

THE COETCS CONNECTION

Tennessee State University, AY 2010-2011

Message from the Dean



Table of Contents

Feature Article	2
In the Community	3
Global Engineer	4
News	5
Student Activities	7
Other News	8
Summer Programs	10
Highlights	11

Tennessee State
University
College of Engineering,
Technology and Computer
Science

Torrence Hall
3500 John Merritt Blvd
Nashville, TN 37209

For info: 615-963-5401
<http://www.tnstate.edu/interior.asp?ptid=1&mid=284>

Welcome to the College of Engineering, Technology & Computer Science (CoETCS) at Tennessee State University (TSU), and our 2nd Annual Issue of CoETCS Connections. The objective of this publication is to inform students, faculty, the campus community, and our external constituents of the activities and achievements of the college. We believe that by keeping you informed and connected with our programs will stimulate your engagement and participation in these and future activities within the College of Engineering, Technology & Computer Science.

We are challenged and committed to providing the highest quality industry-driven curricula in engineering, technology, and computer science. . . to meet the growing demand for STEM (science, technology, engineering, and math) professionals in industry, government, and entrepreneurship. The College currently provides BS degrees in Architectural, Civil, Electrical, and Mechanical Engineering, with several concentrations such as manufacturing, environmental, facilities, and computer engineering. The College also awards degrees in Aeronautical & Industrial Technology, Computer Science, Master of Engineering, and MS and PhD in Computer and Information Systems Engineering. Hence, the recent reorganization of the college results in a new college with the addition of the Department of Physics & Mathematics. This will lead to a new college name before the end of the fall 2012 semester, and we welcome this great addition to promote STEM education at TSU.

Recognizing the need for developing graduates with an appreciation for global awareness, solid engineering fundamentals, and professionalism . . . we are striving to develop and promote an educational experience that produces the "global engineer" through life or language learning, a FE-based (Fundamentals of Engineering) curriculum for outcome assessment, and critical skills in research, design, problem solving, and communication. A dedicated faculty and staff seek to integrate innovative approaches to instruction, laboratory experience, and internships to address the contemporary challenges of the profession, and engage the community through service and outreach.

Our programs complement the student learning experience with aggressive research initiatives in areas such as intelligent sensors, robotics, manufacturing, environmental issues, data fusion, and signal/image processing. The year has been highlighted by research grants exceeding \$3 million, creation of the TIGER Institute, student activities and study abroad experiences, increased enrollment, community outreach, and faculty engagement and productivity.

As Dean of the College of Engineering, Technology & Computer Science, I look forward to continuously developing and implementing strategic initiatives to expand ACCESS for incoming students via preparation and recruitment, providing support to make it more AFFORDABLE to pursue our degrees, and minimizing the ATTRITION of our students while supporting the roadmap of the TSU Strategic and Academic Master Plan.

This issue of CoETCS Connections gives you some insight of the past and current activities for Academic Year 2010-2011. As a potential student, I encourage you to inquire about our academic programs for enrollment, contact our undergraduate programs coordinator, and visit our institution to learn more about our historical and nurturing environment for student success. As a potential partner and collaborator, I invite you to contact our research faculty, department heads, or myself to initiate projects that benefit our mutual interests and goals. And as one of our outstanding alumni, I challenge you to connect or reconnect with the college by joining the TSU Engineering Alumni Association, and playing a significant role to grow our programs and implement our initiatives.

TSU symbolizes a tradition of "transforming students unequivocally", with a mission to prepare students for careers and occupations with relentless dedication of its faculty, staff, and administration. I invite you to become part of this experience within our college . . . at TSU. . . This Special University. I hope the content of the newsletter demonstrates our tradition.



Feature Article

Tennessee State University

Page 2

2ND ANNUAL AWARDS AND RECOGNITIONS BANQUET

The College of Engineering, Technology and Computer Science held its 2nd Annual Awards and Recognitions Banquet on Friday, April 29, 2011 in the Jane Elliott Hall banquet room on the campus of Tennessee State University. The awards banquet was hosted by Dr. S. Keith Hargrove, Dean of CoETCS. Miss Latasha Cox, a May 2011 graduate in Electrical Engineering, and Mr. Robert Jobe, a CoETCS alum, served as the masters of ceremony for the evening. The theme for the banquet was "Motivating and Celebrating Tomorrow's Leaders...Today!", and was attended by close to 200 students, faculty, alumni, and family and friends of the honorees.

Mrs. L'Tanya Q. Cole, was the keynote speaker for the banquet. Mrs. Cole earned her degree in Civil Engineering from Tennessee State University and now serves as Director, Global Oral Care, Pet Care and Snacks Engineering for Procter & Gamble. During her address, Mrs. Cole stressed to students the importance of having strong mentors and encouraged them to remain disciplined. She also emphasized life-long learning and the impact it can have in one's development. In addition, Dr. Portia Holmes Shields, interim TSU president, addressed banquet attendees and praised students, faculty, staff and alumni for their great work and support of Tennessee State University.

The awards banquet is held annually to honor the accomplishments of stellar CoETCS students, faculty, and alumni, and to show appreciation to our many industry supporters. This year's honorees were:

Gregory Kimbrough Student Service Award - LORE'AL SPEAR, Civil Engineering
 Most Outstanding Student Award - LATASHA COX, Electrical Engineering
 Most Outstanding Graduate Student Award - MAGED MIKHAIL, CISE
 Ida McClain Fortitude Faculty Award - DR. SACHIN SHETTY, Electrical Engineering
 Most Outstanding Faculty Award - DR. AMIR SHIRKHODAIE, Mechanical Engineering
 Most Outstanding Faculty Award - DR. SALEH ZEIN-SABATTO, Electrical Engineering
 Think, Work, Serve Award - MS. GEORGIA (GIGI) DUMAS WHITING, CoETCS alum
 Infinite Value Alumni Award - MR. GEORGE L. DAVIS, JR. CoETCS alum
 Corporate Award - THE BOEING COMPANY
 Special Recognition - GENERAL MOTORS
 Departmental Outstanding Student Awards - LATASHA COX (EE), LORE'AL SPEAR (CE),
 JAMAL HENDERSON (AE), DWIGHT NELSON, JR. (CS), KABRINA WEBB (AIT), SAMBA FALL (ME)



In the Community

Tennessee State University

Page 3

COLLEGE OF ENGINEERING ADOPTS NEW STEM-BASED CHARTER SCHOOL TO OPEN FALL 2011

The College of Engineering, Technology & Computer Science participated in the Inaugural Community Celebration and Admissions Ceremony of STEM (Science, Technology, Engineering and Mathematics) Preparatory Academy last week, Middle Tennessee's first STEM charter school.



The event drew more than 400 new students, parents, community activists, and elected officials to the event held at the Adventure Science Center, the partnering institution. More than 10 engineering students participated in the event as hosts and chaperones, and will be actively engaged with the middle school through tutoring, projects, and community service starting this fall.

STEM Prep Academy is Middle Tennessee's first public charter STEM school committed to delivering a college preparatory education for grades five through eight with an integrated curricular focus on science, technology, engineering, and mathematics. Its integrated curriculum that infuses STEM learning and real-world applications in both the STEM fields and entrepreneurship is unprecedented, says Dr. Kristen McGraner, the founder and Executive Director.

Dr. S. Keith Hargrove, dean of the College of Engineering, Technology & Computer Science at TSU, is equally excited about the school and its potential. "I believe the solution to increasing the pipeline of STEM professionals for tomorrow's workforce...begins with improving K12 with how we teach, what we teach, and the engagement of higher education."

Hargrove serves as a board member for STEM Prep Academy, and is committed to supporting the academic achievement and success of the new innovative school. Students from the College of Engineering will volunteer and work with the school in tutoring and specials projects. STEM Prep Academy and the College of Engineering have also collaborated on several proposals to prepare teachers and for curriculum development.

The school will open its doors in South Nashville in July 2011 to 100 fifth grade students, growing a grade each year, and serving 400 students in grades five through eight by 2014. STEM Prep Academy is a free, public charter school serving students who are zoned to persistently low-performing schools and is part of the growing charter school movement supported locally and state-wide.

Preparing the Global Engineer

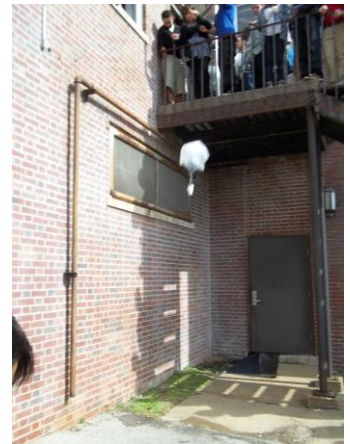
Tennessee State University

Page 4

CoETCS Celebrates NATIONAL ENGINEERS WEEK 2011

This year marked the 60th anniversary of National Engineers Week across the United States. The College of Engineering, Technology and Computer Science commemorated this milestone with a week of events and activities geared toward promoting interest in studies and careers in science, technology, engineering and mathematics (STEM). During the week, CoETCS departments and student organizations sponsored and hosted events such as open houses, guest speakers from industry, a resume and interview workshop, computer programming competition, a community service event and a 3-on-3 basketball tournament.

The feature event of the week was the Engineering Expo 2011. The event attracted close to 100 area high school students from McGavock High School, Overton High School and Glencliff High School. The theme for this year's event was "Engineers: Turning Ideas into Reality," and featured an "Engineering Olympics" event where students will have the opportunity to compete in various engineering design and problem solving events utilizing their creativity and enthusiasm. In addition, students were able to meet current students and faculty, obtain information about admissions and scholarships and find out about summer and bridge programs offered by the CoETCS. Awards were presented to winners in individual events and McGavock High School took home overall honors as "Engineering Olympics Champion". Dr. Tamara Rogers (Computer Science) and Mr. Kevin Williams (Engineering Student Services) led the planning efforts for the week of activities. The CoETCS plans to make the Engineering Expo an annual event and hopes to attract even more students in coming years.



CoETCS teams with the TSU Athletic Department for Kid's Day 2011

On October 23, 2010 during the TSU football Kids' Day festivities, the CoETCS hosted an 'open house' for middle, high school students and parents. Students from Franklin County High School, Tullahoma High School, East Middle School, Shelbyville Central High School and youth groups from Scott United Methodist, Bright Temple Church of God in Christ and Who So Ever Will Pentecostal Shelbyville churches attended the event.

Approximately 230 students and chaperones were given an overview of our engineering program by Dr. S. Keith Hargrove, dean of our College. All students and chaperones attending the event were given the 'new' CoETCS 'Believe in Blue' engineering t-shirts. Tours of the CoETCS facilities were given by current CoETCS scholarship students. From 2-5 p.m. our invited guests were invited to 'tailgate' at LP field. Mr. Kevin Williams and his scholarship student staff cooked and served approximately 400 hot dogs, chips, and bottled water. Mr. Austin, a CoETCS alumnus donated approximately three cases of cookies and other Kraft goodies for the event.

Ms. Fredia Lusk, Outreach Coordinator for CoETCS and lead coordinator of the event, stated that plans are being made to make this an annual event for the Kids' Day football game. Because of the support of Mrs. Teresa Phillips, TSU Athletic director and Dr. Keith Hargrove, the program was a success.



News

Tennessee State University

Page 5



*Dr. S. Keith Hargrove,
Dean of the College of
Engineering, Technology &
Computer Science at TSU,
encourages all students to
become engaged in research.*

TSU Engineering Students participate in Idea Competition Sponsored by Johnson Controls

Engineering is recognized as a profession to develop products that will improve our way of life. It is actually defined as such, and therefore the educational curricula should reflect this noble philosophy. Dr. S. Keith Hargrove, Dean of the College of Engineering, Technology & Computer Science at TSU, is a strong advocate for practical learning to complement the classroom experience, and encourages all students to become engaged in research. To promote more practical learning and grasp the ingenuity of the engineering students, Dr. Hargrove facilitated the FOCUSS (Framework for Opportunity Convergence and the Utilization of Sustainable Solutions) IDEA Competition that was sponsored by Johnson Controls, Inc. The mission of FOCUSS is to assist American minority individuals (e.g. entrepreneurs, academicians, existing companies) to discover sustainable solutions that will benefit society. Created to stimulate constructive thought surrounding concepts of innovation and discovery, the FOCUSS Idea Competition provides students a unique opportunity to share and cultivate creative solutions to a sponsoring corporation. The competition was open to students in the College of Engineering, Technology & Computer Science, to identify a problem in the area of "building efficiency", and propose an idea that resolves that problem and enhances sustainability. Dr. Floyd Rose, President of FOCUS, provided strict guidelines and criteria for a group of students, and each team was required to submit a detailed proposal through an on-line portal for review. Three teams submitted proposals, and recently presented their ideas to Dr. Rose during a recent visit to TSU. The winners for the competition were:

- 1st Place: Rodger Waynick
- 2nd Place: Chantal Jones and John Drew
- 3rd Place: Jonathan Miller

The first place winner will participate in the National FOCUSS Idea Competition to be held in April 2011 in Milwaukee, Wisconsin, headquarters for Johnson Controls, Inc.

Engineering students attend NSBE National Conference, St. Louis, MO.

The College of Engineering, Technology & Computer Science (CoETCS) sponsored the attendance of 11 students to participate in the 37th Annual Convention of the National Society of Black Engineering (NSBE) held March 23-27, 2011 in St. Louis, Missouri.



From L-R: Sean McMillan, Thomas Holman, Christopher Berry, Avian Hughes, Kamisha White, Christin Staples, Nate Goodman, Lore'al Spear, Aaron Williams, Jonathan Clark, Jamarvis Boykin



The Annual Convention is the premier event for the organization which encompasses members from around the world. This year's theme, "Engineering the Gateway to Success," not only symbolizes the rich history of St. Louis, but also embodies the purpose of the Annual Convention to provide attendees with the motivation, skills, and opportunity to succeed. Also attending was Dr. S. Keith Hargrove, dean of the CoETCS, and Mr. Kevin Williams, Director of Engineering Student Services. Dr. Hargrove served on a panel to discuss the need and opportunities to go to graduate school in STEM (science, technology, engineering, mathematics) disciplines, and also sponsored the students. The students participated in professional development seminars, workshops, and attended one of the largest career fairs for minority and technical professionals. Dr. David Padgett and several engineering students also conducted a workshop on Geographical Information Systems (GIS). The Annual NSBE Convention is one of the largest student-run events in the country. The convention hosts various programs and workshops that are designed to benefit K12 school, collegiate, graduate, technical professional and international entities of the Society. The Annual Convention showcased the NSBE culture, achievements of the membership, local and nationwide talent, and black-owned businesses in the St. Louis area. The goal of this convention was to provide members with a pipeline to continue to strive for success in one's academics, profession, and community.

News

Tennessee State University

Page 6

TSU Students present at the 31st Society of Environmental Toxicology & Chemistry (SETAC) conference in Portland, OR.

Four students from the College of Engineering presented their research findings at the 31st annual SETAC conference in Portland, OR, Nov 7-11, 2010. There were over 1500 attendees at the conference from all over the world. The TSU student participants included Victor Roland (Master's student), Jaala Brooks (Senior), Carlton Cobb (Senior), and Ashley West (Junior). They are all involved in sponsored environmental research at TSU. Sponsors include Dept of Energy, National Science Foundation, the National Park Service and the US Geological Survey.



Pictured L-R: Ashley West, Victor Roland, Carlton Cobb, Jaala Brooks

Robotics Club team earns Second Place in Robotics Competition Event

TSU's Robotics Club sent a team to the 3rd Annual ARTSI Student Research Conference and Robotics Competition at Florida A&M University. Teams participated in a Basic Skills Challenge and competed in two robotics competition events. The TSU team earned 2nd place in the Simulation Event.

The ARTSI Student Research Conference and Robotics Competition was held March 17-19 at Florida A&M University by the Advancing Robotics Technology for Societal Impact (ARTSI) Alliance, an NSF-sponsored alliance. There were 19 teams from 14 HBCU alliance members.

The Spelman College Computer Science Olympiad was also held at FAMU during this time and TSU's team participated.



Team Members L-R: Gary Moore, Jr., Raphaella Evans, Bethany Blackmon, Dr. Tamara Rogers (advisor), Dominic Alston, Dwight Nelson, Jr.

Aeronautical and Industrial Technology Department Earns Top Ratings during fall 2010 FAA Inspection

Dr. William Annesley, head of the Aeronautical and Industrial Technology Department, is pleased to announce that his program earned a renewal of the Air Agency Certificate from the Federal Aviation Administration (FAA) during their October 2010 inspection. The renewal ensures that the AIT department can continue to conduct Pilot Ground School training for TSU students interested in a career in flight. AIT's Aviation Flight program is one of a select few in the United States that is FAA certified to train pilots and instructor pilots. Dr. Annesley noted that the inspection was very lengthy and thorough, but that FAA inspectors had extremely positive feedback and lauded the great work of his entire AIT staff.

To receive certification, universities must complete a minimum number of Pilot Ground School graduates within a two-year period and achieve an 80 percent passing rate. AIT's student passing rate is 100 percent with an average passing grade of 90 percent! The current certification is good through November 2012.



Mr. John McBryan, AIT professor, conducts a demonstration of one of the department's state-of-the-art flight simulators

Student Activities

Tennessee State University

Page 7

TSU converges on the nation's capital for BEYA 2011

Close to fifty CoETCS students participated in the 2011 Black Engineer of the Year Awards (BEYA) STEM conference, February 17 – 20 in Washington, D.C. The BEYA Conference is a weekend-long series of events geared toward professional, academic and career development of students majoring in STEM disciplines. It serves as an opportunity for them to meet and network with STEM professionals and other STEM students from across the country. The conference is sponsored by the Distinguished Institute for Emerging Leaders (DIEL), a comprehensive student leadership and professional development program designed to give students a competitive edge when they enter today's global workforce. Highlights of the BEYA included the annual College/Career Fair, an awards dinner to recognize outstanding student leaders, and the BEYA Awards Gala showcasing today's top STEM professionals in industry.



2011 Women of Color Conference – Dallas, TX

A cohort from the TSU College of Engineering, Technology and Computer Science attended the 2010 Women of Color Science, Technology, Engineering and Math (STEM) Conference. The annual event was held in Dallas, TX this year. The conference is a place to celebrate the accomplishments of women in STEM. It is also an opportunity to meet and discuss issues related to women in technology, such as professional development and increasing the participation. Participants from government, industry, research, and academia were present to "recognize the significant accomplishments of minority women in the digital world".

TSU students had the opportunity to attend seminars in either student-focused tracks or alongside the professional women in professional development tracks. Sessions on resume preparation and a career fair were highlights of the weekend. There were also awards events and a gala to celebrate the accomplishments of students and professional women in STEM. As senior Kiara McCummings summed it up, "this conference definitely gave us tools to use to make sure that we are on our job as we make the move into the workforce."



CoETCS/Career Development Center sponsors student visit to Louisville Gas & Electric

Dr. Bill Gittens, Director, TSU Career Development Center, continues to work diligently in developing partnerships with leading companies that will spark myriad internship and career opportunities for students in the College of Engineering, Technology and Computer Science. In November, Louisville Gas and Electric Company hosted CoETCS students and staff for a tour of their facilities and a meet and greet with their current engineers and top executives. LG&E and KU Energy, headquartered in Louisville, Ky., is a diversified energy services company. The company owns and operates Louisville Gas and Electric Company, a regulated utility that serves 321,000 natural gas and 397,000 electric customers in Louisville and 16 surrounding counties, and Kentucky Utilities Company, a regulated electric utility in Lexington, Ky., that serves 546,000 customers in 77 Kentucky counties and five counties in Virginia.



Other News

Tennessee State University

Page 8

Dean Hargrove inducted into “Million Dollar Club”

Congratulations are also in order for the Dean of the CoETCS, Dr. S. Keith Hargrove on being inducted into the Million Dollar Club for his work in acquiring over \$1 million dollars in research funding each from the National Science Foundation and the United States Navy. Dr. Hargrove was honored along with six fellow inductees at the recent TSU Research Symposium held in March. University wide, 28 faculty members belong to this group and 25% of them reside in the College of Engineering, Technology, and Computer Science.

Computer Science Department hosts 2011 JAVA Boot Camp for HBCU students

The fourth TSU-TTP Java Boot Camp was held at Tennessee State University in May 2011. Eighteen students and one professor from five HBCU institutions - FAMU, Hampton, NCA&T, Tuskegee, and TSU - participated in the 2011 Boot Camp.

Given the extremely high demand and high levels of competition for outstanding talent, certifications are another opportunity for students to demonstrate their abilities and to distinguish themselves from others in this competitive market. The Boot Camp had **5 hours of lectures** for seven straight days including Saturday and Sunday from 8am to 1pm. The participants then attended another **5 hours of laboratory** sessions every day from 2pm to 7pm. The participants took “Oracle Certified Professional for Java SE 5” exam, which is administrated by Prometric Services. Fifteen of the participants passed the exam in their first attempt (79% passing rate).

The Department of Computer Science at Tennessee State University has taught the Java Boot Camp annually since 2002. The traditional TSU Java Boot Camps were extended for the other HBCU students in collaboration with the Technology Transfer Project (TTP) in 2008. Our certified students are highly demanded by the IT Industry including IBM and Oracle. Over 50 students from the Department of Computer Science and the College of Engineering, Technology, and Computer Science were hired by **IBM** as full-time, co-op, or intern within 7 years period.

Vol State and TSU Award Science Research Scholarships

Kerry Siegrist of Lebanon is the first Volunteer State Community College Student to receive a new Tennessee State University scholarship, as part of a unique research program designed to produce more graduates in the areas of Science, Technology, Engineering and Mathematics. Seigrist is a graduate in engineering at Vol State. He receives a \$5000 scholarship to TSU, continuing work in research that he started as a Vol State student. The program, funded by a Tennessee Board of Regents Access and Diversity grant, is open to Vol State Math and Science students in coming years.



Dean Hargrove (far right), pictured with fellow “Million Dollar Club” inductees for 2011



2011 JAVA Boot Camp participants along with Dr. Ali Sekmen (Second Row, Second from left) who was the boot camp coordinator



Pictured left to right: Dr. S. Keith Hargrove, Dean of the College of Engineering, Technology and Computer Science at TSU; Nancy Morris, Dean of Math and Science at Vol State; Kerry Siegrist, student; and Kevin Woods, engineering instructor.

Other News

Tennessee State University

Page 9

Architectural Engineering Student Interns in Korea

Keaton Browder, Senior Architectural Engineering student, spent the summer 2011 in Korea as an AMIE (Advancing Minorities in Engineering) Intern. AMIE "is a non-profit organization whose purpose is to expand corporate, government, and academic facilities to implement and support programs to attract, educate, and place underrepresented minority students in engineering careers." Mr. Browder worked with the United States Army Corps of Engineers in the Republic of Korea, and was working with the Construction Division on land development and landfill. This involved one of the largest base relocation programs in the Department of Defense. His intern was sponsored by AMIE, and the College of Engineering, Technology & Computer Science.



Conducting surveillance with a qualitative assurance representative on one of the family housing tower.

CoETCS Alum Accepts Major Promotion at Fujitsu America

The College of Engineering, Technology and Computer Science recently received great news about one of our esteemed alums that is making a tremendous impact in industry.

"Tennessee State University Alum and Electrical Engineering graduate Jeff Buchanan was recently named Director of Enterprise Sales at Fujitsu America, and will manage business development operations across the Southeast United States. Jeff will oversee strategic sales and market share growth of enterprise platform solutions, including datacenter technologies, server, storage, virtualization and cloud solutions for the fast-growing \$100+ million business in the Southeast.

Over the past 11 years, Mr. Buchanan has had global responsibility for large enterprise strategic accounts. In his new role, he will be managing a sales team responsible for enterprise information technology based business solutions.

"I'm very excited about being a part of Fujitsu's success and continued global expansion," says Jeff, a highly successful, top-contributor to the Fujitsu America organization for more the last decade.

"This role gives me the opportunity to build and lead a team that will delivery long-term value to our customers and to provide leading-edge technology solutions that align with their business objectives."

Fujitsu is a leading provider of ICT-based business solutions for the global marketplace, with \$50B in annual revenues and 170,000 employees in 70 countries. They have the highest growth among the top five vendors in the global server market, according to the independent market research firm Gartner."



Mr. Jeff Buchanan, CoETCS Alum

SUMMER PROGRAMS 2011

Tennessee State University

Page 10

Over sixty high school students became honorary members of the Big Blue family this past summer as they participated in various programs hosted by the College of Engineering, Technology and Computer Science to promote education and careers in science, technology, engineering and mathematics (STEM).

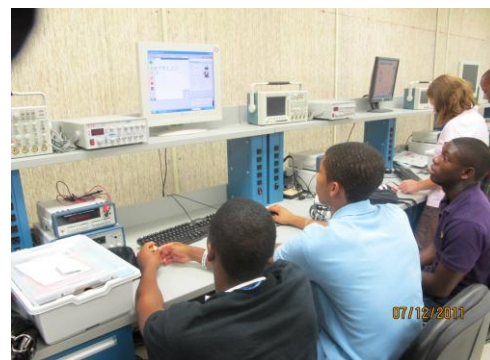
Eighteen incoming freshmen from six different states participated in the Engineering Concepts Institute (ECI) summer engineering program to prep themselves for the rigorous curriculums they will endure as CoETCS students. The program was in collaboration with the HBCU-UP Program and students gained valuable instruction in Pre-Calculus, Calculus, Physics, Computer Science, Intro to Engineering and critical thinking. The students also completed the first phase of a service-learning endeavor, a product redesign project with the TN Association for Blind Athletes. Other highlights of the program included visits from industry leaders, a tour of the Marathon Petroleum Company Asphalt Terminal and a visit to the NASA Space and Rocket Center and Museum.

At this year's National Summer Transportation Institute (NSTI), the Tennessee State University College of Engineering, Technology and Computer Science gave youth, grades 10 through 12, an inside look at how the transportation industry makes our everyday world function. The four-week residential program introduced 17 students to safety, water, land and air transportation systems. The goal of the institute was to spark an interest in engineering and technology professions and facilitate exposure to related careers among minority and female students through various activities.

From highway design and aircraft performance to marine cargo handling and vehicle safety, the NSTI participants became first-hand witnesses to problem solving techniques created by engineers through transportation laboratory experiences and field trips to the Metropolitan Nashville Airport, Marshall Space and Rocket Center, Old Hickory Power Plant, Music City Star Headquarters, and Tennessee Department of Transportation Smartway Management Center.

The CoETCS wrapped up a very productive summer with its two-week non-residential Pre-Engineering Program to Stimulate Interest in Engineering (P.E.P.S.I.E). Twenty one students participated in this year's program that introduced them to various fields of engineering, robotics, computer science and critical thinking. Students participated in several competitive team building competitions that enlightened them to engineering design, while creating a positive and competitive experience. The students were treated to a tour of the Nissan Automotive manufacturing plant in Smyrna, Tennessee and an end-of-program trip to the Marshall Space Flight Center in Huntsville, Alabama.

For more information on our summer 2012 programs, please visit our pre-college programs website at <http://www.tnstate.edu/engineering/precollege.aspx>, or call 615-963-5879.



Highlights

College of Engineering, Technology & Computer Science AY 2010-11 Achievements

- The College of Engineering, Technology & Computer Science has produced more than **50** publications in journals or conference proceedings within the last academic year;
- The college has been approved by the Tennessee Board of Regents to begin construction this month for the TIGER (TSU Interdisciplinary Graduate Engineering Research) Institute in collaboration with Research & Sponsored Programs. The TIGER Institute will have six state of the art laboratories with four research themes: Cyber-security, Nano-materials, Advanced Visualization & Computing, and Renewable Energy Systems. The college encourages and welcomes more interdisciplinary research and collaborative projects across all disciplines at TSU. This was the result of Dr. Maria Thompson, former VP of RSP.
- The college has acquired almost \$3 Million in grants this year from industry and:
 - Tennessee Board of Regents – partnership with community colleges
 - National Science Foundation – research in cyber-security and bioinformatics
 - Department of Homeland Security – research in cyber-security
 - Air Force Research Laboratory – signal processing and distributed controls
 - Tennessee Department of Transportation – cable rail systems and traffic safety
- **Recognized Drs. Sachin Shetty, Tamara Rogers, Ali Sekmen, M. Saleh Zein-Sabotto, Deo Chimba, Mohan Malkani, and Dean Hargrove**
- Collaborating with Mammoth Cave National Park in a research project on resource management (Dr. Tom Byl);
- Research with Department of Energy and Y12 Oak Ridge site on Liquid Waste Treatment in Streams (Drs. Lonnie Sharpe, Tom Byl, and Roger Painter);
- Acknowledged Dr. Matt Mutherspaugh received NSF Grant (\$800K) to support his research with telescopes;
- The college continues to strengthen its partnership with the Center for Academic Excellence in Intelligence Studies in training engineers for careers with the government and a study abroad experience coordinated by Mr. Mark Brinkley; 5 students went to China in May 2011;
- Conducted three (3) successful summer programs to promote STEM careers and TSU funded by grants and alumni:
 - Engineering Concepts Institute – Boot camp for entering engineering students;
 - TDOT Summer Transportation Institute – learn about careers in transportation;
 - PEPSIE – (Pre-Engineering Program to Stimulate Interests in Engineering) – introduce engineering discipline to early high school students;
- We also want to recognize and welcome the Department of Physics & Mathematics for the NEW college, and the leadership of Dr. Sandra Scheick;
- Increased enrollment by almost 6% for Fall 2010; Expect almost 10% for Fall 2011;
- Congratulate Dean S. Keith Hargrove for receiving a national Engineering Excellence Award for his work in promoting graduate study in STEM.

CoETCS racks up accolades at University-Wide Research Symposium

Twenty two graduate students from CoETCS participated in the 33rd Annual Tennessee State University-Wide Research Symposium, March 14-18, 2011. This was one of the largest numbers of our graduate student's participation in this research symposium, and the awards were presented to the top three winners in oral and poster presentations categories, and they are:

Graduate Oral Presentation

Engineering I

Meena Thanu
Issac Lyatuu and Michael Knap
Michael Knap

Engineering II

McKenzie McNeal
Jerry Swafford
Kevin Tyrell

Award

First Place
Second Place
Third Place

Graduate Poster Presentation

Omari Boyd
Jonathan Reynolds and Adriane Parker
Abdalla Alsalah

First Place
Second Place
Third Place

Transforming Students Unequivocally

Tennessee State University

Page 12



Our Partners Alumni

TSU Engineering Alumni Association
www.tsuengrualumni.org

Academic

California Institute of Technology
 Georgia Tech Research Institute
 Mississippi State University
 Pennsylvania State University
 University of Michigan
 Regional Community Colleges

Government

Air Force Research Lab
 Army Research Office (ARO)
 NASA Glen Research Center
 National Science Foundation
 Naval Sea Systems Command (NAVSEA)
 Oak Ridge National Laboratory
 Office of Naval Research
 Tennessee Department of Transportation
 Tyndall Air Force Base
 U.S. Army Corps of Engineers
 United States Department of Defense
 Wright Patterson Air Force Base

Industry

Alabama Power
 Boeing
 BRC (British Retail Consortium) Chrysler
 FedEx
 General Motors
 Georgia Transmission
 Gresman Smith and Partners
 Harris
 IBM
 Lockheed Martin
 Marathon Oil
 Mercedes-Benz
 Northrop Grumman
 Procter & Gamble
 Raytheon
 Rolls Royce
 Southern Company
 Volkswagon

Engineering Research Institute

Engineering Research Institute - conducts research through partnerships with industry and government led by faculty and student participation. Listed below are current projects and initiatives:

- ▶ Bio-remediation and natural attenuation, constructed wetlands, toxicology;
- ▶ Human-robot interaction, social robotics, artificial intelligence, fuzzy logic;
- ▶ Intelligent manufacturing, machine vision, predictive maintenance, hardware design VLSI;
- ▶ Nano-materials, Virtual & Augmented Reality, health informatics;
- ▶ Natural language processing, image & signal processing, pattern recognition, neural networks;
- ▶ Sensor networking, data fusion, algorithms, and advanced computing;
- ▶ Wireless communication, cyber-security, distributed computing, software engineering;

Pre-College Summer Programs

- ▶ Engineering Concepts Institute (ECI)
CoETCS admitted students
- ▶ Pre-Engineering Program to Stimulate Interest in Engineering (P. E. P. S. I.E.) Grades 10-12
- ▶ Summer Transportation Institute (STI), Grades 10-12

Student Programs and Organizations

CoETCS Engineering Student Services – provides student support via scholarships and retention initiatives

- ▶ American Society of Civil Engineers
- ▶ American Society of Mechanical Engineers
- ▶ Association for Computing Machinery
- ▶ Institute of Electrical & Electronic Engineers
- ▶ National Society of Black Engineers
- ▶ Society of Women Engineers