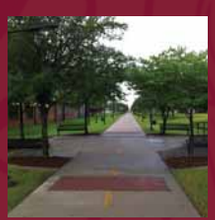
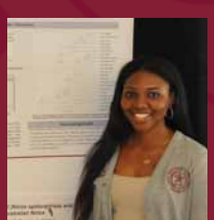
ANNUAL REPORT 14|15

COLLEGE OF SCIENCE, ENGINEERING AND TECHNOLOGY










ANNUAL REPORT 2014-2015

EDITORIAL DIRECTOR

Lei Yu

EDITOR IN CHIEF

Oscar H Criner

EDITORS

Desirée A Jackson

Shishir Shishodia

GRAPHIC DESIGNERS

Hector C Miranda

Shishir Shishodia

Daniel Vrinceanu

PHOTOGRAPHY

Hector C Miranda

Peter Olamigoke

Shishir Shishodia

CONTRIBUTORS

Tioka Freeman

Carlos Handy

Jesse Horner

Desirée A Jackson

Wei Wayne Li

David Olowokere

Evangeline Pearson

Jason A Rosenzweig

John B Sapp

A Serpil Saydam

Dolly Spencer

Yi Qi

Charlotte Whaley

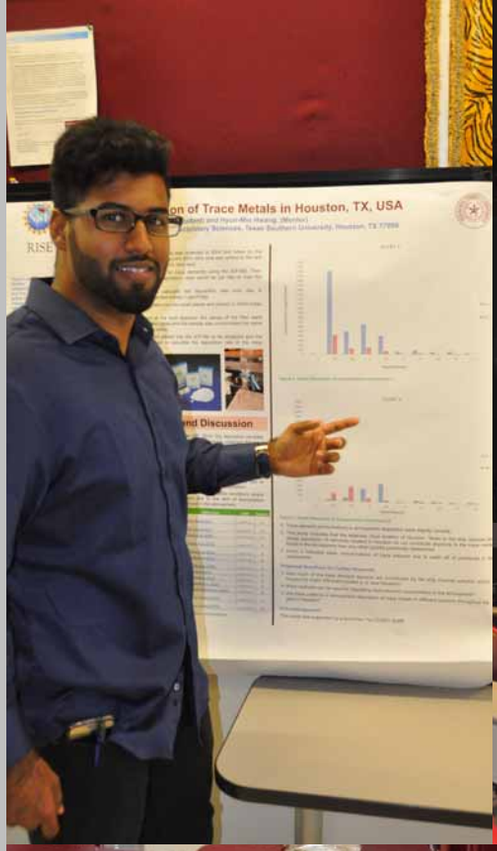
Warren Williams

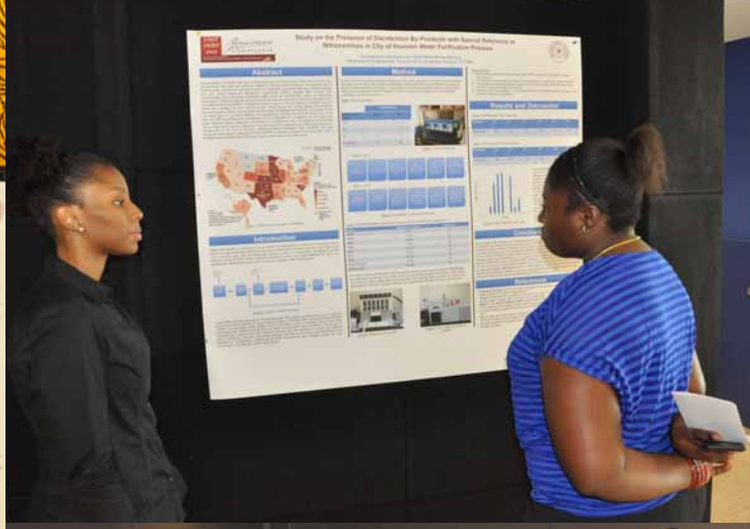
Send address and email updates to:

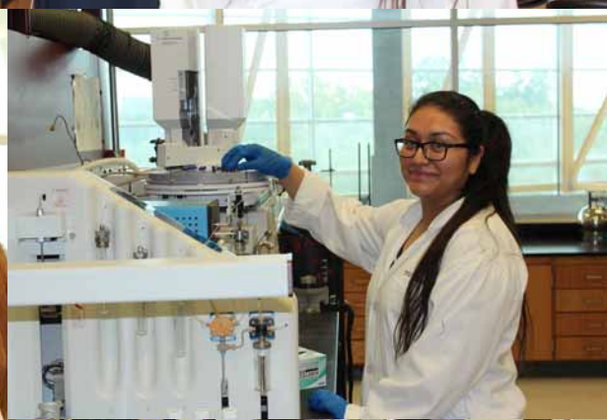
Ms. Charlotte Whaley

College Business Administrator III

whaley_cs@tsu.edu







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Message from the Dean

When you open this Annual Report, you will notice immediately that a new college name is now being used. The Texas Southern University (TSU) Board of Regents officially approved the change of our college name in its meeting on February 20, 2015, from the College of Science and Technology (COST) to the College of Science, Engineering and Technology (COSET). The “COST” now relates to our history, and “COSET” refers to our new life now and into the future. Our entire college family is truly excited about this change, especially because of the unlimited opportunities that the change will bring, such as the addition of more engineering programs and securing new funding from industry.

The upward trend in enrollment has continued forward from last year and the college experienced record growth in student enrollment for Fall 2014, an 18% increase over Fall 2013. The data suggests that over 20% of Texas Southern University students now choose a program in the COSET as their major, up from only 15% in 2009. This level of growth is phenomenal in view of the challenges associated with financial aid that have negatively affected overall enrollment at the university for the past several years.

“Over 20% of TSU students now choose a program in the COSET as their major”

Dr. Lei Yu, Ph.D., P.E.
Dean, College of Science, Engineering and Technology

The academic programs in our college have been developed through the concerted and collective positive efforts of both faculty and staff. First, two new engineering programs, Civil Engineering and Electrical and Computer Engineering, were inaugurated on April 9, 2015, at a successful event attended by leaders and primary employers in Houston’s engineering community. Second, the two-year accreditation reports for our Aviation Science Management and Industrial Technology programs were completed and met the accreditation requirements of the Association of Technology, Management, and Applied Engineering (ATMAE). Third, we completed an external review of our Chemistry Program. Finally, we have developed more solid relationships and articulation agreements for student transfers with the Houston Community College System, San Jacinto College, and the Lone Star College System.

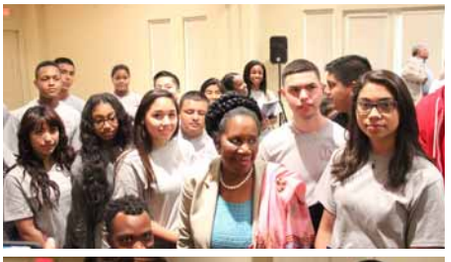
Industry leaders at the Engineering Inauguration Program

For students, efforts have focused on the orientation and retention of our COSET majors. The Office of Student Services and Instructional Support sponsored COSET 101 monthly meetings where students received reinforcement of skills intended to make them more successful. These included time management, library resources, study skills, graduation expectations, and information on career placement and internships. In Spring 2015, we initiated

Students participating in the COSET 101 workshop

COSET Connect, a new program intended to pair COSET faculty and staff advisors with those students who are the first in their families to attend college. Through intensive follow-up and mentorship by voluntary advisors, we hope to increase the retention of this particular student group. In another effort, we developed a Collaborative Learning Community (CLC) program to improve the mathematics preparedness of our freshman students. This program will utilize both student peer mentoring and a group learning approach to enhance comprehension and learning outcomes in all mathematics classes.

In terms of faculty, we established a new Faculty Connect program in the College where faculty members are provided the opportunity to discuss important college issues and new initiatives with the Dean at an informal lunch meeting, held on the first Monday of every month. Professional development opportunities for faculty members are also provided through the COSET Research Committee. These include participation in scientific meetings, conferences, training workshops, and publication of scientific papers and manuscripts.



Summer Maritime Academy participants with Congresswoman Sheila Jackson-Lee

Research is still a key essential component of our educational process. The NSF CREST program has now completed its 4th year in existence and will soon enter its last year of operation. An opportunity also exists for the CREST center to apply for the Phase II award. The college received the Department of Homeland Security (DHS) Scientific Leadership Award just last year, titled “Preparing Technically Savvy Homeland Security Professionals for Maritime Transportation Security.” DHS Administrators from Washington D.C. conducted a site visit on July 6, 2015, to discuss the status of the grant. During the site visit, the DHS delegation met with TSU administrators and the key project personnel, toured our research labs, and listened to the presentations by students who are involved with the project. The result of this site visit was very positive and it is expected that we may win the second phase award.

The NSF RISE and several other active grant awardees have been very busy with their respective research activities. It is also especially worthy to note that the 2015 Summer Undergraduate Research Program (SURP) has been substantially expanded from last year, now sponsoring a total of 27 undergraduate students from various majors in the college. We strongly believe that this program will greatly improve both student progression and graduation rates.

The college continues to sponsor

Middle School student representatives at the Engineering Inauguration Program

and operate various K-12 education outreach programs, such as the STEM Enchantment IV Program for middle and high school students, the spring Saturday Academy for middle school students, and the weekly after school program at Fondren Middle School. Both students and parents are very satisfied with the positive experience their children are receiving through these programs. We also hope these programs will increase the pool of students intending to study STEM subjects in college and that they will seriously consider enrolling in our school.

We conclude the 2014-2015 academic year with the publication of this Annual Report. It offers highlights of our various activities and programs. We are excited about what our faculty, staff, and students have accomplished this past year and look forward to an even more fruitful and productive 2015-2016 academic year!

Thank you.

COSET Board of Advisors Chairman's Message

The 2014 – 2015 academic year for the COSET Advisory Board was a milestone period in the history of the College of Science, Engineering and Technology. The Texas Higher Education Coordinating Board (THECB) has approved two engineering programs to be offered by COSET. The first one is the Civil Engineering program. The program involves research, development, planning, design, construction, and maintenance associated with urban development, water supply, structures, energy generation and transmission, water treatment and disposal, and transportation systems. Civil Engineering officially began in the Spring 2015. A second Engineering major, Electrical and Computer Engineering, began in the Fall 2015.

Currently, a Bridge Program that will focus on incoming Freshmen Engineering Students to support them before they begin their studies is being further developed. Envisioned is a two week program during which the incoming Freshmen will attend classes daily for limited college credit. These classes will include two hours of math, two hours of science, and two hours of success skills courses. In between the classroom sessions, the students will work with mentors/ adjuncts to discuss what they were just taught and strategies for the completion of their assignments.

The growing need to repair and expand infrastructure coupled with significant changes in the demographics of Texas have greatly encouraged corporations to invest in the education of their Civil Engineering staff. Beyond the Bridge Program, corporations will be encouraged to supplement our teaching staff with Adjunct Professors in areas of expertise specific to their industry and to offer student summer employment, internships, and scholarships. The Advisory Board will create an environment in which all COSET students, including our newly established Engineering students, will flourish while at COSET.

A second College-wide program, COSET Connect will focus on the first generation freshman student. We will give them special advisement. Each volunteer including the deans, department chairs, and faculty will take 10 students. The faculty will have regular meetings each semester with the students to academic or any other issues. How to succeed in their studies, or how to prepare for the future. This is a pilot program to increase the success of the first generation students and is the first on campus.

The COSET Alumni Association is in its fourth year of existence. The Association continues to recruit COSET graduates and its membership is increasing. Fund raising programs will be fully active in the upcoming year. Recent graduates are offered free memberships.

COSET reached 100% participation in the Annual Faculty/Staff Fundraising Campaign again this past year.

Our primary mission is to bring to the students of COSET the strongest educational experience possible and prepare them to fully participate in the marketplace upon graduation and assist in leading the world to a better place.

PAUL C. SIMMONS, P.E.
Chairman, COSET Board of Advisors

Members of the COSET Board of Advisors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Paul Simmons & Associates


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Marathon Oil Company


Murdock Smith
Consultant


Kimberly J. Williams
Metropolitan Transit Authority

COSET Alumni Chapter President's Message

LaKeisha Melton
President, COSET Alumni Chapter of TSUNAA

First giving honor and recognition to our TSU President Dr. Rudley, our COSET Dean Dr. Yu, TSUNAA President Julia Askew, TSU Alumni Relations Director Connie Cochran, COSET Advisory Board, COSET Executive Administration, COSET Faculty and Staff, COSET Partners, COSET Alumni, TSUNAA and its affiliated Alumni Chapters, TSU Faculty, Staff, Students, and Friends.

My name is LaKeisha D. Melton, I am the new COSET Alumni Chapter President, and 2006 Graduate of the COSET Computer Science Department, with a minor in Electronics Engineering Technology. I am a full-time corporate IT professional, small business owner, entrepreneur, mentor, and proud TSU alumnae. I am grateful for the opportunity to serve as COSET Alumni Chapter President 2015-2016, and I am eager for you to embark on this new journey with us.

We would like to thank our past President, Mr. Perry Miller, for his years of service, and for helping us lay the foundation for our Chapter. We would also, like to thank our past officers for their assertive efforts and dedication.

The COSET Alumni Chapter in strong affiliation with the University, the TSU National Alumni Association and the College of Science, Engineering and Technology, strives to give back to TSU's foundation, legacy, the students, and the future of this great university. We serve as networks, mentors, supporters, and most importantly family. We want TSU students to be confident, be encouraged, and claim their place in society. We are all here to help.

As a member of TSUNAA/ COSETAC, you will not only provide scholarship opportunities for students, give your physical time to support COSET, and mentor students, but you will be engaged in networking opportunities, professional development, career fairs (students and alumni), social events, community service, and fundraisers.

Let's show the University that COSET Alumni and Supporters are making an impact as well. We look forward to you joining and supporting our chapter, as we embark on a new journey to show what One TSU, and One COSET are really about! Get the word out! Join team TSUNAA/COSETAC today! #COSETAlumniCare.

COSETAC Executive Board:

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Shaunté Abdin

Vice-President of Membership
Amanda J. Henry

Treasurer
Dr. Hilton J. LaSalle

Secretary
Roben L. Armstrong

Parliamentarian
Rev. Carl Melton, Sr.

ALUMNI NEWS

Amanda J. Henry, B.S. Biology, M.S. Biology (TSU).
Ms. Henry conducted a STEM workshop on Saturday, February, 28, 2015 at the Children's Museum of Houston.

The FreshStart 2015 was held on Saturday, February 28, 2015, at the Children's Museum of Houston. FreshStart, a NSBE Houston Professionals' signature event, is a half day of interactive workshops for students in grades 6-12 that covers a variety of STEM disciplines and fields. It is designed to motivate students to set academic goals in STEM and provides NSBE Professionals an opportunity to give back and be role models! The students interact with working STEM professionals, as well as receiving paid entry into the Children's Museum of Houston after the program.

Shawn Williams, B.S. Biology, M.S. Candidate Environmental Toxicology (TSU).
Mr. Williams represented COSET Alumni recently at the Houston Hispanic Forum's Career and Education Day. The event took place at the George R. Brown Convention Center. The event focused on Career Paths (HB5 Endorsements-Based), Admission & Financial Assistance, Bilingual Representatives, Middle School Programs, and Parent Tracks.

Dr. Shawn E. Simmons, B.S. Petroleum Engineering (University of Oklahoma), M.S. Environmental Engineering (Rice University), Ph.D. Environmental Toxicology (TSU).
Dr. Simmons took part in the Seminar Series hosted by the Department of Environmental and Interdisciplinary Sciences at TSU.

NEW ENGINEERING PROGRAMS

Civil Engineering | Electrical and Computer Engineering

The College of Science, Engineering and Technology (COSET) has been authorized by the Texas Higher Education Coordinating Board (THECB) to begin offering Bachelor's degree programs in Civil Engineering in the spring of 2015 and in Electrical and Computer Engineering in the fall of 2015.

"This is a major addition to COSET's STEM degree programs and a great step forward in the advancement of education for minority students," said Dr. Lei Yu, COSET Dean. These programs will significantly increase the number of civil, electrical and computer engineers. These are the professional occupations with the greatest demand of all engineering and science occupations and which have the least minority practitioners.

Both programs will be accredited through the Accreditation Board for Engineering and Technology (ABET) which is the major engineering program accreditation body in the United States.

Both programs will differ from other similar programs in the area by including a formal co-op engineering track. Working with corporations, industries and government agencies, the Cooperative Education Track will give students the opportunity to gain work experience before graduating. Alternating work semesters with school semesters, students can work towards career goals in a meaningful job while going to school, testing degree interests in real world situations.

"It was our goal to develop a Civil Engineering Program that would provide high quality, practice-focused education to fully develop and enrich the students' lives in a culturally diverse environment; and develop their personal potential to the greatest extent possible to serve the society at large," said University President Dr. John Rudley.

"Societal needs call for greater diversity within the engineering profession," Interim Provost and Vice President for Academic Affairs Dr. James Ward noted. The two new degree programs will contribute to stemming the tide of constant decline in the number of degrees awarded to minorities and African American students in Civil, Electrical and Computer Engineering.

Engineering Community Welcomes COSET Engineering Programs

Many members of Houston's engineering community attended a luncheon to celebrate the inauguration of two new engineering programs in the College of Science, Engineering, and Technology at Texas Southern University. The program was moderated by Dean Lei Yu who, along with President John Rudley, and Professor David Olowokere, informed the assembled visitors in a dynamic and entertaining manner of the issues involved in the process of gaining the approval of the Texas Higher Education Coordinating Board. Mr. Robert W. Harvey, President and CEO, of the Greater Houston Partnership, presented the importance of these two programs in the context of the economy and jobs in Houston. Mr. Harvey shared some amazing facts, including the fact that the educational systems in Houston do not produce enough graduates with a Bachelor's degree to satisfy the demand for engineers, so that Houston is a net importer of degreed workers. The new engineering programs at Texas Southern will significantly increase the number of local workers filling the demand. Mr. Harvey made the commitment on behalf of the Greater Houston Partnership to provide strong support of the TSU engineering programs going forward. Dean Yu and Provost James W. Ward provided welcome addresses that related the significance that these new program changes would bring to the College, and to the University.

The keynote speaker for the luncheon was Mr. John Barton, Deputy Executive Director of the Texas Department of Transportation. The Texas Legislature was in session and required Mr. Barton's presence in Austin. Mr. Barton's address was recorded earlier and presented via video. Mr. Barton gave a very inspiring talk to the gathering, referring to the need for strong ties to the civil engineering program. Because of the growth of Texas, and hence, increasing transportation infrastructure needs, the Department of Transportation will need all the engineers it can "garner." Mr. Quincy Allen, the newly appointed District Engineer was present to represent Mr. Barton and to receive acknowledgement from the College.

Ms. Aminata Dicko, a civil engineering student, gave the students view of the changes that the new engineering programs would have for its students. Ms. Dicko indicated that students were now relieved of the anxiety associated with an engineering technology degree that would not be fully accepted. She stated that the new civil engineering program would make students competitive in the industry. Young people sometimes take liberties and Ms. Dicko was no exception. She challenged the assembled engineering companies by stating that their presence indicated their willingness to provide internships, scholarships, and ultimately jobs for graduates of the engineering program. She was warmly received. The College attempts to include prospective students at its major events and for this event, eleventh and twelfth grade students interested in engineering were invited from Furr High School, and they were warmly acknowledged.

Congresswoman Sheila Jackson-Lee provided final remarks and spoke of the importance of science, technology, engineering, and mathematics initiatives from a national perspective and recognized the College with a Congressional Citation.

6th Annual Open House Alumni and Partnership Luncheon

The College of Science, Engineering and Technology held its 6th annual Open House Alumni and Partnership Luncheon to an exuberant audience on Thursday, November 6th. Alumni, partners, friends, students, and potential students enjoyed an “Open Lab Day.” All of the College laboratories were open and hands-on demonstrations were given to visitors to the labs. Dean Yu gave the State of the College Report and announced new programs in Electrical and Computer Engineering and Civil Engineering. Board of Advisors Chairman Paul Simmons provided the perspective of the Board of Advisors.

COSET is actively encouraging students in K-12 institutions to consider STEM as a career. At each of the major events of the College there is participation from the secondary school community. We begin with the students participating in the "Who Am I", Inc. extended day program at Fondren Middle School. The Open House and Open Labs allowed these middle school students to get the most authentic feel of the TSU campus and the exciting prospects for study presented. TSU Open House Day events provided excellent programs and information about the students, faculty, and campus life. Having the opportunity to view the Science and Technology labs allowed the students in the "Who Am I” after school program at Fondren Middle School Students to have a glimpse of what awaits them in the future.

The first area encountered on the tour was the AutoCad lab where students had the opportunity to learn about computerized drafting applications and design. Next up was the Aviation flight simulator lab. Students are still raving about their experience in the flight simulators and how incredibly realistic the simulators are. One Fondren Middle School student says "It feels like you are actually flying.”

President of American Petroleum Institute Visits COSET

Jack N. Gerard, the President and CEO of the American Petroleum Institute (API) visited Texas Southern University on February 10, 2015. The API is the national trade association that represents all aspects of America's oil and natural gas industry. Mr. Gerard has led API since November 2008, expanding its membership and influence in all 50 states and globally, with offices in Dubai, Singapore, Beijing, and Rio de Janeiro. API's Washington presence is the foundation for the oil and natural gas industry's advocacy and outreach at state, federal and global levels on public policy, standards and certification programs, and as the source for information on industry best practices.

The College hosted Mr. Gerard at a luncheon meeting with the senior leadership of the University and the College. He described the program expanding API's outreach efforts to colleges and universities and universities and why he made a point to visit TSU.

Discussions at the luncheon were held with Dr. Elizabeth Brown-Guillory, Associate Provost for Academic Affairs, Mrs. Carolyn Oliver, Director of Development, Dean Lei Yu, the associate deans, the department chairs, and engineering students. Mr. Gerard gave a talk to assembled students in the afternoon. He encouraged students to consider careers in the oil and gas industry because fossil fuels will still be needed for a long time despite the growth of alternative energy. He described the sudden surge in oil and gas production as a result of new drilling technologies. Mr. Gerard urged students to prepare, and take advantage of the changes that are coming to oil and gas.

U.S. Coast Guard Commandant Visits TSU

U.S. Coast Guard Admiral Paul Zukunft visited TSU recently to visit with Dr. Carol Lewis, Director of the Center for Transportation Training and Research and Principal Investigator of the research conducted in the National Transportation Security Center of Excellence for Petrochemical Transportation (NTSCOE-P).

The Commandant's visit to TSU exposed him to NTSCOE-P's research on advanced methods and strategies that will increase the resilience of the nation's multimodal infrastructure to terrorist attacks on the movement of petrochemicals.

During the visit, the Commandant spoke about continuing the partnership with TSU in the Maritime Program and Athletics. Admiral Zukunft also talked about the U.S. Coast Guard's unique College Student Pre-Commissioning Initiative (Scholarship Program), also known as the CSPI program, that caters to Minority Serving Institutions (MSIs) and HBCUs. This is a program designed for motivated sophomore or junior undergraduate students who demonstrate a high caliber of academics and leadership excellence, who desire to serve their country in the United States Coast Guard. Students who are accepted

into this scholarship program will receive full funding for up to two years of college. Funding includes not only payment of tuition, books, and fees, but also a full Coast Guard salary, housing allowance, and medical benefits averaging over $43,000 a year while in school!

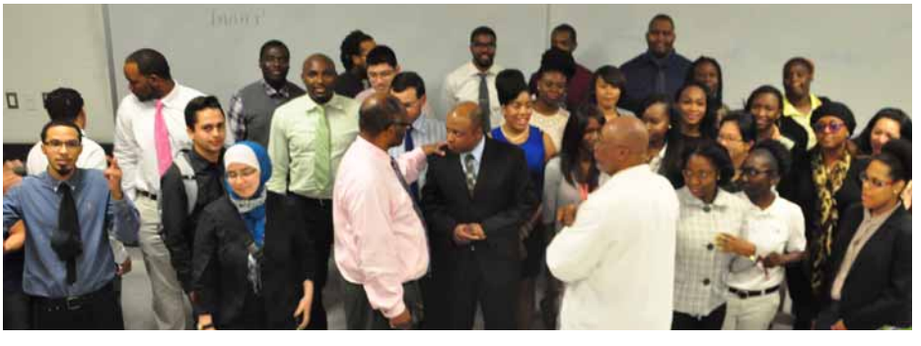
Houston Medical Forum Visits Department of Biology

On October 10, 2014, The Department of Biology hosted Dr. Kevin Kendall from the Houston Medical Forum to the Biology 300 Seminar for Health Professions. The seminar by Dr. Kendall was very exciting and full of inspiration for our students.

He discussed the preparation/ pathway to medical schools and life at medical school. Dr. Kendall finally unveiled the scholarship opportunities that are to be awarded to TSU students by the Houston Medical Forum.

Dr. Kendall is the founder of South Katy Medical Clinic and a staff member at Memorial Hermann Katy Hospital. He is a graduate of Baylor University with B.S. in Biology and an M.D. from The University of Texas Medical School at San Antonio. He mentors numerous high school and college students.

Dr. Kendall was welcomed by Dr. Warren Williams, Interim Chair of the Biology Department, Dr. Ayodotun O. Sodipe, and Dr. Cleverick D. Johnson, Professor, UT Dental School at Houston.



Houston Airports System Aviation Club Visited COSET

The Houston Airport System's Aviation Club visited Texas Southern University on February 4, 2015, with approximately 30 high school student and mentors. This was the third visit since the Aviation club's inception by Houston's Director of Aviation, Mario Diaz. The students are from Sterling High School, the Houston Independent School District's magnet school for aviation, and Carnegie Prep, a charter school within HISD.

Department of Industrial Technology Launches "Interns Dunn Right!"

JE Dunn Construction Company established a relationship with Texas Southern University, Construction Technology, in 2001. That relationship provided for two $2,500.00 annual scholarships to Construction majors. That support was enhanced a year later to include internship opportunities, and developed further into full time employment opportunities.

To build on the new internship requirement for the construction concentration, another JE Dunn Construction enhancement has been undertaken in spring 2015 by introducing the "Interns Dunn Right!" program component to build upon an already successful relationship. The program is a professional development mentoring program, taught by senior personnel of JE Dunn Construction, designed to prepare students for potential internships. This component of the program is open to everyone. However, Industrial Technology (Construction and Design) and Civil Engineering degree concentrations will be eligible for consideration for internships with JE Dunn Construction.

The program was launched on March 25, 2015 at 2:00 PM in Fairchild Bldg. 140.

Please contact Dr. J. Jonathan Lewis at 713-313-7908 or lewis_jj@tsu.edu and/or Dr. Antoinette Roberson at 713-313-7141 or robersonan@tsu.edu

JE DUNN® CONSTRUCTION

- Resume Building Workshop
- Interviewing
- Social Media
- Effective Communication
- Business Etiquette
- Networking Strategies
- Conflict Resolution and Decision Making
- Stress Management
- Time Management

COSET Enrollment is at Record High!

The academic year 2014-2015 brings a record enrollment to COSET. The total enrollment of COSET for the fall 2014 was 2062 as of October 20, 2014. This exceeds the previous record enrollment that was achieved in the late 1980s. COSET is growing with the thrust to advance STEM education. Each of the departments is experiencing growth. Clearly, biology is the most popular field of study in COSET.

The popularity of the field arises because of its integration with computational sciences, engineering, and technology. The health care delivery system is becoming exceedingly "High Tech." This transition to higher technologies has been progressing for many years and the COSET students are taking full advantage of it. COSET is offering two new engineering programs this year. Civil Engineering began in the spring of 2015 and Electrical and Computer Engineering will begin in the fall of 2015. Study in Computer Science and Electrical and Computer Engineering will provide students with an advantage in seeking employment in the industry. The facilities in COSET are cutting edge and almost all the 55 laboratories are state-of-the-art. The students should take full advantage of the opportunities in COSET.

COSET Faculty Enhancement Sessions

On Wednesday October 15, 2014 and Wednesday November 5, 2014, COSET sponsored two Faculty Enhancement Sessions, one focusing on a College Jump Start Program for Undergraduates and the other on the College's Recitation Development, respectively.

In the first session, Drs. Sleem and Rosenzweig served as facilitators. Dr. Sleem presented university data which indicated that the vast majority of our incoming freshman were not English 131- and Math 131-ready, as indicated by low TSI scores. Dr. Rosenzweig continued by presenting a proposed structure to capture a cohort of students (who are not Math-133 ready) and through customized summer jump start sessions, provide them with the necessary knowledge to retake the TSI and, based on their new scores, test into Math 133. Drs. Sleem and Rosenzweig also described how part of the program will focus on development of effective study skills and time management. Faculty discussion ensued, resulting in a recommendation to instead offer a specialized Math 133, 8-week course, provide joint workshops to ensure student success and 100% passage rate for the course.

In the second session, Drs. Saydam and Handy facilitated a discussion on recitation development for Math courses, particularly those that relate to the Physics program. This session generated a plethora of discussion that included 1) assigning student peer-tutors (who as part of their scholarship acceptance would have to "give back" in this manner) and 2) requiring that students take a recitation session that is associated with a particular course (e.g. Math 133), and that the recitation course be built into the curriculum (e.g. part of a 3 credit course grade rubric).

Altogether, these sessions were quite informative and stimulated significant discussion regarding increasing student graduation and progression rates.

Student Town Hall Meeting

The 2015 COSET Dean's Student Advisory Council Town Hall Meeting was well attended by students, faculty, and staff. The event was held on April 29, 2015 and the theme was "COSET wants to hear from you." The goal of the meeting was to engage students in an activity meant to hear student concerns, and student suggestions in an effort to improve the College.

Members of the COSET Dean's Student Advisory Council and Student Ambassadors hosted the event. Representatives from every department in the College was present to address students' questions and concerns. Students received a complimentary lunch in exchange for completing a short survey. The survey was aimed at determining how much students use their student email, Blackboard, Degree Works, and Grades First. The survey also asked about professor use of Blackboard. Students were given the opportunity to complete a comment/question card or to step up to the microphone to speak. The Dean, Assistant Dean, and Department Chairs responded to questions or comments.

COSET Mobile Application Development Group Formed

College of Science, Engineering and Technology students from the Department of Computer Science formed the TSU Mobile Application Developers Group (Group) in the fall 2014. The Group was created to give students real world software development experience and to support outreach to public schools by the Center for Research on Complex Networks. Students in the Group engage weekly with middle school students, teaching them how to program computers.

The Group began with a mini workshop called, "The Christmas Crash" which began on December 15, 2014. Participants committed to spending 6 hours each day at TSU through January 11th.

During a month of daily focused study and development, the Group produced its first application called "RollCall." Powered by the MIT App Inventor API, the Group produced an application that enables instructors to take the class roll without passing a roll sheet or calling students names individually. RollCall is now in the testing phase of development and when the application is complete, it will be available for both Apple iPhones and Android phones.

Students interested in joining the Group and learning how to develop mobile apps are asked to contact Joshua Holley, project manager for the Group at jshhlly@gmail.com. Other members of the Group are Anthony Powell, Lawrence Baedee, Enjoli Williams, and Jamaal Roby. Students worked under the mentorship of Professor O.H. Criner and were partially supported by the Center for Research on Complex Networks, Outreach and Education component.

Administrative Professionals Appreciation Luncheon

The College of Science, Engineering and Technology honored its staff for their exemplary contributions and service to the College at a luncheon held Wednesday, April 22, 2015 in observance of Administrative Professionals Day. Our staff has worked tirelessly to accomplish the objectives, goals, and mission of the College. COSET staff continues to represent the College with the highest standards of excellence, professionalism, and dedication to students and faculty. Recognition of their valuable roles in the workplace is of the utmost importance. Our professionals work efficiently behind the scenes to make certain daily operations run smoothly in their offices. They exceed all expectations and go a step beyond by participating in the planning and implementation of COSET special events and activities.

The College salutes your positive contributions and appreciate you for a job well done!

The College of Science, Engineering and Technology Students, Staff, and Faculty Members at the TSU Homecoming Parade 2014

TSU HOMECOMING AWARDS

Office/Dormitory

Door Category: Transportation Studies TECH 215 - 2nd Place

Lobby/Foyer Category: Office of the Dean TECH 408 -2nd Place

Office Category:

Transportation Studies TECH 215 - 1st Place

COSET Student Services - 2nd Place

COSET Dean's Suite - 3rd Place

Floats - Campus Participants - COSET - 3rd Place

Cars - Campus Participants - COSET - 3rd Place

STUDENT SERVICES AND INSTRUCTIONAL SUPPORT

TECH 150

In an effort to change the academic culture, the Office of Student Services and Instructional Support (OSSIS) was established. The office is overseen by an Assistant Dean, Desirée Jackson, Ph.D. who is assisted by an Administrative Assistant, Ms. Tioka Freeman.

OSSIS serves the College of Science, Engineering and Technology in multiple ways. The office is responsible for approximately 1600 majors, undergraduate and graduate, in a given semester. Under the umbrella of Student Services, this office is responsible for: resolving issues with student registration; resolution of student academic disputes; providing resources or referrals for tutorial services; answering financial aid questions; processing of student academic documents; processing of COSET scholarships; referrals for academic advisement; recruitment of freshmen majors and transfer students; orientation of incoming students; preparation for student events such as award ceremonies, career days, events for prospective students; and facilitation of student interactions with recruiters from graduate and professional programs and/or companies seeking interns or hires.

Since its implementation in 2009, the staff has increased to include a Director for Advisement, Ms. Evangeline Pearson, who was brought on to assist with supporting mostly the freshman students. Orientation and retention of COSET majors is a main focus. Through the COSET 101, students receive continuous reinforcement of skills to make them successful in their studies. The students are encouraged to attend monthly seminars on study skills, time management, library resources, graduation expectations, and career placement and internships. Additionally, Midterm Madness and Finals Frenzy events have been implemented to encourage students to meet with science tutors and make adequate preparations for important exams. Under the umbrella of Instructional Support, this office provides oversight to the instructional technology within the College. Specifically, some 40+ projectors used in the TSU Science Center lecture halls and lab classrooms for classroom instruction; document projectors used in the lecture halls; audio systems housed in lecture halls and the accompanying accessories and equipment. Additionally, there are many computer laboratories housed in the College which also receive service through OSSIS. There is one Technical Support Specialist, Mr. Peter Olamigoke, who is currently serving the IT needs of the College through OSSIS.

COSET faculty receives support through OSSIS to identify and effectively utilize technology to enhance classroom instruction. There are scheduled workshops held through OSSIS to give faculty hands-on instruction in aspects of the Blackboard course platform used by the University.

COSET 101

The College of Science, Engineering, and Technology Introduces new COSET Connect Mentoring Program in spring 2015, and COSET 101: New Student Meeting is now in its 3rd Year

The College of Science, Engineering, and Technology Office of Student Services and Instructional Support (OSSIS) has established two programs designed to help new freshmen and transfer students with the best opportunity possible to succeed in college. OSSIS is continuing its mission to help retain students within the College who may otherwise have dropped out due to poor grades or changed majors due to the rigors of a STEM program.

COSET's newest pilot program is COSET Connect or COSET First Generation Tigers which matches first generation Tigers with the Dean, Department Chairs, and faculty members to increase progression and retention among students who are the first in their families to attend college. A group of 10 students meets with a member of the COSET faculty once monthly and via email to discuss issues of concern to them and to share. Our team is eager to help students and are committed to the task. It is the goal of the program for COSET students to develop the self-motivation and self-discipline necessary to succeed in college.

COSET is proud to enter into the 3rd year of the COSET 101: Freshmen Meeting, designed to promote student success, persistence and retention. Because many students enter college not fully knowing all it entails to be successful in college, this course was designed to help bridge the gap between the skills the student brings to college and what they need to know to be successful (academic skills vs. the non-academic skills.). On the fourth Wednesday of each month, the OSSIS team hosts a COSET 101: Freshmen Meeting focusing on different topics that entering students need to be aware of in order to be successful. Topics included adjusting to college life; time management; how to study/note-taking strategies; creating a study pact; general education requirements; career planning; and other campus resources to name a few.

Over the past couple of years the Freshmen Meetings have grown and now include students on every level who have the desire and will to learn more. Additionally, the attendance to the meetings have also increased from 39 to over 100 students. Although, COSET 101 began in COSET it is only a success due to the efforts of the Texas Southern University family who have committed themselves to ensure our students do well both academically and in life.

Financial Aid and You: SAP and the Lifetime Cap

Information Literacy and E-Books

How We Can Help: TSU Counseling Center and Office of Disability Services

Using the My TSU Web and Blackboard

Study Skills and Time Management

National Science Foundation
Targeted Infusion Project

The National Science Foundation (NSF) announced its 2015 Targeted Infusion Project (TIP) award to Texas Southern University to support its proposed research on "Development of a Knowledge-Based System for Integrating Artificial Intelligence into the Undergraduate Engineering Curriculum." This is a three-year grant with a total funding of $400,000. The project is under the direction of faculty members in the Department of Engineering including Drs. Yaqi Wanyan, David Olowokere and Xuemin Chen. The proposed research seeks to develop an interactive and comprehensive intelligent database to document, compare, and analyze cutting-edge Artificial Intelligence (AI) applications in the civil engineering field and use it as the platform and educational media to enrich the Department's curricula.

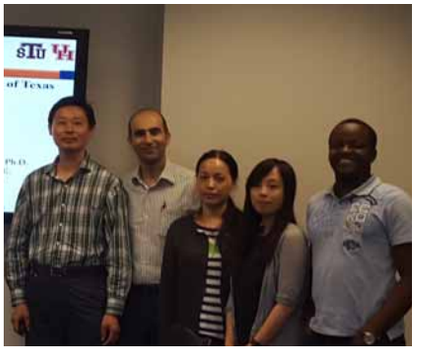
The project activities will impact more than 400 undergraduate students in the Department of Engineering to promote learning interests, stimulate cognitive processes, emphasize underlying engineering problem-solving activities, enhance academic infrastructure, and to foster an interdisciplinary setting that reflects the multi-disciplinary nature of many engineering processes. The proposed activities will also have a significant impact on how new technologies are taught in an old-fashioned engineering field and how students learn these concepts. Furthermore, this project will produce an intelligent database, which can be used both as an educational media and a research platform. The expandable and sustainable database will enhance the academic infrastructure of the COSET and increase the engineering programs' visibility.

Environmental Protection Agency P3 Phase I Award

A COSET team of faculty (Dr. Hyun-Min Hwang; Environmental and Interdisciplinary Sciences), graduate students (Matthew Fiala and Sharmila Bhandari; Environmental Toxicology PhD program) and undergraduate students (Aminata Dicko; Engineering major and Zara Uddin; Biology major) received a grant of $15,000 from the US Environmental Protection Agency (EPA). This grant is for EPA's P3 (People, Prosperity, and the Planet) Phase I, which is a national college competition for designing solutions for a sustainable future. This program offers students quality hands-on experience that brings their classroom learning to life. This team developed an idea to reduce energy consumption especially during hot summer days by installing innovative green roof as a heat insulator in commercial buildings and residential houses. This innovative green roof design includes a hydroponic plant growing system and a rainwater harvesting and recycling system. They will bring the proposed design to the National Sustainable Design Expo to compete for the P3 Phase II Award and a grant of $75,000 to take their design to real world application.

ITRI Won a TxDOT Research Project

Texas Department of Transportation (TxDOT) is contracting with TSU for a research award 0-6887 on "Transportation and Economic Impact of Texas Shortline Railroads" to Innovative Transportation Research Institute (ITRI) with TSU as the lead university and University of Houston as the collaborating institution. Dr. Fengxiang Qiao is the Project Supervisor and PI on the TSU side, and Dr. Lei Yu is the Co-PI. The total award is $297,252, while TSU's portion is $148,420. The project is designed to determine detailed roles and plans for the Shortline railroad network of the State of Texas, and analyze the transportation and economic impacts of Shortline railroad operations for local communities and the entire state of Texas.



High Speed and Intercity Rail: Connecting Texas

The Department of Transportation Studies hosted its Spring Conference on March 26, 2015. The theme for the conference was: “High Speed and Intercity Rail: Connecting Texas.” This conference was designed to bring together industry leaders, officials, faculty and students to engage in dialogue about the importance of rail, transportation planning, local transportation, and development. The conference attracted over 100 attendees who are transportation professionals from various agencies, including federal and state transportation organizations, local transportation industries, along with students and faculty members of the College of Science, Engineering and Technology. Dr. Yi Qi, the Chair of the Department of Transportation Studies, welcomed the guests and gave a brief introduction to the Transportation programs at TSU. Dr. Carol Lewis, Director of the Center for Transportation Training and Research, introduced the Breakfast Keynote Speaker, Dr. Lisa Nungesser, Senior Vice President/Project Manager of Parson Brinckerhoff, Inc. Dr. Nungesser presented information on high speed rail which included its benefits and the cost of not developing the high speed rail systems.

Following the breakfast session, two panel discussions were held. The first panel discussed “High Speed and Intercity Rail: World Perspective.” Panelists included representatives from the Gulf Coast Rail District, Lone Star Rail District, Texas Rail Advocates, and Texas Central Railway. The second panel responded to the first. The second panel included representatives from the Houston-Galveston Area Council, North Central Texas Council of Governments, The Houston Wave, and Uptown Houston Association. The Panels were moderated by Department of Transportation Studies Adjunct Professors: Paul Simmons, P.E. and Giovanni Puccini, P.E., KBR. The conference also included a Luncheon Keynote Speaker, Alan Rutter, Division Head for Freight Mobility at Texas A&M Transportation Institute. Mr. Rutter spoke to the audience about Texas’ unique approach to transportation and how that affects the high speed rail.

This conference provided TSU students with opportunities for networking with transportation professionals in government agencies and local industries, and increased their awareness of the issues, opportunities, and challenges associated with transportation.

NASA University Research-1 September Quarterly Meeting

In September 2014, Texas Southern University was the host institution of the NASA University Research (UR)-1 quarterly meeting. The meeting involved co-investigators from Tougaloo College, Prairie View A&M University, Savannah State University, and Jarvis Christian College along with NASA administrators. Topics covered in the meeting involved discussing the current circumstances with the past SpaceX3 project launch using the Nanoracks payload; informing the Dean of COSET, Dr. Yu, of the prominent presence of Texas Southern University in the project; and the exposure and experience the project has provided to the students actively involved. The project, “Immune Modulation in Normal Human Lymphocytes on ISS” hypothesized that synthesized benzofuran-2-carboxylic acid derivatives might obviate immune dysfunction which occurs as a result of the space flight environment and maintain immune function by improving host immune system and function.

Undergraduate and Graduate Students of TSU Involved in Solving Mercury Contamination Problems

A team of graduate and undergraduate students from the College of Science Engineering and Technology at Texas Southern University, led by Dr. Maruthi Sridhar Balaji Bhaskar (PI) are collaborating with scientists at the Oak Ridge National Laboratory (ORNL) to understand the trends of mercury contamination and bioaccumulation in the East Tennessee streams. Two undergraduates and one graduate student from TSU were involved in a ten week summer research project from June 1 to August 7 at the ORNL in Oak Ridge, Tennessee.

The project is very significant because over the past several decades, substantial environmental and ecological changes have occurred in selected east Tennessee streams that have received historical pollutant discharges from the US Department of Energy's (DOE) Y-12 National Security Complex (Y-12 NSC).

One of the largest contaminants released was mercury, a significant environmental pollutant due to its persistence in the environment, ability to bioaccumulate in food chains, and its known hazards to both human and wildlife. The transformation, bioaccumulation and health effects of mercury are subjects of intensive investigation. During the summer, the students were involved in separate independent projects. Mr. Segun Adelanke (Graduate Student in Environmental Toxicology) was working on "Mapping the landscape level changes in the East Fork Poplar Creek watershed using Landsat data." Mr. Alexander Torres (Undergraduate Student in Chemistry) was working on "Bioaccumulation of mercury and other environmental contaminants in Bear Creek, Tennessee," and Mr. Reginald Johnson (Undergraduate Student in Biology) was working on "Historical trends of mercury contamination and bioaccumulation in Hinds Creek and White Oak Creek, Tennessee." This research is funded by a National Science Foundation (NSF) grant of $199,999 for 2 years (2014-2016) awarded to Dr. Bhaskar of Department of Environmental and Interdisciplinary Sciences at TSU to support his proposed research on "Spatial and Temporal Modeling of Mercury Fate and Dynamics in Tennessee watersheds."

Osteoimmunology and Integrative Physiology (OIP) Laboratory

In summer of 2015, the TSU COSET OIP laboratory, under Dr. Sundaresan's guidance, saw a flurry of STEM activities. Dr. Sundaresan has an ongoing collaboration with the University of Aarhus in Denmark. The first activity was begun by graduate student Vivek Mann, who is pursuing his Ph.D. under Dr. Sundaresan. Mr. Mann won a TSU faculty-led study-abroad scholarship. After completion of the spring 2015 semester, Vivek used the TSU scholarship program to continue his Ph.D. project on bone loss in microgravity while in Denmark. Dr. Sundaresan helped him set up the experiments with bone and stem cells in Denmark and followed up by visiting Vivek at Aarhus midway in June 2015 providing guidance alongside with collaborator, Dr. Daniela Grimm from Aarhus.

Dr. Sundaresan went to the University of Loughborough in the UK in June 2015 as an expert in the field of bone tissue work. During this visit, she served as an external Ph.D. examiner from TSU, for Hazwani Suhaimi's Ph.D. dissertation on Bone Tissue Engineering in the Department of Chemical Engineering. There has been an ongoing collaboration between Dr. Sundaresan and Dr. Diganta Das from Loughborough for the past six years. Dr. Das visited Dr. Sundaresan's lab in 2010 as a visiting Fellow for six weeks, on a joint Royal Society Grant.

In July 2015, Dr. Sundaresan represented TSU at the International Space Station Research and Development conference in Boston, where she presented results from the April 2014 ISS mission. She was also interviewed for NASA TV during the conference. Upon her return to Houston, she led efforts for the NASA ISS quarterly meeting in Johnson Space Center July 16-17, 2015.

Dr. Sundaresan then travelled to Sapporo, Japan for the 23rd International Conference on Nutrition and Integrative Medicine to deliver an invited key note lecture "AHCC Mediates Lymphocyte Activation and Promotes Cell Adhesion via Direct Targeting of T Cell Receptors and Adhesion Molecules."

In July 2015, Dr. Sundaresan was also featured in Bio-Houston's Women in Science with Excellence (WISE) July 2015 blog, where she elucidated the progress of STEM work at TSU. WISE is an initiative of BioHouston dedicated to advancing women in science, technology, engineering and mathematics (STEM). WISE is a movement celebrating exceptional women in technical disciplines. By connecting women of all ages, WISE inspires women to turn their interest in STEM into a life-long passion.

In summer of 2015, the TSU OIP lab mentored four high school interns from the Army REEP and STEM ready programs, where they investigated the effects of nutritional supplements on immune cell activation. They were also trained in professional development.

In August 2015, Dr. Sundaresan visited India to deliver a lecture on her research at the Women's Christian College in Chennai, India, a premier institution of undergraduate and graduate science programs. She highlighted various research opportunities available at Texas Southern University to the group of undergraduate students.

Dr. Vivek Mann at Aarhus University, Denmark working on Random Positioning Machine in the Department of Pharmacology.

Institute of Transportation Engineers Student Chapter

The TSU Institute of Transportation Engineers (ITE) Student Chapter organized various events. Most events had guest speakers, and provided educational and career information which greatly enriched students and members in a positive way.

Students took part in a volunteer activity at the Logistics and Maritime Youth Expo 2014 on September 6, at the Port of Houston Authority's Bayport Cruise Terminal in Seabrook, Texas. During the course of the event, students watched an exhibition safety operation on the beach which included information on CPR/911, boat/vessel examinations and training; U.S. Coast Guard helicopter hoist rescue and landing; and exhibition of a U.S. Coast Guard RB-S patrol boat and damage control tank.

The members participated in the "High Speed and Intercity Rail: Connecting Texas" conference held on March 26, 2015. The conference was hosted by Department of Transportation Studies, Center for Transportation Training and Research (CTTR), and the ITE TSU Student Chapter. The conference featured a Breakfast and Luncheon Keynote Speaker as well as two panel discussions with industry leaders and experts on rail, regional planning, local transportation, and development. Students prepared several questions for discussion rounds with the participants and presented the responses to the guests.

The ITE TSU student chapter meeting was held on Wednesday, May 6, 2015. The meeting had 3 segments including 3 guest speakers, assessment of the financial report for the 2014-2015 year, and election of officers for the 2015-2016 financial year followed by lunch. The three guest speakers were Mr. Kenneth Brown, Manager of Service Planning at the Metropolitan Transit Authority, Ms. Da Li, Associate of Traffic Engineers, Inc., and Ms. Krystal Lastrape, Traffic System Specialist at Texas Department of Transportation. All guest speakers shared their experience regarding government and private consulting firms, traffic control plans and policies, and capital projects. This information prepares students for future employment prospects.

The 2014-2015 officers of TSU ITE Student Chapter were Peijia Tang (President), Vincent Hassel (Vice President), Ruksana Rahman (Secretary) and Johora Munni and Walter Council, Treasurers. The elected officers for the 2015-16 year are Mahreen Nabi, President, Tyrie Goodman, Vice President, Wu Ying, Secretary, and Larry Frost, Treasurer.

Health Occupations Students of America

Texas Southern University chapter of Health Occupations Students of America (HOSA-Gamma Eta Rho) continued their legacy of attending and competing in the 2014-2015 Texas HOSA State Leadership Conference on April 9-11, 2015 in Dallas, Texas at the Hilton Anatole Hotel. This year, the current board of committees/officers of TSU-HOSA sent 14 students to compete against over 100 high schools and greater than 16 different collegiate chapters such as the University of Texas in Austin, the University of Texas in Dallas, Texas A&M University, the University of Texas Pan-American, the University of Houston, and the University of St.Thomas.

At this leadership conference, officers and members attended a HOSA-Sponsored leadership training seminar in order to increase their leadership skills and allow them to efficiently lead the chapter for the upcoming year. As officers and members studied diligently throughout the year, the officers prepared quizzes for their members and held the first TSU State Leadership Competition in order to help members be more prepared for their event. Under the leadership of Tommy Quach (President), Kristina Curry (Vice-President), Ben Caballero (Secretary), Ali Bilal (Historian), Autumn Pitre (Treasurer), Paul Ha (Treasurer), and Dayana Abdullah Smoot (public relations), TSU was honored at the recognition and award ceremony at the end of the conference in the main ballroom of Hilton Anatole hotel. Twelve out of fourteen members were recognized as finalist in their competitive events which included CPR/First Aid, Sports Medicine, Forensic Medicine, Dental Terminology, Medical Terminology, Pathophysiology, Human Growth & Development, and Medical Laws & Ethics. Of the 12 members who were recognized as finalists, 8 members moved onto the next level of competition at the National Leadership Conference in Anaheim, California on June 24-27, 2015. In addition, 8 out of 14 members were also recognized at the award ceremony for placing in the top 10% of competitors on the Health Care Issue Exam as they competed among other collegiate competitive members from every university that attended this conference. In addition, TSU-HOSA member, Sarah Sejoro, received the highest score on the Health Care Issue Exam in the pool of over 250 collegiate competitive members.

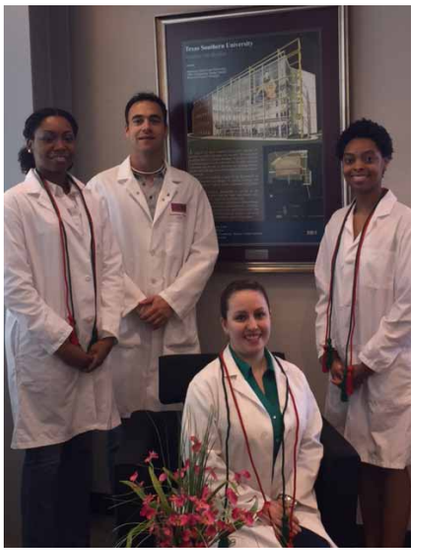
TSU-HOSA chapter was also recognized for their community service. Fourteen members received the Barbara James Service Award. TSU-HOSA would like to show their appreciation by recognizing Dean Dr. Lei Yu (Dean of COSET), Dr. Warren Williams (Biology Department Chair), Dr. Hector Miranda (Advisor), and Dr. Ayodotun Sodipe (Advisor) for all their support of TSU-HOSA.

Beta Beta Beta National Biological Honor Society

Beta Beta Beta (TriBeta) is a national honor society for students, especially undergraduates, dedicated to improving understanding and appreciation of biological study. The TSU TriBeta chapter, “Delta Upsilon,” is a platform for students to earn recognition for their efforts and accomplishments, and to network with other students and faculty of the same interests. Many members are pursuing future careers in graduate and professional schools (medical, dental, veterinary, pharmacy, etc.).

TriBeta was founded nationally in 1922 with the “Delta Upsilon” chapter established at the University of Washington in 1965. TriBeta chapter programs typically include reports of research by members, community service, fundraising, tutoring, and social gatherings. An annual formal induction ceremony is held every spring, but membership applications are accepted year long. TriBeta is currently directed by 3 member officers and two faculty advisors, Dr. Jason Rosenzweig and Dr. Shishir Shishodia.

TriBeta membership is available to biology undergraduate and graduate students who have successfully completed 12 hours in Biology with a 3.0 GPA. Since TriBeta is an honor society, participation and involvement is not only encouraged but also expected. TriBeta provides myriads of opportunities on campus and welcomes you to join in and see how easy and rewarding it is to be a part of TriBeta! Non-members are also welcome to attend the meetings and activities.



Graduating Members. Standing: Erica Shead (Graduate Member), Dr. Jason Rosenzweig (Primary Advisor), Ty’Riana Wilson (Acting Vice President) Sitting: Kristina Curry (Acting President)

Innovative Transportation Research Institute

Dr. Fengxiang Qiao and four graduate students, Peijia Tang, Qing Li, Boya You, and Wu Ying from the Innovative Transportation Research Institute (ITRI) at TSU attended the 28th International Chinese Transportation Professional Association (ICTPA) meeting in Irvin, CA from May 14-17, 2015. Dr. Fengxiang Qiao was re-elected as the first Vice President of ICTPA. The TSU team conducted six research presentations covering traffic simulation, eco-driving, vehicle emission modeling, connected vehicle technology, etc.

On May 28, 2015, the Intelligent Transportation Society (ITS) TSU Student Chapter invited ITS Texas Board Director, Mr. Mike Pietrzyk to present a recent ITS innovation by TxDOT aiming to wirelessly measure the heights of oversized trucks in Houston so as to eliminate the damage to interchange bridges. Mr. Mike Pietrzyk is the engineer and manager of TxDOT at Houston TranStar. His seminar attracted several ITS TSU members and was followed by very active interaction.

Dr. Fengxiang Qiao and his Ph.D. student Qing Li, (Environmental Toxicology program) presented four research papers at the 108th Annual Conference and Exhibition of the Air and Waste Management Association in Raleigh, North Carolina from June 22-25, 2015. Co-authored with Dr. Lei Yu and other two graduate students, Boya You and Wu Ying, these presentations were all related to vehicle emission modeling and traffic noise analyses.

The presented papers have been accepted for publication in the conference proceedings. This conference is one of the largest and oldest conferences on air and waste management.

National Society of Black Engineers

NSBE has come a long way from previous academic years. This past academic year was dedicated to the refocussing and redevelopment of the TSU NSBE chapter. NSBE did have a successful year. Starting in the Fall 2014 semester NSBE participated in several volunteer efforts such as: the TSU Disability Awareness Day, NSBE Jr. Chapter, the COSET Float Design for TSU Homecoming, the TSU Homecoming parade, Walk for Education, and Meals on Wheels. In the Spring 2015 semester, volunteer events included: the Houston Regional Seaperch Underwater Robotics Competition and the NSBE Jr. GRAND Engineering Challenge. There were two fundraising events that were very successful.

NSBE had the opportunity to attend three major career development and career fair opportunities. In the fall NSBE attended the Women' of Color conference in Detroit, Michigan and the Fall Regional Conference in Baton Rouge, Louisiana. Members also attended the National Conference in Anaheim, California. Each conference was beneficial and a great success. At the conferences students were able to develop their networking skills and make those connections that have resulted in full-time employment and internship opportunities for several students. Joshua Verret, Enjoli Parker-Williams, Kenyata Thomas, Alonzo Williams, and Simone Holmes are just a few of the students who have received internships and full time employment. In closing, NSBE is proud to have had many scholarship award recipients.

Martin Banja, Joshua Verret, and Simone Holmes received scholarships from NSBE. While Temitope Gbaja, Enjoli Parker-Williams, Samuel Kanu, Aminata Dicko, Ja'Vonn Liner, Jericho Johnson, and Franklin Kigwe received scholarship awards from TSU.

Minority Association of Pre-Health Students

The Minority Association of Pre-Health Students (MAPS) is a pipeline program of the Student National Medical Association (SNMA), established at universities throughout the nation. SNMA is the nation's oldest and largest independent, student-run organization focused on the needs and concerns of medical students of color.

MAPS, as a chapter under SNMA, is a network of pre-health students nationwide. It is designed to enhance both the academic and professional skills of underrepresented pre-health students. This goal is achieved by exposing members to the medical field, providing academic resources, and creating networking opportunities, in turn producing successful and competitive candidates at their respective medical or health-related professional school. Through this work, MAPS educates and increases awareness of important health topics not only to underrepresented minorities, but also to everyone in the community.

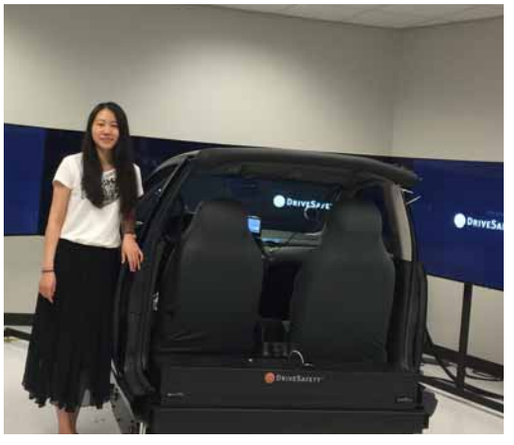
MAPS has many activities planned for this upcoming semester, including but not limited to guest speakers, pre-medical workshops, conferences, and volunteer opportunities. MAPS is fully committed to the academic and social enrichment of the pre-health students at Texas Southern University.

ITS China Delegation visits COSET

The Intelligent Transportation Society, China delegation, led by the former Vice Minister of the Ministry of Science and Technology of China, visited the College of Science, Engineering and Technology on Thursday, September 11, 2014. The 10 member delegation, including a number of CEOs and owners of big corporations, toured the laboratories of the COSET. The Director of the Science and Technology division of the Consulate General of the People's Republic of China in Houston also accompanied the visitors. The purpose of this visit was to learn about the academic and research programs at COSET and identify collaborative and investment opportunities. The delegation met with all department chairs, associate/ assistant deans, as well as the staff from the TSU Confucius Institute during lunch.

Visiting Student from Beijing Jiaotong University

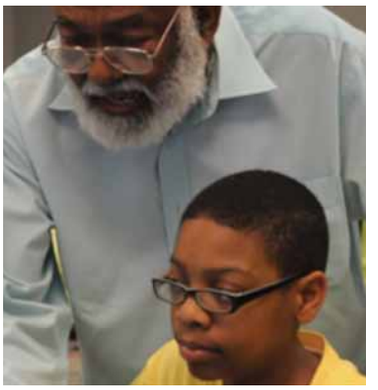
Ms. Xiaofei Sun, a graduate student from Beijing Jiaotong University in China, is visiting TSU College of Science, Engineering and Technology conducting a research project titled "Environmental Impacts of Using Different Advanced Traffic Signal Status Warning Systems" under the supervision of Dr. Yi Qi. The goal of the research is to evaluate the environmental effectiveness of different driver warning systems through driving simulator tests. The DriveSafety



DS-600c simulator in the driving simulator lab in the College of Science, Engineering and Technology was used for this research. Ms. Sun has had a great experience working with TSU students and faculty, and this collaboration has led to a research paper submitted to this years' Transportation Board Annual Meeting in Washington DC. It was a very productive experience and more international collaborations are expected in the future.

CRCN STEM ENCHANTMENT IV

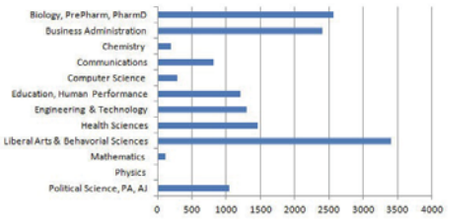
Adventures in Logic, Mathematics, and Games



The College of Science, Engineering and Technology (COSET) and the National Science Foundation (NSF) Center for Research on Complex Networks (CRCN) hosted its Fourth Annual STEM Enchantment Program titled: “Mobile Computing with STEM for Young People.” 2015 was the most exciting year to date for the STEM Enchantment outreach program. Children from the sixth to the eleventh grade were all fully engaged in the program,s games, mathematics, and computing activities. The objective of the program was to find a paradigm to fully engage children in STEM activities. STEM Enchantment IV was an extremely successful program because of the lessons learned in the previous years.

The original proposal to the NSF for the Center for Research on Complex Networks stated, in part, that “The goals of the education program in the proposed CREST center are to: (1) increase the constituent pool of secondary school students willing to study STEM subjects;..” This goal is the focus of the STEM Enchantment program. The mathematical subjects were the emphasis because of the extremely small population of students in these subjects. Students choose not to study mathematical subjects when they finish high school for reasons that appear to be related to experiences they have in high school. The graph below shows the extreme situation that exists with respect to education in the fundamental mathematical sciences. Of the more than 14,000 high school students who applied for admission to TSU, the graph below summarizes their numbers and their choices of fields of study. The actual number who chose physics was 16, which is so small it does not appear on the graph.

Summary of aspirations of applicants for admission to Texas Southern University for the Fall 2014



It is easy to see the critical nature of the number of students in chemistry, computer science, mathematics, and physics. This situation is not new and no school reforms have made any significant improvement. This suggests that a new paradigm needs to be established for the teaching and learning of mathematics, physics, and chemistry in the secondary schools. Our research in STEM Enchantment was to find a paradigm to excite and “enchant” students with mathematics and science, not necessarily to enhance their capabilities. The student’s capabilities will increase if their interest in the subject is sustained. In this way enchantment is different from enhancement. Their interest must be sustained throughout their secondary school career or they will choose other fields as the graph shows.

Since STEM Enchantment I, the focus has been on an alternative to the traditional school paradigm. We wanted to provide students with a different view of STEM with exciting summer activities. The approach was to emphasize reading in the non-textbook literature of science and mathematics, robotics and computing. Students enjoyed the program, but some said it felt too much like school. For STEM Enchantment II we changed to focus on climate change. In both years, the reliance was on public school teachers to carry out the program. The enchantment idea was to be different and present an alternative notion of school and we had not yet achieved that objective.

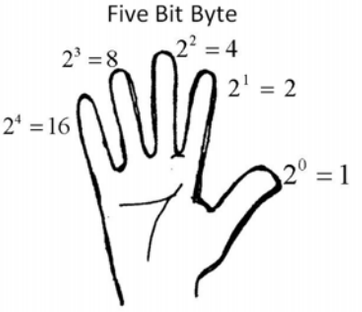
In STEM enchantment III, the program focused on what children like to do also – and that was playing games. The teacher was Professor Criner and the helpers were two undergraduate students. Computer games and programming were emphasized using Visual Basic and Android programming environments. It became clear that there were not enough student mentors to satisfy the demands of the children.

STEM Enchantment IV greatly expanded the results of the previous year and was designed to emphasize the connection between games and mathematics and computing. The connection between games and mathematics has been known for a very long time. However, the use of games as the basis for a mathematics and science pedagogy for secondary schools is new and our experiments tend to show that students become excited by learning in this way. Games and mathematical systems are structured in very similar manner. Hence, games can be used to introduce deductive systems. This is very important because in the traditional pedagogy the deductive systems of mathematics are a surprise when they suddenly appear in geometry. Children will become familiar with following the rules of the system when the concepts are introduced as a logical system. Games reinforce the formalism of the logic.

Several number systems were presented to students and the algebra of the real number system

was studied. Students examined rational and irrational numbers and studied the difference between them. They learned the formal definition of a rational number and to identify and construct irrational numbers by showing and creating numbers that did not satisfy the definition of a rational number. This simple notion of applying the definitions of concepts is essential to mastering mathematics. Students studied rational numbers by using a program to compute their decimal equivalents like 67 divided by 73 to 500 places and observed the repeating decimal.

Students learned to model a 5-bit computer and to use the binary number system to count to 31 on one hand. This was great fun and resulted in the creation of the Five-Bit Game, which was one of the most exciting games of the program. Students used the binary place values assigned to each finger to count to 31 on one hand. The big contest was to see who could do it fastest. The fastest was 6 seconds. The Five-Bit Game consisted of two teams of five people each, a moderator, and scorekeepers. The teams sat in chairs and the moderator called out a number between 1 and 31. The teams sat in chairs that were assigned place values in binary. Each team member was a bit in the 5-bit byte. When the number was called out, the team members had to stand to represent the bits that were in the binary representation of the number. The team with the most correct numbers won. This caused pandemonium and great fun.



Students learned how to use formal, definitions, not intuitive definitions, to construct mathematical entities computationally. For example, the circle is the locus (location) of points that are the same distance from a fixed point. They studied the properties of the right triangles and were introduced to the trigonometric functions. Computing was integrated into the mathematics using Excel and the Visual Basic for Applications programming language. Simple programs in VBA were an example of another logical system that they could actually touch and use to graph mathematical relationships. Students learned to use VBA to plot equations as shown below.

This is an example of integrating computing into the mathematics

```
(67/73)=
0.917808219178082191780821917808219178082191780821917808219178082191780821
  917808219178082191780821917808219178082191780821917808219178082191780821
  917808219178082191780821917808219178082191780821917808219178082191780821
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  917808219178082191780821917808219178082191780821917808219178082191780821
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  91780821917808219178
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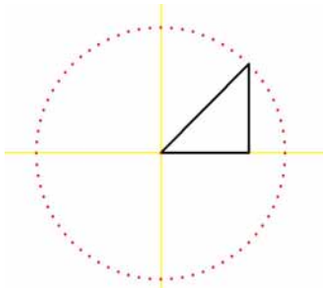


Circle and the Right Triangle

pedagogy that eliminates the graphing calculator. Since almost all schools will have computers for each student, these tools will be available to them. Students must learn to program and to solve problems with mathematics, which will yield a greater understanding of the concepts. Using programming to teach mathematics forces the use of procedures in mathematics.

There were different levels of understanding among the 43 students, but they were all in one class, 6th grade through 11th grade. Dr. Oscar H. Criner, Professor of Computer Science, and 8 student mentors from the College of Science, Engineering and Technology worked closely with the middle and high school students giving them a deeper understanding of concepts of computing, mathematics, science, and engineering. Some of the most powerful lessons for young students are in activities designed to enrich and expand their learning through active practical exercises in problem solving.

This summer, the program focused the integration of computing with mathematics, science, and engineering. The program enchanted students by teaching computing and STEM using (1) MS Office Excel VBA and (2) visual programming languages such as “MIT APP Inventor 2” for mobile devices.” The students attended workshops and laboratories where they participated in a world of constructing computers and software that collect data, computing results, and display graphics while learning mathematical skills and data analysis.

This program uses games in creative ways to demonstrate reasoning and for developing a fundamental understanding of logical systems. Of particular interest in this program is the effect of gaming upon the student’s academic performance. Our research program is directed toward understanding the effects of game-playing on the reading, reasoning, mathematics, and problem solving capabilities of students.

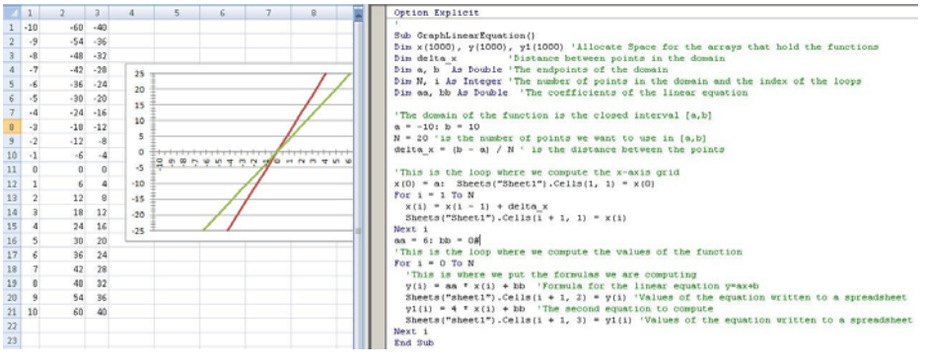
Our program nurtures and cultivates students, improving their comprehension of academic subjects by taking advantage of their proficiency in the logical processes developed through their gaming experience. Students are actively involved in a variety of games. We believe that students who are exposed to games, their structure, and strategies at an early age are able to see the relationships of logical structure in academic subjects.

The middle school is a critical juncture in the education pathway of students. In a short time they will go on to high school with tools they have learned in the STEM Enchantment programs in computing and mathematics. This program is a small prototype where we demonstrate to students the full view of logic and logical systems, as they have already experienced in gaming; and we are developing a prototype pedagogy that could be widely used to improve the academic performance in mathematics and science of children beginning in middle school. We offer after school and Saturday Academies in the fall and spring to keep the students connected with the program and reinforce their learning.

Since the trend in education today is to introduce more advanced concepts and subjects into schools at a lower level, the College offers faculty development programs and quality improvement programs to assist schools in integrating computing and advanced concepts into their pedagogy and curricula for mathematics and science. The College of Science, Engineering, and Technology is committed to increasing the number of students in STEM generally, but seeks to address the critical issues of the study of the fundamental sciences and mathematics as they are the foundation of all engineering and technology.

OSCAR H. CRINER, Ph.D.
Professor of Computer Science
Interim Associate Dean

Plotting straight lines



```
Option Explicit
'
Sub GraphLinearEquation()
Dim x(1000), y(1000), y1(1000) 'Allocate Space for the arrays that hold the functions
Dim delta_x       'Distance between points in the domain
Dim a, b  As Double 'The endpoints of the domain
Dim N, i As Integer 'The number of points in the domain and the index of the loops
Dim aa, bb As Double  'The coefficients of the linear equation

'The domain of the function is the closed interval [a,b]
a = -10: b = 10
N = 20 'is the number of points we want to use in [a,b]
delta_x = (b - a) / N ' is the distance between the points

'This is the loop where we compute the x-axis grid
x(0) = a:  Sheets("Sheet1").Cells(1, 1) = x(0)
For i = 1 To N
  x(i) = x(i - 1) + delta_x
  Sheets("Sheet1").Cells(i + 1, 1) = x(i)
Next i
aa = 6: bb = 0#
'This is the loop where we compute the values of the function
For i = 0 To N
  'This is where we put the formulas we are computing
  y(i) = aa * x(i) + bb  'Formula for the linear equation y=ax+b
  Sheets("Sheet1").Cells(i + 1, 2) = y(i) 'Values of the equation written to a spreadsheet
  y1(i) = 4 * x(i) + bb  'The second equation to compute
  Sheets("Sheet1").Cells(i + 1, 3) = y1(i) 'Values of the equation written to a spreadsheet
Next i
End Sub
```

National Science Foundation

Research Infrastructure in Science and Engineering Summer Research Program

The National Science Foundation Research Infrastructure in Science and Engineering Program in the College of Science, Engineering and Technology recruited 8 students (4 rising senior high school students and 4 undergraduate students) to work with investigators for 10 weeks during the summer 2015. The Summer Research Program was held in the College of Science, Engineering and Technology from Monday, May 26, 2015 thru Friday, August 7, 2015.

Students from DeBakey High School for the Health Professions, Houston, Elkins High School, Missouri City, Dulles High School, Sugarland, the University of Texas-Austin, and Texas Southern University participated in the summer program.

Each student received hands-on training in principles, instrumentation, and techniques, and participated in laboratory meetings to formally/informally discuss research and current literature related to research topics. The participants received career planning and guidance on how to apply to research programs. Each student submitted a written report at the end of the summer program detailing the research in which they participated, and how the experience has affected their plans for the future. The participants also submitted 8 manuscripts for publication. Two manuscripts from previous year's program have already been accepted for publication in peer-reviewed journals.

The students presented their work at the COSET Summer Undergraduate Program Research Showcase on July 31, 2015. The summer trainees showcased their research on posters as well as making oral presentations to an audience comprising faculty, staff, and students.

COSET Summer Undergraduate Research Program

This summer, COSET successfully completed the third Summer Undergraduate Research Program (SURP), which was originally launched in the summer of 2013 with the primary intention of increasing enrollment of students in graduate and professional programs in Science, Technology, Engineering, and Mathematics (STEM). COSET invested substantial funding to support students and faculty mentors in order to encourage more students to participate in SURP to improve their educational success. This year, a total of 25 undergraduate students and 19 faculty mentors from 7 departments participated in SURP, a significant increase compared to 16 student participants in year 2013.

Students worked for 10 weeks in laboratories under general and managerial supervision of Drs. Hyun-Min Hwang, Yunjiao Wang, and their mentors. The participants generated high quality research data in various fields. They also attended weekly workshops developed to help them better design and conduct research projects, analyze research data with statistical tools, and effectively disseminate their findings through conference presentations and journal publications. Upon completion of the program, the students delivered poster and oral presentations and prepared manuscripts that will be published in the Proceedings of SURP 2015.

Student participants sequenced the mitochondrial genome of hawk-owl to determine their subspecies; utilized mathematical formulae to generate aesthetic musical chords; validated the usefulness of low-cost compact earth-field NMR in measuring spin properties of various substances; studied visual awareness of rivalry images using a mathematical model; simulated performance of an electromagnetic suspension system as a new concept in space exploration vehicles; investigated causes of marine accidents in the Houston Ship Channel in order to reduce human errors in the future; and conducted various other top notch innovative research projects, and obtained hands-on research experience.

Two surveys, performed at the beginning and the end of the program, show that upon completion of SURP, students are confident that they can conduct research projects themselves with minimal supervision from mentors, indicating they are well-trained. Students also felt that the SURP experience increased their aspirations toward STEM graduate programs and would facilitate their matriculation into those programs and significantly contribute to increased representation of African-Americans in STEM graduate programs, a rate that is currently lower than 5%. Overall, it is obvious that SURP provides many short- and long-term benefits for students' success in academic achievements and professional employment. SURP clearly increases retention of undergraduate students and connects them with graduate degrees.

SUMMER MARITIME ACADEMY

The Department of Transportation Studies recently hosted its sixth cohort of the Summer Maritime Academy (SMA), a five day non-residential program designed to introduce students to the maritime industry. The program also introduced students to the Maritime Transportation Management and Security degree program and scholarship opportunities at TSU. During the week, the topics of logistics, security, and the environment (vehicle emissions) were covered and students enjoyed field trips to the Port of Houston Authority and U.S. Coast Guard facility. U.S. Customs and Border Protection Agency officials also visited with students and demonstrated cargo screening techniques used to detect contraband items in cargo. Students also learned transferable skills through sessions on leadership, dealing with change, and effective communication strategies.

This year, SMA students had a rare opportunity to meet Homeland Security Secretary, Jeh Johnson at a community engagement meeting arranged by Congresswoman Sheila Jackson Lee. Secretary Johnson encouraged the students to pursue higher education and careers in homeland security.

National Summer Transportation Institute

The Center for Transportation Training and Research (CTTR) conducted the National Summer Transportation Institute (NSTI) in Houston at Texas Southern University and at Lamar State College, Port Arthur Texas. TSU's program was held from June 15 – July 3, 2015 with twenty students participating in the program.

Mr. Khosro Godazi shared the purpose of NSTI with students and parents on Orientation Day. The focus is to provide awareness to middle and high school students particularly minority, female, and disadvantaged youth about transportation careers, and to encourage them to consider transportation related courses of study in their higher education pursuits.

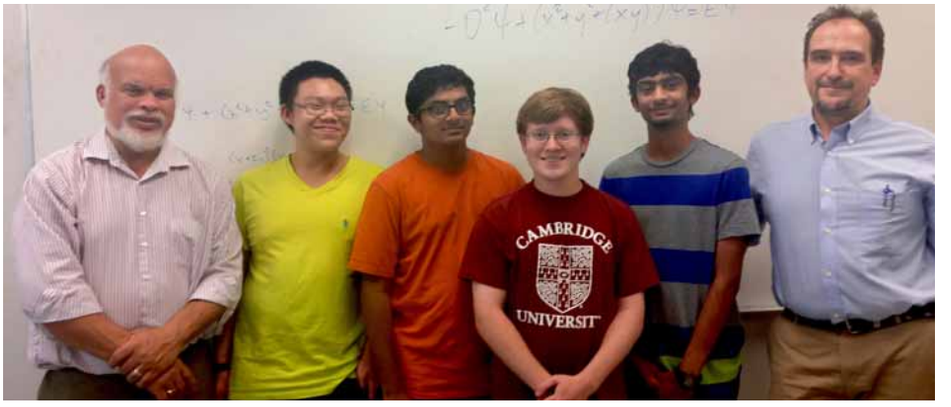
During the three weeks spent at TSU, students were involved with many hands on experiences in science and technology such as: Bridge Design, Solar Energy, GIS, and Traffic Signal concepts. Students had four exciting field trips to NASA, Houston METRO, the Port of Houston, and the Houston Galveston Area Council.

During the closing ceremony, students presented their topics and received a certificate for their accomplishments. Parents and a guest speaker from the Texas Department of Transportation participated in the closing ceremony. Lamar State College's NSTI program was held from July 6 – July 24, 2015 and twenty students participated in the program as well. Mr. Godazi and his staff covered the same curriculum that was conducted in Houston.

At the closing ceremony, the Mayor of Port Arthur, City Commissioners, the President of the College, TxDOT representatives, and the Director of CTTR participated.

Research Collaborative for High Achieving Houston High School Students

There are very few opportunities in Houston for engaging elite high school students interested in physics with research faculty at the various regional universities. To address this need, and to enhance the image and vitality of the Texas Southern University Physics program, for the last four years we have partnered with some of the top STEM high school students in the region, availing well qualified students the opportunity to engage in research collaborations resulting in peer reviewed publications. Accepted students must be interested in physics and have taken Advanced Placement courses in mathematics (primarily calculus) and physics. These students are pursuing college careers at the most prestigious universities. To give them a competitive edge, evidence of an active involvement in research, through a published work, may provide the impetus for being selected by these world class



institutions. Additionally, the program allows the greater Houston community to better appreciate the intellectual talent and resources at TSU available to all. Students must be able to quickly grasp the relevant technical fundamentals (i.e. advanced mathematics, rudimentary quantum mechanics, advanced programming languages (i.e. Mathematica), etc.), and meaningfully contribute to the ongoing research. Although the program was not originally sponsored by any external funding agency, a current grant from the Office of Naval Research/UT-Austin provides some critical resources. The program is led by Dr. C. R. Handy and Dr. D. Vrinceanu. The first participant was Mr. Rahul Gupta (Lawrence E. Elkins High School, Missouri, City, TX) with whom one paper was published in J. Phys. A: Math. & Theo. (2014) 47 295203. Mr. Gupta is now in the Honors STEM program at the University of Texas Austin. He was

followed by Mr. Carl Marth (Dulles High School, Sugar Land, TX), who mastered the intricacies of Mathematica, despite no prior experience, and collaborated on two works: one in the Int. J. Theor. Phys. DOI 10.1007/s10773-014-2434-9; the other is an invited paper to the journal Mathematics (ISSN 2227-7390) under their special issue in "New Trends in Applications of Orthogonal Polynomials and Special Functions." Mr. Marth will attend UT-Austin in the fall of 2015 as a physics and mathematics major within the Dean's Scholar Honors Program. A new crop of students has been recruited, as noted in the photograph. From left to right are Dr. C. R. Handy, Mr. Victor Zeng, Mr. Sumanth Pisipati, Mr. Carl Marth, Mr. Vishnu Iyer, and Dr. D. Vrinceanu. A fourth student, Ms. Chintal Patel (not shown), was matched with Dr. J. Rosenzweig after expressing a keen interest in biological research. All the students are from Dulles High School in Sugar Land, TX. Students are expected to continue their research activities throughout the school year.

Calculus Now for 9th Graders

For the last six years, the Physics department at Texas Southern University has supported a summer program called "Calculus Now for 9th Graders." Any algebra-ready student, typically coinciding with a rising high school sophomore, should be able to understand the basics of calculus as applied to polynomial functions.

The objective of the two week, four hours a day, program is to convince students that calculus can be an intuitive concept, readily mastered by anyone. By convincing them of this, they are then encouraged to take Advanced Placement calculus courses in their high schools. It is a fact that any student interested in the basic physical sciences (physics and chemistry), engineering, or mathematics is at a serious disadvantage when starting college, if they have not mastered the essentials of calculus in high school. Lack of this basic knowledge will delay their college STEM graduation by several years. The program was originally conceived by Dr. C. R. Handy, Professor and Chair of Physics, and through University funds, it has now become an important component of a continuing Office of Naval Research/ UT-Austin grant. One of our first participants was Mr. Eric Van Johnson, former valedictorian at Yates High School, and now a high achieving senior at Howard University.

For the last several years, Dr. Serhiy Bobrovnyk, who holds a Ph.D. in physics from the Ukraine University, and is a Master Mathematics teacher within the HISD system, has taught the outreach courses. He is shown in the photo with some of the students; and in another with Mr. Van Johnson (who returned this year to support the program). Technical support is also provided by Dr. Daniel Vrinceanu, Associate Professor of Physics. Vital administrative coordination was facilitated by Mrs. Gertrude Florent.

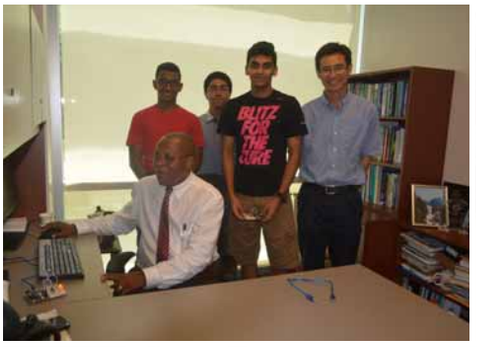
The attached photograph shows some of the participants for Summer 2015. The students that participated are: Mike Bandalt, Zeviah Bathetune, Kyra Bob, Elan Florent, Tiffany Gilkes, Joisnet Hall, Ayotunde Hinson, Delany Leblane, Javiah Leblane, Aliyah Philip, Justice Taffe, Jasmine Thomas, Jelecia Thomas, Vietcan C. Tran, and Tiffany Weir. Each received a stipend for their participation.

Engineering Summer Programs

The Engineering Department hosted high school students in three different programs this summer. Each summer program gave the department the opportunity to highlight the new Engineering degree programs and to expose high school students to careers in STEM.

First, the department launched its Research and Engineering Apprenticeship Program (REAP), funded by the United States Army Education Outreach Program, on June 15th. During this program the students worked closely with their mentor, Marcia Robin-Stoute, to investigate the effects of pollution on watersheds in the Houston Metropolitan area. The participants retrieved samples from bayous in Harris County, Fort Bend County, and Brazoria County. They then evaluated the concentration of heavy metals in the bayou water by using inductively coupled plasma mass spectrometry (ICP-MS) in the Environmental Toxicology Lab. The students concluded by presenting their findings to other members of the Engineering Department.

On July 6th, the department commenced the 9th annual TSU Pre-College Engineering Summer Program. Twelve students from various high schools gained greater insight into the fields of Civil, Electrical and Computer Engineering through hands on activities and workshops. Some activities included designing filters to capture particulate matter from the air and designing wind turbines to transfer wind energy into mechanical energy. The participants were also introduced to the discipline of biomimicry and its applications in Engineering. During the program they were charged with the task of taking inspiration from nature to solve everyday problems. The program concluded with presentations/and brochures that promoted their ideas to their peers and department staff. Final product ideas included the following: using inspiration from zebra patterns to create curtains that cool or heat homes; taking inspiration from bats to help the blind navigate busy streets; using inspiration from snail teeth to design stronger phones; and studying the de-synchronization technique used by tree frogs to make wireless networks more efficient.



Engineering Summer Program students with legendary Debate Professor, Dr. Thomas Freeman

Last but not least, Dr. David Olowokere collaborated with the Elkins High School Engineering Academy to host the department's first High School Engineering Internship program. During this program the students were introduced to Computer Engineering and participated in a hands-on Computer Engineering Design project under the direction of their mentor, Dr. Chen. At the end of the program the students demonstrated how they were able to write programs to light up their boards.

The Black Pilots of America Summer Flight Academy

On July 11, 2015, The Black Pilots of America arrived on the campus to start the 10th year of summer activities. The BPA Summer Program is an aviation program that exposes students to the field of aviation through 10 hours of flight, and 80 hours of class room studies (STEM). In addition, Vernon Baker from the TSU Aviation management program spent time with the students to discuss various careers in aviation.

The students, nine boys and two girls, were from Houston, Alabama, New Jersey, Sachse, TX, Port Arthur, TX, Atlanta, GA, and League City, TX.

2015 COSET Annual Awards Ceremony

Students, faculty, and staff were recognized and awarded for their achievements at the Annual "SCHOLOSCARS Achievement and Awards" Ceremony that was held on May 7, 2015, 11:00 AM - 3:00 PM in the Texas Southern University Science Center Atrium with graduate student, Rachel Guthrie as Mistress of Ceremonies. This year's theme "Engineering in America" paid tribute to the two newly inducted Engineering programs. Marquesha Foreman, 2015 Miss COSET, welcomed guests and all were entertained with an International Fashion Show featuring South Asian and Chinese styles modeled by COSET graduate students, Mahbuba Khan, Johora Munni, Ruksana Rahman, Mahreen Labeeba Nabi, Boya You, Bimin Mao, and Ling Lu with Moderator: Wu Ying, a song by Peijia Tang, and music by DJ Master Mixer.

Eighty-five students received scholarships this year for a total of $50,000.00. Dr. Jackson stated that, "Again the COSET awarded scholarships to every applicant."

Other student awards included: Departmental Outstanding Student Awards, Dean's Student Advisory Council Recognitions, COSET Student Ambassador Recognitions, and Special Student Recognitions. Recipients of the Distinguished Excellence Awards were: Distinguished Advisement/Mentoring Award - Dr. Graham Thomas; Distinguished Research/Scholarly Activity Award - Dr. Maruthi Sridhar Balaji Bhaskar; Distinguished Graduate Student Award - Qing Li; Distinguished Undergraduate Student Award -Reese Selman; and Distinguished Staff Award -Dolly Spencer, M.Ed.

Presentation of awards ended with the Dean's Leadership Award for Exemplary Service in Student Advisement - Evangeline Pearson. All faculty and staff who participated in the Annual Faculty/ Staff Campaign were recognized for contributing a record $26,132.00, with a $10,000.00 endowment donated by Dr. Robert Prater, Dean of the School of Technology 1971-1984 & 1986-1993. COSET Ambassadors who helped make the campaign a tremendous success were each presented with a rose in appreciation. The celebration ended with the "COSET Family Feud Game," hosted by James Okpamen, 2015 Mr. COSET, and Mr. Jeff Shaw, followed by our traditional dancing.

COSET Excellence Awards

Distinguished Researcher of the Year: Maruthi Sridhar Balaji Bhaskar, Ph.D., Environmental and Interdisciplinary Sciences

Distinguished Advisement/Mentoring Award: Graham Thomas, Ph.D., Engineering

Distinguished Teaching Award: Mark Harvey, Ph.D., Physics

Distinguished Staff of the Year: Dolly Spencer, M.Ed., Office of the Dean

Distinguished Graduate Student of the Year: Qing Li, Environmental and Interdisciplinary Sciences

Distinguished Undergraduate Student of the Year: Reese Selman, Transportation Studies

COSET Dean's Leadership Awards

Exemplary Service in Student Advisement: Evangeline Pearson, Office of Student Services and Instructional Support

Outstanding Student Awards

Aviation Science and Technology: Tuyen Nguyen (Undergraduate)

Biology: Rachel Guthrie (Graduate)

Tommy Quach (Undergraduate)

Chemistry: Donyeil Hoy (Undergraduate) Angélica Del Carmen Jiménez (Graduate)

Computer Science: Yawei Pang (Graduate) Jamaal Roby (Undergraduate)

Engineering Technology: Franklin Waiganjo Kigwe (Civil Engineering Technology, Undergraduate) Temitope Gbaja (Electronics Engineering Technology, Undergraduate)

Environmental and Interdisciplinary Sciences Qing Li (Graduate, doctoral candidate)

Industrial Technology:
Kennita Bryant (Undergraduate)

Mathematics:
Ariel Bowman (Undergraduate)

Physics:
Peter Doze (Undergraduate)

Transportation Studies:
Peijia Tang (Graduate)
Reginald Horace (Undergraduate)

COSET Scholarship

Aviation Science Management
Lydia Ndagire
Ikemefuna Nzoiwu

Biology
Kenise Abraham
Ali Bilal
Arete Eigbe
Blessing Ezeudu
Tommy Johnson
Sharon Kwende
Breianica Masom
Shayla Morgan
Leandra Stewart
Joan Tran

Civil Engineering Technology
Kelen Shaw

Computer Science
Omoikhefe Eboreime
Qianlong Lan

Electronics Engineering Technology
Lyton Atinga
Temitope Gbaja
Samuel Kanu

Environmental and Interdisciplinary Sciences
Demilade Adisa
Sharmila Bhandari
Sai Snith Chittampally
Matthew Fiala
Shruti Lakkaraju
Elvedina Mansoor
Loretta Olamigoke
Olufunmilayo Owopetu

Transportation Management
Liu Ling
Pengfei Liu
Bimin Mao
Johora Munni
Damilola Orehin
Peijia Tang
Wu Ying
Boya You

COSET Faculty and Staff Scholarship

Aviation Science Management
Othneil Drew
Blair Ogujiofor
Najib Lawal San

Biology
Chioma Anugwom
Toia Bennett
Ashley Burhama
Luis Colon Gonzalez
Curtis Harrell
David Igwegbe
Emem Iwatt
Reginald Johnson
Kwadwo Osei
Irhirhi Ovwe
Tommy Quach
Chibueze Ezeudu
Dayana Abdullah-Smoot
Sandra Babatunde
Celestine Obinna

Chemistry
Michelle Bessiake
Jasmine Daniels
Keilon Robinson
Stephanie Santos
Christian Sewell-Cortez
Alexander Torres
David Utaegbulam
Victoria Ubanyionwu

Civil Engineering Technology
Aminata Dicko
Ibrahim Saber

Computer Engineering Technology
Christopher Cockrell
Simone Holmes
Ja'Vonn Liner
Margaret Zamora

Computer Science
Daniel Olubummo
Raymond Waites
Sanjeev Rayamajhi
Richard North

Electronics Engineering Technology
Erin Adams
Lawrence Ike
Paul Godfrey
Zhonguei Wang

Environmental Toxicology
Segun Adelamke
Habibur Howlider
David Ijoni-Animadu
Bo Wei

Maritime Transportation Management and Security
Clydie Donahoe

Mathematics
Eniola Bankole

Joseph Flowers Scholarship

Aviation Science Management
Ashleigh Vernon

Chemistry
Jericho Johnson

Civil Engineering
Enjoli Williams

Civil Engineering Technology
Franklin Kigwe

Computer Engineering Technology
Olanrewaju Oluleye

The Taylor Award Scholarship in Mathematics

Kevin Harris, Senior
FranChell Davidson, Junior
Donnell Phillips, Sophomore

2014 Distinguished Alumni Award

Corey Shepard, B.S. (Aviation Science and Technology)
Pilot, United Airlines, Houston, Texas

Corey Shepard started flying airplanes in the mid 90's while attending Sterling Aviation Magnet School in Houston, Texas. He later enrolled at Texas Southern University majoring in Airway Science. He was a Frederick Douglass Honors Scholar and a Magna Cum Laude 2002 graduate.

Bruce Matson, D.D.S. (Biology)
Dentist, Houston, Texas

Dr. Bruce Matson is a native Californian who won all-district basketball and football awards in Los Angeles. His undergraduate degree is in Chemistry and Biology from Texas Southern University and he received his Doctorate of Dental Surgery in 1989 from the University of Texas Dental Branch in Houston, Texas.

Katoria R. Tatum-Gibbs, Ph.D. (Chemistry)
BASF Chemical Company, Research Triangle Park, North Carolina

Katoria R. Tatum-Gibbs, Ph.D. is an Agricultural Chemist III at BASF-The Chemical Company. Katoria began her collegiate journey as a Tiger at Texas Southern University where she earned a B.S. in Chemistry in 2004. Katoria was in the inaugural cohort of science majors that graduated from the Louis Stokes Alliance for Minority Participation scholarship program.

Michael Hancock, M.S. (Computer Science)
Consultant, Houston, Texas

Michael Hancock graduated from the Computer Science department at Texas Southern University with a BS degree in 1985 with Magna Cum Laude honors, and then from the University of Southern California with a MS degree in Software Engineering. He is a business executive and entrepreneur with a passion for creating results. Michael's background includes being an accomplished computer scientist, musician, and core marketing and business management specialist.

Enefiok Ekwo, B.S. (Engineering Technology)
Programmer Analyst, BMC Software Inc., Houston, Texas

Enefiok Ekwo received his Bachelor of Science degree in the field of Electronics Engineering Technology in 2001 from Texas Southern University. After graduation, Enefiok's passion for education and innovation lead him to giving back to the TSU community as an Alumni and member of the ELET Advisory Board. In 2000 he was hired as a Programmer Analyst at BMC Software, Inc. where he has received numerous Executive and Vice Presidential awards due to his innovative work with the company.

Shawn E. Simmons, Ph.D. (Department of Environmental and Interdisciplinary Sciences)
Exxon Mobil Corporation, Houston, Texas

Dr. Simmons has a B.S. in Petroleum Engineering from the University of Oklahoma, a M.S. in Environmental Engineering from Rice University, and a Ph.D. in Environmental Toxicology from Texas Southern University. Dr. Simmons has worked for Exxon Mobil for 14 years. She received many accolades during her undergraduate years including the Black Engineer of the Year - Student Leadership Award, Miss Black University of Oklahoma, and the Volunteer Spirit Award from General Motors Corporation.

Yotarsha Barker, B.S. (Industrial Technology)
Educator, Houston, Texas

Yotarsha Barker is a business owner as well as an educator. She received her Bachelor of Science degree in Architectural Construction in 1999 from the School of Technology. Yotarsha is also pursuing her M.S. in Transportation Studies. Yotarsha enjoys building and designing environments for the future generations.

Jack Hatton, M.S. (Mathematics)
Houston Community College - Northeast, Houston, Texas

Jack Hatton is a mathematics instructor at Houston Community College-Northeast. He received both his Bachelor's and Master's degrees in Mathematics from Texas Southern University. He has been an educator for more than twenty-five years. Jack began his career in education as a math teacher in the Houston Independent School District at Stephen F. Austin High School where he taught for eleven years. In 1994 and 1998, Jack was named S.F. Austin Teacher of the Year.

Jerald Rennard Watley, B.S. (Physics)
Geophysical Processor, TGS, Houston, Texas

Mr. Watley graduated from Texas Southern University in May 2012 with honors, Magna Cum Laude. A month prior to graduation, Jerald was offered a position as a Processing Technician at TGS, a Geophysical Service Company. He has been there for 2 ½ years and is currently working as a Geophysical Processor. After graduating from Grambling State University Laboratory High School in 2008, he was offered nearly $100,000 in scholarships.

Ruben Howard, Ph.D. (Transportation Studies)
Dean of Transportation, Distribution, and Logistics
City Colleges of Chicago's Olive-Harvey campus, Chicago, Illinois

Dr. Howard holds a Ph.D. in Business from Capella University, M.S.B.A in Business Administration from Texas A&M University, M.S. in Transportation Management from Texas Southern University, and a B.S. in Airway Science from Jackson State University. During his studies at Texas Southern University, Ruben worked as graduate research assistant in the Center for Transportation Studies.

Aviation Science And Technology

Six Texas Southern University, Aviation Science students participated in the fourth annual Hobby Fest and competed for the Allen T. Johnson Memorial Scholarships. Students had to complete a research paper on topics that were provided by the scholarship committee and present their findings on April 10, 2015, at the kick-off event for Hobby Fest. The winners were announced shortly after the presentations; Jesse Soto, Lydia Ndagire, Delecia Holmes, Onyekachi Nwaokolo, and Micah Harper. Mr. Harper is a four time recipient of the Allen T. Johnson Memorial Scholarship and is the only student to have done so since the inception of the scholarship. Scholarships were presented on Saturday April 11, 2015, at Hobby Fest Houston.

Ms. Delecia Holmes went to Oklahoma State University and presented their paper at the Education Symposium held annually at Oklahoma State University in Still Water, OK. The topic was evaluating the Effectiveness of the Aviation Science Management Degree at Texas Southern University.

Aviation Science Management student Anthony Fathabadi was accepted for an internship with the Federal Aviation Administration (FAA) in Washington, D.C., in the office of the Deputy Administrator for Flight Safety. Mr. Fathabadi graduated in December 2014, and was offered a permanent position with the FAA in January 2015. Anthony is currently a Program Specialist in the FAA office. Aviation Science Management student Micah Harper has also been accepted for an internship with the Federal Aviation Administration in Washington, D.C., in the office of the Deputy Administrator for Flight Safety. Mr. Harper is the second Aviation Science student to receive such a prestigious internship with the FAA.

Mr. Vernon J. Baker participated in the “Bite of Science Roundtable Discussion” providing teachers with information about local STEM careers, industries, the challenges they are facing, and opportunities in the state that they might not know exist. The discussion was hosted by Texas Southern University College of Education and the Center for Excellence in Education on February 24, 2015.

Biology

The Department of Biology at Texas Southern University is the largest and an integral academic unit within the College of Science, Engineering and Technology. The Department of Biology serves to advance the understanding and appreciation of biology, while encouraging critical thinking and experiential learning. We engage students in quality education, through comprehensive teaching and research at the undergraduate and graduate levels. Our faculty actively engages in research that advances knowledge in life science while providing service and outreach to the larger community to fulfill relevant societal needs.

The Department of Biology houses approximately 685 declared majors in Comprehensive, Pre-Health, and Pre-Nursing tracts and is a major academic service unit providing science credit requirements for non-biology majors. Additionally, biology is the third most requested major among incoming freshmen and transfer students.

The Department of Biology houses the Joint Admission Medical Program and Early Medical School Acceptance Program. These programs serve economically disadvantaged students to better prepare them for admission to medical schools. Several students have availed these opportunities to get into medical schools in 2014-2015.

The department had 46 graduates for the Fall 2014 Commencement (45 Undergraduate and 1 Graduate) and 46 graduates for the May 2015 Commencement Programs (38 Undergraduates and 8 Graduate). For this combined period, 12 undergraduates achieved cum laude honors status, with 6 earning magna and 1 summa cum laude. Additionally, 4 new graduate students were admitted for the 2014-2015 academic year; and 41 total applications have currently been reviewed for admission for the Fall 2015 Semester.

Chemistry

Six of Texas Southern University's Louis Stokes Alliance for Minority Participation (LSAMP) scholars attended the "2015 Emerging Researchers National (ERN) Conference in Science, Technology, Engineering and Mathematics (STEM)" that was held in Washington, D.C. February 19-22, 2015. The LSAMP scholars were accompanied by Dr. Bobby Wilson, Principal Investigator of the Texas Southern University's Houston Louis Stokes Alliance for Minority Participation and Ms. Michelle Tolbert, LSAMP Program Coordinator, who served as chaperons. Students were also able to attend the various seminars, workshops, and exhibitors' booths.

Donyeil Hoy, Senior chemistry major and an LSAMP scholar made an oral presentation at the Texas Academy of Science meeting hosted by the University of Incarnate World in San Antonio, Texas on March 6-8, 2015. Also, Mr. Hoy has been accepted into the Ph.D. program in the Department of Chemistry at Purdue University with full fellowship for 5 years.

Dr. Bobby Wilson and LSAMP Scholar, Xien Thomas, a junior computer science major, visited Northwestern University to attend the "Introduction to Graduate Education at Northwestern Days (IGEN) April 22-24, 2015. Northwestern University funded the entire trip for Dr. Wilson and Xien Thomas. Three LSAMP scholars from the department, Donyeil, Hoy, Tracey Taylor, and Raven Reed, presented at the American Chemical Society conference held in the Mile High City, Denver, CO, on March 22-26, 2015. The LSAMP program and ACS funded the students. Dr. John Sapp invited all chemistry majors to attend the workshop given by the American Chemical Society's Women Chemists of Color Program at the University of Houston on "Achieving Success in the Workplace" on March 5, 2015.

The department is developing a computational chemistry research program for undergraduate students. This course will provide a "hands-on" approach to the practical application of computers in analyzing and understanding molecular structures and chemical reactions. The department is also working on a minor option in forensic chemistry to provide sophisticated and thorough training in basic natural and social sciences with specific training in the specialized areas used in the field.

Computer Science

The current infrastructure in the Department of Computer Science (CS) has certainly helped the Department in its primary mission of preparing CS students for entry into the workforce, and graduate study. The Computer Science Department offers the B.S. degree in CS with general concentration, a BS degree in CS with computer networks concentration, a M.S. degree in Computer Science, and the Ph.D. degree in Environmental Toxicology affiliated with the Department of Environmental and Interdisciplinary Sciences.

The graduates are very well placed and recognized within the computer science professions, both at national and international levels. During the 2014-2015 academic year, over half of the graduate students received assistantships, and over 40% of undergraduate students received scholarships from the department, the college, the university, and the government. It is worthy to report that one Masters student was admitted to the Ph.D. Program in the Department of Electrical and Computer Engineering, University of Florida, after he graduated from TSU in the summer of 2015 indicative of the quality of the students and the academic programs.

During this academic year the faculty members have continuously made great efforts towards excellence in teaching, research and professional activities. Significant research achievements have been made by the faculty members working on the NSF CAREER Award of SpecMax: Spectrum Trading and Harvesting Designs for Multi-Hop Communications in Cognitive Radio Networks; the NSF CREST Award of Center for Research on Complex Networks; the Homeland Security Award of Center on Command Control and Interoperability for Advanced Data Analysis; the NSF Award of Enriching Security Curricula and Enhancing Awareness of Security in Computer Science and Beyond; and the NSF award of Cognitive Mesh in Making Cellular Networks more Flexible. Their work has been published in prestigious journals such as IEEE/ACM Transactions on Networking, IEEE Transactions on Emerging Topics in Computing, IEEE Transactions on Vehicular Technology, and the IEEE Journal on Selected Areas in Communications.

The faculty and students have presented their research at major international conferences such as the IEEE Global Communications Conference, IEEE Wireless Communications and Networking Conference, and IEEE International Conference on Mobile Ad-hoc and Sensor Networks et al. Various honors were awarded to our faculty and students.

Several faculty members serve as editors of professional journals, session chairs of international conferences, senators of the TSU faculty assembly, and members of professional societies.

Engineering

The Department of Engineering at Texas Southern University offers degree programs in civil engineering, and electrical and computer engineering that emphasize hands-on, active learning and a tradition of high-quality research activities. The Electrical and Computer Engineering program emphasizes educational programs that combine theory with practice. Whether students want a broad understanding of electrical engineering, or want to place specific emphasis on interests like computers, telecommunications and signal processing, or electronics, the program offers the education that sparks great careers.

Electrical and computer engineers create devices and technologies that affect all aspects of our lives. TSU student and faculty researchers work on groundbreaking technologies that deal with the most critical problems facing society. Our graduates will fit well with today's diverse, global environment, and they are able to adapt to new and shifting technologies, in whatever career path they choose to pursue.

The civil engineering program provides the knowledge, skills, and tools for an engineering career or advanced study in civil engineering. Students take a 126 credit hour plan of study to earn the bachelor's degree. Graduates are prepared to take the Fundamentals of Engineering examination which is the first part of their subsequent licensure as a professional engineer (PE). The program provides a broad based civil engineering curriculum in structures, geotechnical, water resources, environmental, and transportation engineering. TSU's Civil engineering program features a two-semester co-op component. This ensures that students are equipped with strong familiarity with real-life practice before they graduate. In addition, the program is designed to assist industries and government agencies through the application of civil engineering knowledge and an understanding of infrastructure needs and problems; developing research programs with measurable results for implementation and with the expectation of improving the quality of life and economic well-being of the community.

The Engineering Department received a $400,000 Targeted Infusion Grant from the National Science Foundation to support the engineering programs.

Environmental and Interdisciplinary Sciences

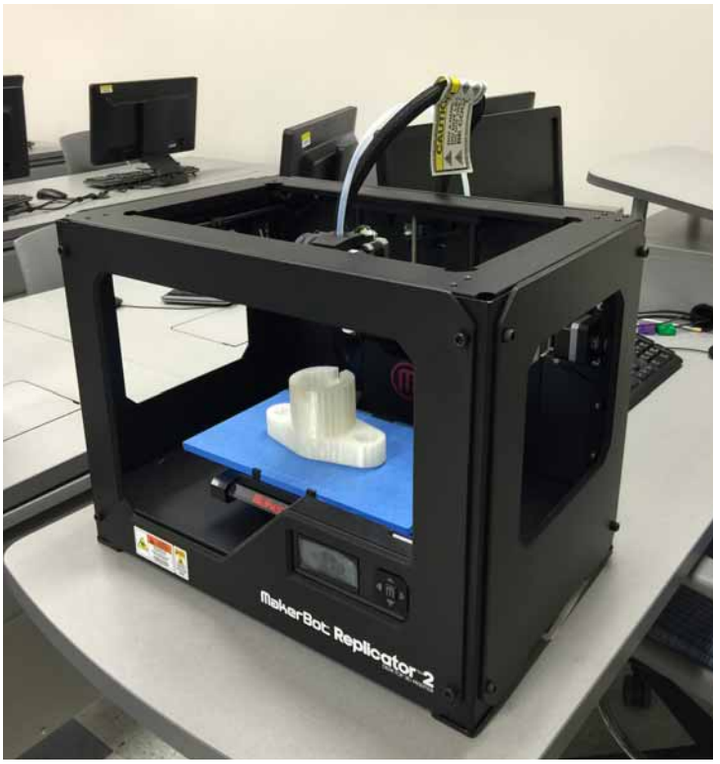
The Department of Environmental and Interdisciplinary Sciences had a very productive academic year in 2014-2015. EIS faculty have been awarded: Carnegie African Diaspora Fellowship (Dr. Yakubu), a Society of Toxicology travel award (Dr. Yakubu), 2 patents (Dr. Bhaskar), 1 book chapter (Dr. Bhaskar), 4 extramurally funded grants (Drs. Bhaskar, Hwang, and Rosenzweig), hosted international visiting scientists (Drs. Yakubu and Rosenzweig), published 3 peer-reviewed manuscripts (Drs. Bhaskar and Rosenzweig), published 4 conference proceedings, 23 abstracts in conference meetings, 5 invited lectures (Drs. Yakubu, Bhaskar, and Rosenzweig).

In addition to our environmental toxicology journal club and seminar series value added programming, students also benefitted from increased financial support in the way of 17 Title III and 4 NSF RISE supported Fellowships for our Ph.D. students. Additionally, students are supported through faculty NSF RIA awards, Department of Transportation awards, and USDA awards.

The department has experienced a 30% increase in enrollment during the past academic year and continues to attract high quality applicants to its Ph.D. and M.S. programs in environmental toxicology. Students within the Environmental Toxicology program also have access to a both a full-time technician during regular business hours as well as a part-time laboratory technician in the evening hours to assist them with data acquisition.

Importantly, the department has responded to an expressed student need for a dedicated computational facility by creating a Geographic Information Systems (GIS)/ computational lab that consists of 15 PC computers with 16GB RAM and 1 TB hard drive, a smart board, geospatial software such as ESRI-Arc GIS, ERDAS Imagine, ERDAS ER Mapper, MINITAB, Google Earth and Google Earth Pro in addition to 4 MACs. The aforementioned sophisticated software will support student remote sensing and (GIS)-related research, special topics courses in GIS, and eventual GIS certificate and environmental science undergraduate programs. The lab's research activities will promote collaboration with industry, government, and other universities. Undergraduate (Geology) and graduate students involved in remote sensing and GIS research will utilize the facility, which will also be open to all Environmental Toxicology graduate students for their other computational needs.

Industrial Technology



The primary mission of the Department is to offer programs of study designed to prepare students as “management-oriented technical professionals” who have practical knowledge, competencies, skills, and training to serve and function in the Industrial/Manufacturing Enterprise System. In pursuing this mission, the Department seeks to prepare Industrial Technologists and Technical Managers for career opportunities in the construction, communications, and manufacturing industries.

The Department of Industrial Technology offers the Bachelor of Science degree in Industrial Technology in which students have two program options to select from (Construction Technology or Design Technology). Students majoring in Industrial Technology are not required to declare a minor. The Construction option requires 122 semester hours and the Design option requires 120 semester hours to complete graduation requirements.

The Department has an active advisory committee that met two times during the 2014-2015 academic year. This committee is composed of technical professionals, alumni, and faculty. The committee made several recommendations relative to curricular enhancements and student internships.

In addition, Ms. Yotarsha Barker, alumnae of the Department and advisory board member expressed an interest in working closely with faculty and students in managing the American Design Drafting Association student chapter.

In March 2015, the Department faculty met with Mr. Marvin Carolina and Ms. Renae Richard of J. E. Dunn Construction Company to discuss the establishment of a student internship training program during the upcoming semester.

The Department has 2 fully-equipped computer-aided design laboratories consisting of the latest graphic computers, printers, plotters, and smart boards. Recently, the Department of Industrial Technology purchased two 3D printers to enhance learning experiences for design majors. In addition, the construction laboratory was enhanced with the purchase of a mobile dust-collecting system along with woodworking materials to provide hands-on experiences for construction majors.

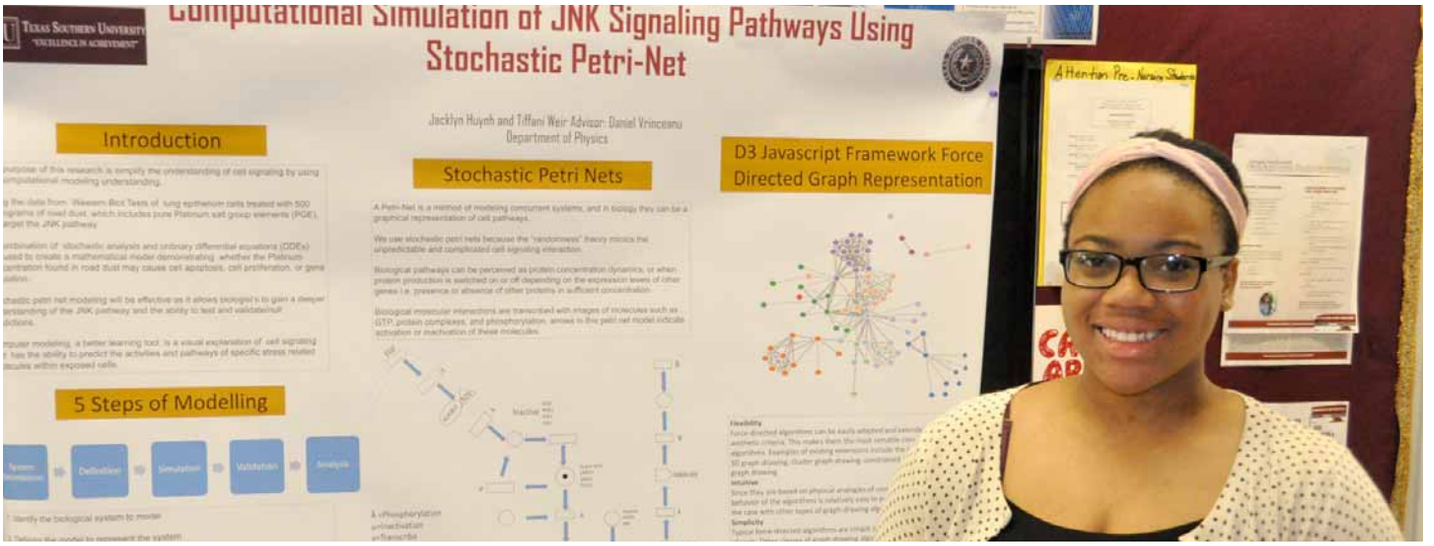
Mathematics

The 2014 - 2015 Academic year was another great year for the Department of Mathematics. Producing high quality graduates continues to be a top priority of the Mathematics Department; and in this connection one might mention that Valerie Tolbert and Marquesha Foreman graduated as valedictorians for the university in December 2014 and May 2015 commencements respectively. FranChell Davidson, Marquesha Foreman, Kevin Harris, Donnell Phillips, Autumn Pitre, and Valerie Tolbert were awarded various prestigious student awards. Moreover, during the 2014 - 2015 academic year, the department served around five thousand students, offered around 150 courses, and graduated six mathematics majors.

The Department of Mathematics developed several new mathematics core curriculum courses and these new courses were offered during the Fall 2014 semester. Moreover, Jack Hatton, a professor of mathematics at Department of Mathematics, HCCS-Northeast, was recognized as a mathematics department distinguished alumnus. Some more highlights of faculty and student accomplishments are as follows: Dr. Chilakamarri, Dr. Griesinger, Dr. Holmes, Dr. Nehs, Dr. Taylor, Dr. Wang and Dr. Williams have published their papers in peer-reviewed journals. Several faculty members gave presentations at local, regional workshops or conferences. Drs. Chilakamarri, Holmes, Kazakos, Obot, Saydam, Wang, and Williams participated in submission of grants. Drs. Griesinger and Wang won SEED grant awards. Dr. Wang is a Co-PI on a five-year funded DHS grant. Mr. Udofia retired in August 2014 after 37 years of service. Drs. Maruthi Bhaskar, Kiran Chilakamarri, Parag Lala, Serpil Saydam, Richard Sharp, Jahmario Williams, and Lucian Zidaru gave departmental research seminars. Drs. Evans and Holmes and the members of the Society of Urban Mathematicians (SUM) Student Organization attended the Seventh Annual Iowa Mathematical Field of Dreams Conference.

Unfortunately, the Department of Mathematics lost one faculty member, Dr. Kiran B. Chilakamarri, in the middle of the Spring 2015 semester. Dr. Chilakamarri, Associate Professor of Mathematics, had been at TSU since 2004 and had two Ph.D.'s one in mathematics and the other in aeronautical and astronautical engineering, from the Ohio State University. He worked in the areas of graph theory, combinatorial mathematics, rotating stratified fluids, strength of materials, and metal fatigue and random vibrations. Dr. Chilakamarri published over 31 research papers in the area of mathematics and engineering.

Physics



The Department of Physics has continued to make great strides in consolidating its presence as one of the leading producers of African/ Black American B.S. Physics recipients in Texas. Since 2010, TSU-Physics has produced 20-50%, of the State's production of B.S. Physics degrees by African/Black Americans. In December 2014, Mr. Eric Wilson (NAVY veteran) joined this elite group.

Presently, the TSU-Physics program is part of the Texas Physics Consortium (TPC) comprised of seven other physics departments across the State, including that at Prairie View A & M University. These other programs are all part of the Texas A & M University System (TAMU). Accordingly, beginning in 2016, the official TPC physics diploma will bear the seal of the "Texas A & M University System," in addition to the seals and presidential signatures of all six participating programs. Therefore 100% of the African American Physics programs in Texas are now part of the Texas Physics Consortium.

Presently, there are 18 physics majors, of which 10 have already taken TPC third year physics courses. Most of these will graduate within the next 18 months.

The Health Physics Program has also improved, having 6 students currently enrolled and benefiting from upgraded support from the US Nuclear Regulatory Committee and the US Office of Naval Research. Past TSU physics graduates have progressed in their career. Most notable achievements were obtained by Mr. Micheal Smith (TSU-B.S. 2012), who recently graduated with the M.S. degree in Health Physics from Texas A & M University at College Station, and is presently employed by the US Nuclear Regulatory Committee and by Mr. John Metyko (TSU-B.S. 2012) who completed his M.S. in Health Physics at UT Austin, and presently works for M.D. Anderson Cancer Center as a radiation officer.

In order to enhance the research image of the Physics program, within the elite Houston high schools, a new program has been created, "TSU-Physics Research Program for Elite High School Students." The objective is to engage high school students to actively contribute in research and collaborate towards a scientific paper alongside physics faculty members.

Under the guidance of Dr. Daniel Vrinceanu, three TSU-Physics majors (Mr. Eric Wilson, Mr. Peter Doze, and Mr. Juan Amaya) won the bronze medal in the International University Physics Competition. There were 131 teams competing. Similarly, under the guidance of Dr. Mark Harvey, Mr. Ugo Ezenekwe was placed third in the student oral presentation of the 2015 meeting of the South Texas Chapter of the Health Physics Society (competing against all the elite Texas schools).

Dr. Mark Harvey received the Provost's Core Curriculum Teaching Excellence Award, the COSET Distinguished Teaching Excellence Award, and 1st place in Faculty Oral Presentation, TSU Research Week.

Transportation Studies

During the 2014-2015 academic year, the Transportation Studies Department has graduated 12 students with the B.S. degree in Maritime Transportation Management and Security, and 17 students with the M.S. degree in Transportation Planning and Management. Among our graduates, about 70% have been placed at various transportation related industries and government agencies, and 10 % have entered graduate programs to continue their education. In addition, the senior level students in our programs have successfully secured internship positions in transportation related private and public sectors such as the Port of Houston Authority, U.S. Coast Guard and AET Tankers, Inc.

The department offered various workshops, seminars, conferences, and field trips to students to enhance their learning outcomes. In Spring 2015, the Department of Transportation Studies hosted its Spring Conference on “High Speed and Intercity Rail: Connecting Texas.” The conference attracted over 100 attendees and received great feedback. We also offered a series of seminars on Homeland Security for our newly awarded Department of Homeland Security Scientific Leadership Award program.

In Fall 2015, students attended the Breakbulk Annual Conference, Transportation Research Board (TRB) annual meeting, ITE annual conference and Port of Houston Field Trip. All these activities provided our students with opportunities for networking with transportation professionals and increased the visibility of the transportation programs at TSU. Most importantly, the department offers Research Assistantship opportunities to both graduate and undergraduate students, so that they can engage in research.

In the current academic year, the department won new research funding from the Department of Homeland Security in collaboration with the Department of Computer Science and the Department of Mathematics at TSU. Dr. Lei Yu won a new grant of $120,000.00. from the Texas Department of Transportation.

Actually, 100% of the tenured/ tenure-track faculty members have received several external grants through internal and external collaborations, that provide research assistantships to 22 graduate students and 8 undergraduate students.

In addition, scholarships sponsored by the Port of Houston Authority are provided to undergraduate students on the basis of outstanding academic performance. During the 2014-2015 academic year, 19 undergraduate students received scholarships from the Department of Transportation Studies, totaling $62,000. Additionally, a high percentage of students in the department have received various external and internal awards, which is indicative of the quality of the students and the academic programs.

Maritime Senior Interning at the Port of Houston Authority

Marlin Ingram, Senior Maritime Transportation Management and Security major, interned at the Port of Houston Authority during summer 2014. Marlin worked in the Department of Health, Safety, Security, and Emergency Management. As an intern, Marlin received “real world” insight into maritime and security. He was also exposed to the daily operations of other business partners at the Port of Houston Authority. Capt. Marcus Woodring, a TSU Maritime Industry Advisory Board member and strong supporter of the Maritime program served as Marlin’s supervisor and mentor for the internship.

Breakbulk Conference

Ten TSU undergraduate Maritime Transportation Management and Security majors and graduate Transportation Planning and Management students attended the Jerry Nagel Breakbulk Education Day on September 30, 2014 at the Breakbulk Conference in Houston, TX. Breakbulk Education Day is a day-long series of informative sessions about the breakbulk transportation industry and its challenges. Designed to introduce the breakbulk industry to university students and industry freshmen, Breakbulk Education Day is comprised of informational sessions, technology demonstrations, and case studies explained by leading industry executives. The day is capped off with success stories recounted by recent graduates who have found jobs in the breakbulk industry, and a Career Fair, in which industry executives from leading breakbulk companies explain potential career paths to students.

Transportation Student Hired by Southwest Airlines

Abhilash Kumar has officially been hired to join the Southwest Airlines Assistant Dispatcher Team as of February 16, 2015. He was selected along with fifteen others from an extremely competitive interview selection that resulted in a mix of internal and external candidates. Abhilash currently works in Dallas, Texas as a Senior Inflight Crew Scheduler with Southwest Airlines and has been in that role since 2011. He is a TSU graduate with a Bachelor of Arts degree, and a M.S. Degree in Transportation Planning and Management. While attending TSU, Abhilash Kumar worked with Dr. Carol Lewis in the Center for Transportation Training and Research (CTTR).

Peijia Tang Receives IRF Fellowship

A second-year graduate student, Peijia Tang, received a fellowship award from the International Road Federation (IRF). She was among the distinguished class of 30 international students from 22 different countries, selected by IRF from member universities in the United States. The IRF Fellowship Program offered students an intense 9-day training in Washington D.C. this January. In this program, IRF fellows received executive leadership training on leadership skills, knowledge, insights, and advice for developing a successful career path. Peijia’s current research focuses on promoting real-time eco-driving strategies to guide autonomous vehicles to drive with less fuel consumption and emissions. She will graduate this year.

TSU Student Interns with the FAA Headquarters

TSU student Anthony Fathabadi, an Aviation Science Management major was selected for an internship with the Federal Aviation Administration (FAA) in Washington D.C. for the summer 2014. Anthony transferred to Texas Southern in Spring 2013 and has continuously excelled in his studies. He is currently working at FAA headquarters in the office of the Deputy Administrator for Flight Safety and reports to Ms. Margaret Gilligan, Associate Administrator for Aviation Safety. Mr. Fathabadi applied for the internship through The Washington Center (TWC) for internships and Academic Seminars, which is the largest academic internship program of its kind in the country.

The TWC internship program helps students bridge the gaps between college life and their professional future. Eight hundred contenders submitted an application to the TWC for the FAA internships; only 25 were selected; and Anthony was one of them. Since its inception, more than 50,000 students have benefitted from numerous internship programs. Anthony graduated in the fall 2014 commencement.

Emerging Researchers National Conference in STEM

The Emerging Researchers National (ERN) Conference in Science, Technology, Engineering and Mathematics (STEM) is hosted by the American Association for the Advancement of Science, Education and Human Resources Programs and the National Science Foundation Division of Human Resource Development, within the Directorate for Education and Human Resources. The conference is aimed at college and university undergraduate and graduate students who participate in programs funded by the NSF HRD Unit, including underrepresented minorities and persons with disabilities.

The 2015 ERN Conference in Washington, D.C. held from February 19-22 was attended by Dr. Bobby Wilson, Dr. Wei Li, Dr. Daniel Vrinceanu, Dr. Maruthi Bhaskar, Dr. Shishir Shishodia, and Ms. Michelle Tolbert from the College of Science, Engineering and Technology. Nkem Azu, NSF RISE Fellow in the Department of Environmental and Interdisciplinary Sciences made an oral presentation and received second place. LSAMP scholars, Mr. Donyeil Hoy, Ms. Raven Reed, Ms. Tracey Taylor, and Ms. Victoria Ubanyionwu, all chemistry majors, and Mr. Xien Thomas and Ms. Ayzha Ward, computer science majors, participated in the ERN oral and poster presentations. LSAMP Scholar, Ayzha Ward, a senior, took first place in the undergraduate poster competition at the ERN Conference under the Computer Science Division and Information Systems. Ayzha will receive a monetary award of $300. Congratulations to Nkem and Ayzha for outstanding presentations.

Women of Color STEM Conference

Twelve students from the Engineering Technology Department with the help of the Dean's office attended the Women of Color (WOC) STEM 19th Annual Conference (October 23-25, 2014) in Detroit, Michigan. The students joined an estimated 4000 technologists, engineers, scientists, industry professionals and other students to actively participate in workshops, diversity inclusion training, collaboration activities and a job fair. Workshop sessions attended by the students included topics on professional skills, leadership skills, professional development, communication techniques, guidelines for managing change in the workplace, and the building of successful strategic partnerships. The students experienced professionalism at its best and reveled in the opportunity to draw from the experience and advice of bright and talented professionals. The students were inspired to see the achievements and accomplishments of real women and young professionals who have now become role models.

LSAMP Students Attended NOBCChE Conference

Eight LSAMP Scholars presented posters or oral presentations at the NOBCChE conference held this year in New Orleans, Louisiana, September 23-26, 2014. The LSAMP scholars, who were selected, are as follows: Donyeil Hoy (chemistry); Olivia Madison (chemistry); Richard North (computer science); Raven Reed (chemistry); Keilon Robinson (chemistry); Xien Thomas (computer science); Victoria Ubanyionwu (chemistry); and Ayzha Ward (computer science). These students were supported by grants from the NSF. At the conference, Azyha Ward won 1st place in the undergraduate poster presentation competition and received the Colgate-Palmolive Poster Presentation Award.

Physics Students Win Bronze Medal

A team of Texas Southern University students recently competed in the University Physics Competition and won a bronze medal. Mr. Juan Amaya, Mr. Peter Doze, and Mr. Eric Wilson (Dec. 2014 graduate) are the Physics Majors that participated in this competition.

The TSU team worked on establishing the conditions under which a planet can have a stable orbit in a binary star system, where a star has 50% of the mass of the other. Dr. Daniel Vrinceanu, Assistant Professor in the Department of Physics, served as the team's Faculty Sponsor.

Physics Students Win Research Awards

Two students in the Medical Health Physics program at TSU recently received awards in recognition of the outstanding quality of their computational investigation of radiation transport in matter. Mr. Zayne Belal (left) placed first in the student oral presentation competition during the 2015 TSU Research Week. Mr. Ugo Ezenekwe (right) achieved third place in the student oral presentation at the 2015 Meeting of the South Texas Chapter of the Health Physics Society. He received a certificate and a check for $50. Both students are recipients of TSU-MHP scholarships and conduct research in a computational laboratory under the supervision of Dr. Mark Harvey (center). The U.S. Nuclear Regulatory Commission funds the TSU-MHP scholarship program.

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Invited Talks

Daniel Vrinceanu - Proton and electron hydrogen collisions for Rydberg n,l-changing transitions in the early Universe. Seminar at Department of Physics and Astronomy Seminar, Trinity University, San Antonio, Texas, October 28, 2014.

Demetrios Kazakos - Keynote Speaker at the 5th European Conference of Communications, Geneva, Switzerland, December 29-31, 2014.

Jason A. Rosenzweig - Vaccination: its Science and Socio-Political Issues, Science and Religion Discussion Group Christ the King Lutheran Church Houston, Texas, May 18, 2015.

Marian Hillar, "How to Think about Religion, Science and Ethics. From Antiquity to Modernity." Presented for Ideas Club, Houston, July 27, 2014.

Marian Hillar, "What Does Modern Science Say about the origin of Human Moral Behavior? Science Confirms Philosophy." Research Week, Texas Southern University, Houston, April 2, 2015.

Mark C. Harvey - Proton and Alpha-Particle Transport in Water at the Cellular Level using Monte Carlo Simulation Techniques. University of Texas at Austin, Texas, February 13, 2015.

Maruthi Sridhar Balaji Bhaskar - Mercury contamination and bioaccumulation in East Tennessee watersheds. TSU Research Week, Texas Southern University, Houston, TX, March 31- April 2, 2015.

Mauthi Sridhar Balaji Bhaskar - Remote sensing to map water quality. United Nations World Water Day Conference at Houston Community College – South West Campus, March 27, 2015, Houston, Texas.

Momoh A. Yakubu - Strategies for International Research Collaboration in the Biomedical Sciences, Kogi State University, Anyigba-Kogi State, Nigeria, March 3, 2014.

Yi Qi - Transportation Research, Thomas F. Freeman Honors College Seminar Series, Texas Southern University, Houston, Texas. December, 2014.

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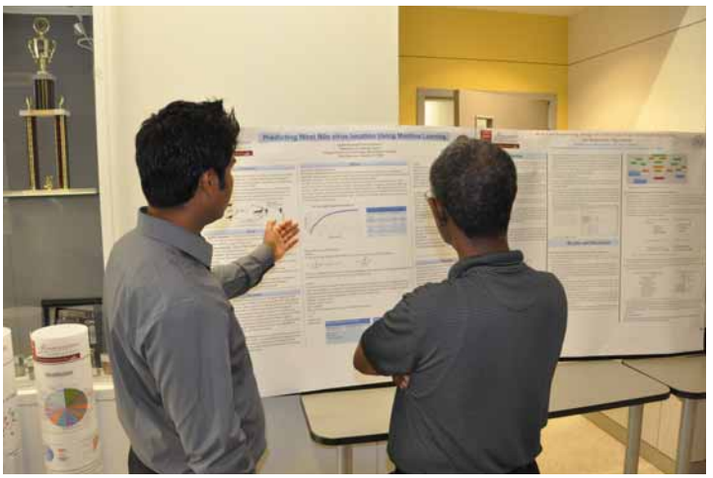
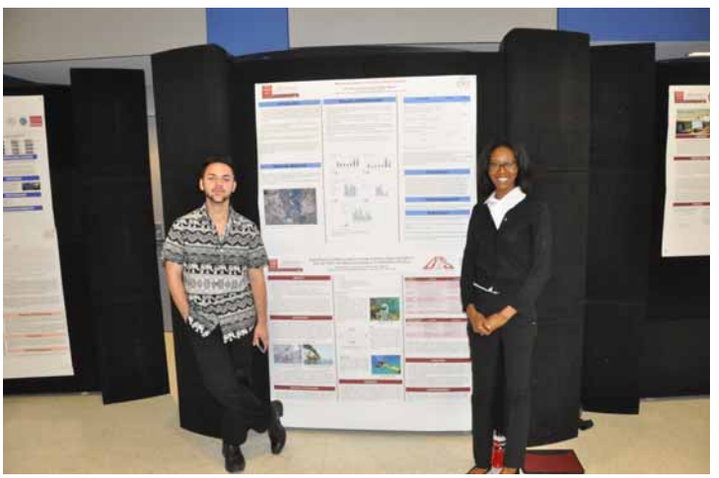
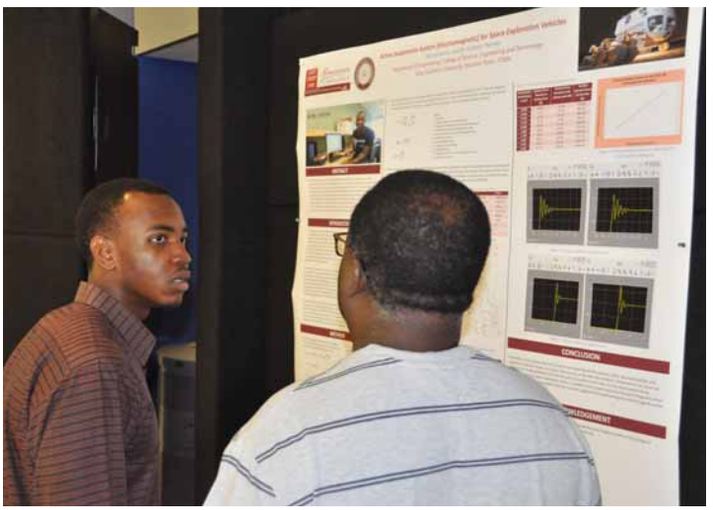
Maruthi Sridhar BB, Vincent RK (2014). Method and system for detecting phosphorus in soil from reflected light. US Patent No. 8,655,601.







Faculty and Staff

Aviation Science & Technology

Baker, Vernon, Instructor
Booker, Edward III, Visiting Instructor
Brown, Calvin, Adjunct Instructor
Edwards, Roscoe, Director, Flight Op.
Florent, Gertrude, Admin. Assistant
Hall, Tasjah, Visiting Instructor
Julien, Mathew, Assistant Chief Pilot
Lufadeju, Eziekiel, Tech. Svcs. Specialist
Olowokere, David, Prof. and Int. Chair
Wilburn, Cynthia, Office Administrator

Biology

Abdel-Rahman, Fawzia, Professor
Brown, Everton, Adjunct Professor
Cassimere, Erica, Visiting Asst. Professor
Dale, Zuri, Adjunct Professor
Dike, Cyprian, Adjunct Professor
Fadulu, Sunday, Professor Emeritus
Gardiner, Linda, Visiting Asst. Professor
Hillar, Marian, Professor
Hollomon, Mario, Assistant Professor
Jackson, Desirée, Associate Professor
Miranda, Hector C., Associate Professor
Olufemi, Shodimu-E, Assistant Professor
Pamugo, Jonathan, Adjunct Professor
Pittman-Cockrell, Helen, Admin. Assistant
Player, Audrey, Assistant Professor
Rosenzweig, Jason, Associate Professor
Shead, Erica, Adjunct Professor
Shishodia, Shishir, Associate Professor
Sodipe, Ayodotun, Assistant Professor
Sundaresan, Alamelu, Associate Professor
Williams, Warren E., Associate Professor and Interim Chair

Chemistry

Adisa, Afolabi, Adjunct Professor
Babatunde, Patience, Adjunct Professor
Clement, Jade Q., Associate Professor
Dang, Bachlien, Adjunct Asst. Professor
Deng, Yuanjian, Professor
Dooley-Renfro, Jamie, Adjunct Asst. Prof.
Ekwere, Obot, Adjunct Asst. Professor
Fennell, Pearlie M., Professor
Good, Sonya, Assistant Professor
Johnson, Delois, Admin. Assistant
McDaniels, Vera, Program Coordinator
Prince, Bruce, Visiting Asst. Professor
Saleh, Mahmoud, Professor
Sapp, John B., Professor and Chair
Tolbert, Michelle, LSAMP Coordinator
Turay, Sheku A., Adjunct Asst. Professor
Wei, Xin, Professor
Wilkerson, Daryl, Instructor
Wilson, Bobby L., Professor

Computer Science

Abdullah, Baqui, Network Administrator
Abrar, Max, Adjunct Instructor
Byrd, Antarr, Adjunct Instructor
Criner, Oscar H., Professor
Dotson, Ulysses, Adjunct Instructor
Dixon, Aericka, Sr. Admin. Asst., CREST
Ghemri, Lila, Associate Professor
Handy, Maribel, Instructor
Houston, Frank, Adjunct Instructor
Jahed, Nadareh, Admin. Assistant
Javadian, Moshen, Associate Professor
Joyner, Mackale, Adjunct Asst. Professor
Kamel, Khaled, Professor
Khan, M. Farrukh, Assistant Professor
Li, Wei Wayne, Professor and Int. Chair
Lin, Cheng Feng, Assistant Professor
Sleem, Aladdin, Associate Professor
Talusani, Pratap, Visiting Instructor

Engineering

Adebo, Phillip, Lab Manager
Afiesimama, Boma T., Assoc. Professor
Ajofoyinbo, Abayomi, Visiting Asst. Prof.
Amjadi, Zahra, Visiting Asst. Prof.
Babatunde, Patience, Adjunct Professor
Chen, Xuemin, Assistant Professor
Darayan, Shahryar, Professor
Gilkes, Kimberley, Admin. Assistant
Hall-Taylor, Janne, Adjunct Instructor
Olowokere, David, Professor and Chair
Pathak, Rajesh, Adjunct Professor
Robin, Marcia, Visiting Instructor
Saneifard, Rasoul, Professor
Thomas, Graham, Associate Professor
Wanyan, Yaki, Assistant Professor
Wolde-Kirkos, Abate, Visiting Asst. Prof.
Zhang, Yuhong, Associate Professor

Environmental & Interdisciplinary Sciences

Balaji Bhaskar, M. Sridhar, Asst. Prof.
Hwang, Hyun-Min, Assistant Professor
Mizzell, Rachel, Admin. Assistant
Muhammad, Zahid, Adjunct Professor
Qureshi, Jalaluddin, Adjunct Professor
Shishodia, Shishir, Interim Chair
Uba, Humphreys, Adjunct Professor
Yakubu, Momoh A., Associate Professor

Industrial Technology

Horner, Jessie E., Associate Professor and Interim Chair
Lewis, J. Jonathan, Associate Professor
Lott, Carl B., Assistant Professor
Nasser, Lulueua A., Admin. Assistant
Osakue, Edward E., Associate Professor

Mathematics

Azzi, Elias, Adjunct Instructor
Basharat, Mahmoud, Adjunct Instructor
Bryant, William, Adjunct Instructor
Crockett, Cher, Visiting Instructor
Davis, Melanie, Adjunct Instructor
Eakins, Nia, Administrative Assistant
Ekwo, Maurice, Visiting Professor
Evans, Joan, Instructor
Ferchichi, Jamel, Adjunct Instructor
Floyd, Quantas, Adjunct Instructor
Giles, Jacqueline, Adjunct Instructor
Glenn, Nancy, Associate Professor
Guo, Jing-Shan, Visiting Instructor
Holmes, Roderick, Assistant Professor
Jones, Bobby, Visiting Instructor
Kazakos, Demetrios, Professor
Kinfe, Biniam, Visiting Instructor
Nehs, Robert, Associate Professor
Obot, Victor, Professor
Patterson, Frankie, Visiting Instructor
Saydam, A. Serpil, Associate Prof and Chair
Stewart, Carrington, Adjunct Instructor
Taylor, Willie, Professor
Travera, Papa, Visiting Instructor
Wang, Yunjiao, Assistant Professor
Williams, Jahmario, Assistant Professor
Williams, Joel, Adjunct Instructor
Wu, Tong, Instructor

Physics

Florent, Gertrude, Admin. Assistant
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Tymczak, C. J., Professor
Vrinceanu, Daniel, Assistant Professor
Vrinceanu, Isabela D., Adj. Asst. Professor

Transportation Studies

Azimi, Mehdi, Postdoctoral Fellow, ITRI
Beverly, Paris, Adjunct Instructor
Clark, Latissha, Research Assistant, CTTR
Godazi, Khosro, Associate Director, CTTR
Goodwin, Gwendolyn, Res. Asst. Professor
Lashore, Denita, Sr. Administrative Asst.
Lewis, Carol, Professor, Director of CTTR
Lynch, Daniel, Adjunct Instructor
McGrath, Michael, Adjunct Instructor
Mckamie, Reginald, Adjunct Instructor
Morgan, Robert Jr., Visiting Professor
Puccini, Giovanni, Adjunct Instructor
Qi, Yi, Associate Professor and Chair
Qiao, Fengxiang G., Associate Professor
Rollins, Mary, Research Assistant
Simmons, Paul, Adjunct Instructor
Weatherford, Jeff, Adjunct Instructor
Williams, Ursurla, Program Coordinator
Yu, Lei, Professor and Dean
Zhao, Qun, Research Assistant

COSET ADMINISTRATION

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Evangeline Pearson
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Gertrude Florent
Administrative Assistant

TRANSPORTATION STUDIES

Yi Qi
Associate Professor and Chair

Paula Eakins
Administrative Assistant

College of Science, Engineering and Technology
Texas Southern University
3100 Cleburne Street
Houston, Texas 77004
Tel: 713 313 7009 I Email: cosetinfo@tsu.edu

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