is appropriate for elementary to High Schools (4th—10th) math. Students will learn how to build their own retro gaming console using a Raspberry Pi and open source software.
- Video Podcasting – This is appropriate for Middle to High Schools (6th - 10th). Students will learn to create a video podcast using separate audio and video files.
- Object Oriented Programming using "Scratch the Cat" – This is appropriate for end of year K-5 and first graders



BEST events at SoC



All these and 30 others have been documented and comport to our field trip standard, and are now delivered by other faculty, graduate assistants, or staff. Other examples are workshops ("Robot C" for BEST Robotics, JAVA for AP CS), robotics programming camps (CFITS Robotics programming camps, Robots Acting and Performing (RAP), CFITS computing camps), and "Grace Hopper" visits to high school students during CS Education week.

In addition to these local and regional efforts, our faculty participate in statewide outreach to women.

Neil and Laura Henderson Scholarship Fund
This scholarship was established in 2007 for the purpose of providing financial assistance to one student from each class within the School of Computing. Students must have a GPA of 3.0 or higher to be considered for this award.

Roy J. Daigle and Kathryn A. Gradle Scholarship in Information Systems
This scholarship was established in 2008 for the purpose of providing financial assistance to sophomore, junior, or senior Information Systems majors with a composite ACT of 28 or higher and a high school and college GPA of 3.0 or higher.

SoC Scholarships
The School of Computing awards scholarships in amounts ranging up to $5,000 to students entering the School as first time freshmen or transfers. Each year over $50,000 in School scholarships are awarded.

Cisco and Strategic Allied Technologies Endowment
This scholarship was established in 2013 for the purpose of providing financial assistance to an incoming freshman or current undergraduate student majoring in the School of Computing. Incoming freshmen students should have a minimum 23 ACT and a minimum 3.0 GPA.A current student should have a minimum 3.0 GPA.

Rajani Ranade Endowed Scholarship for Academic Excellence
This scholarship was established in 2010 for the purpose of providing financial assistance to a student who has completed a degree and seeks to obtain a graduate degree in the School of Computer and Information Sciences. Students must have an overall GPA of 3.0 or higher in undergraduate courses and must obtain one letter of reference from a faculty member in the School of Computer and Information Services.

The Dr. Matt and Amy Campbell Endowed Scholarship
This scholarship was established in 2014 for the purpose of providing financial assistance to a student in the School of Computing who qualifies for the Mitchell-Moulton award as determined by the University. Student must have a minimum 3.0 GPA and demonstrate financial need.

Gordon and Geri Moulton Scholarship in School of Computing
This scholarship was established in 2013 for the purpose of providing financial assistance to a deserving full-time student in the School of Computing with a minimum 3.0 GPA and a minimum 23 ACT. The John W. Laidlaw Foundation established this scholarship in memory of President Emeritus Gordon Moulton and in honor of Geri Moulton.

SoC Recruiting Scholarships
This scholarship was established for the purpose of providing financial assistance to deserving incoming freshman students majoring in the School of Computing.

V. Gordon Moulton Memorial Scholarship in the School of Computing
This scholarship was established for the purpose of providing financial assistance to incoming freshman students majoring in the School of Computing.

Please Note: New and updated information on scholarships available for USA and the School of Computing is available on the University of South Alabama website at: http://www.southalabama.edu/departments/financialaffairs/scholarships/index.html or contact the Office of Scholarship Services

SCHOLARSHIPS

The University of South Alabama—Get There Through Computing

Students receiving University scholarships will have the award credited to their tuition and fees due each semester. Any balance from scholarships should be used to pay for associated academic costs such as books at the USA Bookstore, USA Housing, and USA Food Service.

Students desiring to apply for College or Departmental scholarships should consult the appropriate Department Chairs for application procedures.

Renewal criteria for Presidential Scholarships include maintaining a 3.0 minimum cumulative USA GPA as well as meeting all other criteria outlined in student's scholarship contract. For awards made prior to the 2002-2003 academic year, refer to scholarship contract for GPA and other renewal criteria.

Abraham Mitchell Business, Presidential, and Bay Area Scholarships are awarded beginning late January each year to students who have completed the admissions process by the December 1 priority deadline. A special scholarship application is required. Students are encouraged to apply early as funds are limited to accepted students.

School of Computing Scholarships

The School of Computing has many departmental scholarship opportunities to offer our students. All of our scholarships may be added on top of any general University scholarships such as Presidential or Bay Area. (All SoC endowed scholarships are subject to available funding.)

Endowed Scholarship - Computer Science

This scholarship was established for the purpose of providing financial assistance to a graduate student in the School of Computing who demonstrates high academic achievement.

SCIS Advisory Board Endowed Scholarship Fund

Funds to support this scholarship were given by local business representatives to support an incoming freshman to the School of Computing. Students need to have a composite score of 22 or higher on their ACT and a high school GPA of 3.0 or higher to qualify for this scholarship.

Association of Computing Machinery Scholarship

This scholarship was established for the purpose of providing financial assistance to a student majoring in the School of Computing who demonstrates high academic achievement and service.

Feinstein Scholarship in CIS

The Feinstein's have sponsored this scholarship for an incoming freshman in the School of Computing. Qualified students must have a high school GPA of 3.0 or higher, a composite ACT score of 28 or higher, and a teacher's letter of recommendation.

Denny & Marianne Wilkins School of CIS Sciences Award

This scholarship was established in 2006 for the purpose of providing financial assistance to incoming freshmen in the School of Computer and Information Sciences. Student must have a composite ACT score of 26 or higher and a GPA of 3.5 or higher to be considered.

Les and Alleen Barnett Endowed Scholarship Fund

This scholarship was established in 2006 for the purpose of providing financial assistance to an incoming freshman in the School of Computing. Students must have a GPA of 3.0 or higher to apply for this scholarship.

Neil and Laura Henderson Scholarship Fund

Roy Daigle/Kathryn Gradle Scholarship in Information Systems

Wei and David Feinstein Endowed Scholarship for Rising Sophomore in CIS

Matt and Amy Campbell Endowed Scholarship

Pardue-Landry Information Systems Scholarship

BBVA Compass Cyber Securtiy Endowed Scholarship

Porter Endowed Scholarship

Robert A. Robertson SoC Entrepreneur Scholarship

M/M William Paul Cobb Scholarship

Bart and Gesina Longenecker Scholarship in IS

Anthony and Misty Monge Scholarship

Ranade Scholarship of Academic Excellence

Cisco and Venture Technologies Endowment

Stimpson Scholarship in Computing

V Gordon Moulton Memorial Scholarship in the SoC

Gordon and Geri Moulton Scholarship in SoC

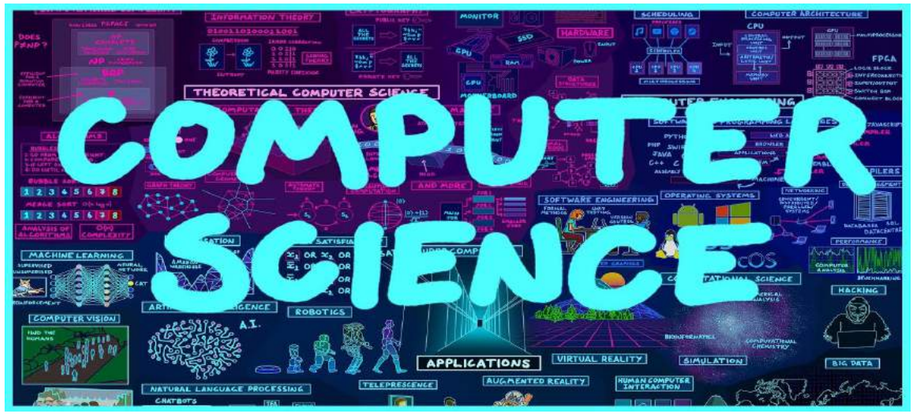
Mike and Kim Jones Endowed Scholarship

Jyothi and Venkat Thumula Endowed Scholarship

Warren H. Nicholson Endowed Graduate Scholarship in Computing Warren

H. Nicholson Scholarship in Computing (Undergraduate)

Field Trip pictures with Partner School students!

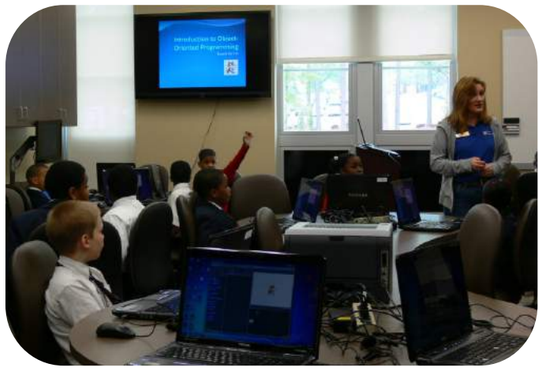




Mobile Christian 10th grade-BCI



Blender-3D Field Trip with Prichard Preparatory



Scratch the Cat (intro to object oriented programming)



Brain Computer Interface (BCI) Field Trip







On Campus for a Field Trip





2nd Graders on a CFITS Field Trip to Shelby Hall



Alabama School of Math and Science Design a Web Page Field Trip







ADVANCING CURRICULUM

We are incorporating the teaching of computer science and other computing principles into the teaching of STEM courses in the Partner Schools. This is implemented through co-operation with the Partner Schools in ways that actually improve and/or enhance the teaching of the underlying STEM curriculum.

Specifically, we develop and employ the SoC Faculty K-12 Outreach Initiative developed learning objects, lectures, experiments and other computing-focused instructional segments, the USA Mesonet, connecting with GEMS, J-WIT, CFITS Summer Camps, Partner School Summer Camps, NDEP Summer Camps, CFITS Field Trips, SoC Faculty visits to schools, Industry Partner presentations and field trips, Industry Professional presentations, and CFITS Curriculum support.

Working with our DoD Collaborator AMRDEC at Redstone Arsenal, we have developed the K-12 CS STEM program, which trains K-12 teachers in the teaching of CS, delivering course content in Partner Schools, delivered Hands On Learning Lab Activities (HOLLAs) to thousands of K-12 students on field trips to Shelby Hall, and provided speakers to our Partner Schools from both our faculty and industry partners. SoC Faculty train teachers, mentors, and students in programming languages used in educational robotics. The SoC has educated Partner School Teachers as well as delivered programming course content to bring the teaching of Computer Science into our Partner Schools.





Advancing Math and Science curriculum in K-12 through teaching Computer Science

I. Math through Computing Curriculum

- APTPlus **http://www.aptv.org/** offers rich educational content for use at home and in school. Its multiple databases of award-winning media assets are designed to enhance the learning process. Includes online professional development and training opportunities for educators, resources for parents, tools for teachers, and pportunities for lifelong learning.

- Department of Defense **https://www.youtube.com/user/labtvonline** offers webisodes that show viewers the leading edge research performed by scientists at the Department of Defense.

CURRENT CFITS/SoC Activities

Broader Impact

Jubilee Best Robotics in SW Alabama

- SoC Faculty Support for Fall BEST Robotics Program
- SoC Facility Support
- SoC Provided Workshops for Teacher Training in C-Robot SW Language
- SoC Faculty, Staffing, Facility, and Financial Support New Spring Program

NCWIT Across Alabama High Schools

- Targeting Broad Participation, Particular Focus on Minority Populations
- SoC NCWIT Affiliate (first of three) for Alabama
- CFITS CS STEM K-12 Outreach to all High Schools in Alabama
- SoC Sponsorship of NCWIT Events

U.S. CYBERSECURITY

In March of 2016, the White House released its Cyberspace Policy Review spelling out the nation's reliance on cyber technologies in our critical infrastructures and the vulnerabilities we face. The Formal Cybersecurity Education component spells out the need for formal academic programs. The Department of Education along with the National Science Foundation lead this component and have put focus on development of cybersecurity researchers and a cybersecurity professional capable workforce. This focus includes computer science, information assurance, information technology and information security fields related to cybersecurity issues to protect our Nation’s economy and the security of our critical infrastructure.

Career opportunities exist with the Department of Defense, both Military and Non-Military employment. Some of the government stakeholders include:

ARMY
- Army
- AMRDEC

Army Corps of Engineers
- Vicksburg ERDC ITL
- Mobile Regional Office

Air Force
- Keesler AFB Cyber School
- AFRL

FBI
- National
- State
- Local

CURRENT CFITS/SoC Activities

Cyber Assurance Education Outreach for DoD

CFITS provides Cyber Educational content delivery for its DoD partners in support of Cyber Warfare training. We are honored to have an EPA (Educational Partnership Agreement) with the AMRDEC and AFRL.

Information Assurance and Cyber Safety Education for K-12

Funded by a grant from the National Science Foundation, the SoC developed and delivers Cyber Safety content at grade level as part of our CFITS SoC K-12 CS STEM Outreach Program.

CS STEM Learning Objects for K-12

SoC Faculty have leveraged, developed, found and or provided thousands of K-12 appropriate learning objects as part of the CFITS K-12 CS STEM Outreach Program.

These have been developed into:

Field Trips or "Hands on Learning Lab Activities", or HOLLA

38 different versions of CS STEM related grade appropriate field trips have been developed and delivered to over 3000 K-12 students in academic year 2016-2017 alone as part of our Partner School Program.

Workshops

A variety ranging from Robot-C to Capstone Project Submission workshops have been developed and delivered to K-12 students and teachers, and Industry Partners.

Videos Identified for APTPlus

CFITS investigators, staff and SoC Faculty have identified CS STEM Learning Objects appropriate for use in K-12. These are provided free of charge to our Partner schools, and to all schools in Alabama via the APTPlus service of the Alabama Public Television Commission, whose staff provided meta-data for the CFITS identified learning objects for provisioning via APTPlus. Sources for the learning objects identified included NASA, Cassiopeia Project, NDEP's LabTV, and Khan Academy. This is significant not only for the compilation, but access by K-12 schools, many of which block other sources.

Classroom Visits

The SoC Faculty visits high school classrooms to make presentations on computing history, digital forensics, and career opportunities.

Targeted Partner School Program

Developed with input from over a dozen K-12 Schools, the Partner School Program was implemented at eleven schools that committed to the program.

Some aspects of the program include:

- Whole Grade Interventions with CS STEM Learning Objects
- Teacher Training

II. **The USA Mesonet**

An important synthesizing situation is the location of a National Weather Service (NWS) tower on the University of South Alabama campus. This tower is a component of the University of South Alabama Mesonet, which is a network of 26 weather stations that spans thirteen Gulf Coast counties across 3 states. The USA Mesonet is nationally recognized as evidenced by its Center for Hurricane Intensity and Landfall Investigation (CHILI, **http://chiliweb.southalabama.edu/**) that is led by USA faculty member Dr. Sytske K. Kimball. The program web page boasts substantial opportunity for K-12 education interactions, specifically, "...our data offer a wealth of opportunity for teaching a wide variety of topics at the K-12 and university levels."

III. **Connecting with Jubilee B.E.S.T. Robotics**

Boosting **E**ngineering, **S**cience and **T**echnology

SoC has a mature, ongoing, successful robotics research program and has a historic relationship with B.E.S.T. and Jubilee B.E.S.T.

IV. **Partner Activities**



The CFITS Partner School Program provides a variety of activities. These activities are all designed to increase STEM learning with:

- Computing Camps
- Field Trips
- SoC Faculty K-12 Outreach learning products
- Industry Partner Presentations
  A representative presents their business, their industry, and why CS, IS, and IT are important to them. These presentations can happen in a Partner School classroom, during a field trip to Shelby Hall, during a summer camp at Shelby Hall, or as a featured speaker in the CFITS monthly Information Assurance Forum.
- Industry Professional Presentations
  A degreed computing professional presents his job, career, and the great opportunity computing is to a Partner classroom, or to a field trip or summer camp at Shelby Hall.
- Volunteer opportunities
- Industry Partner Tours
  Partner school classes can schedule a tour of an Industry Partner business to see the facility and to learn, up close, what a CS, IS, or IT working environment is about.
- Speaker's Forum

"Our Partner Schools are requesting speakers to come into their classrooms and speak about the computing/technology business and opportunities available in today's workforce. More specifically, the teachers are eager to share with their students an awareness of the kinds of local businesses Mobile is home to and what each business does."

CFITS "Director's Notes" newsletter
Les Barnett, CFITS Director

LEARNING OBJECTS

ADVANCING STEM CURRICULUM UNIVERSALLY AS PART OF THIS PARTNERSHIP

Learning Objects Resources

National Defense Education Program offers webisodes each week that demonstrate the amazing research that is every day work at the Department of Defense Labs.
http://www.ndep.us/LabTV

Kahn Academy is a non-profit educational web site with a library of over 4500 videos covering K-12 math, science topics such as biology, chemistry, and physics, and many other disciplines.
http://khanacademy.org

Real World Learning Objects—search this site for materials by category:

Science (computer science), mathematics, language arts **http://www.ciese.org/pathways/rwlo**

Wisc-Online is a digital library of Web-based learning resources called "learning objects." Anyone may access these learning objects which are available for use at no cost by teachers and students worldwide. (The learning objects listed under General Education are sorted by topic)
http://wisc-online.com

Code.org
https://code.org/

CURRENT CFITS/SoC Activities

Partner School Field Trips "Hands on Learning Lab Activities"
Partner Schools agree to participate in "whole grade" CS STEM learning interventions with CFITS and the USA SoC. These HOLLA's are provided at no charge to the Partner School, and deliver high quality CS STEM learning in our K-12 STEM Learning Lab in Shelby Hall. This well equipped modern facility has a state of the art laptop for each student, a larger screen controlled by the SoC faculty delivering the content at the table to each group of five students, plus one 60" screen at each end of the lab. Industry Partners/Professionals assist the SoC faculty and Partner School Teachers and staff with the instruction.

CFITS Computing Camps
SoC faculty have developed learning modules for our Partner School middle school students wishing to extend their CS STEM learning experience here at the SoC in Shelby Hall. These campers are the responsibility of the Partner School, chaperoned by them, and delivered by SoC faculty at Shelby Hall.

Partner School Summer Camps
Our Partner Schools hold their own summer camps each year, and as interest has grown in the science of computing, they have requested that SoC faculty present classes on their campuses. A couple examples include "Digital Forensics" and "Android Apps."

GenCyber
Inspiring the Next Generation of Cyber Stars! The GenCyber program provides summer cybersecurity camp experiences for students and teachers at the K-12 level. The goals of the program are to help all students understand correct and safe on-line behavior, increase diversity and interest in cybersecurity and cybersecurity careers, and improve teaching methods for delivering cybersecurity content in K-12 computer science curricula. Funding is provided jointly by the National Security Agency and the National Science Foundation.

Jubilee BEST Robotics in SW Alabama
Since 2012, the BEST Robotics STEM learning program began student control of the competition robots by software written by the student participants instead of radio control. This changed the focus of the program from mechanical engineering to SW and mechanical engineering, reflecting the changing job market. SoC Faculty K-12 outreach supports the regional Jubilee BEST Robotics program, serving hundreds of STEM interested middle and high school competitors.