

the EXPLORER *Newsletter*

QUARTERLY PUBLICATION OF THE COLLEGE OF SCIENCE AND TECHNOLOGY AT TEXAS SOUTHERN UNIVERSITY

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

New Engineering Programs in the College of Science and Technology

The College of Science and Technology (COST) 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 COST's STEM degree programs and a great step forward in the advancement of education for minority students," said Dr. Lei Yu, COST Dean. "These programs will contribute significantly to the workforce for civil, electrical and computer engineers, which 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, the student can work towards career goals in a meaningful job while going to school and 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 of 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.

6th Annual Open House Alumni and Partnership Luncheon

The College of Science and Technology (COST) 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 presented 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.

COST is actively encouraging students in k-12 institutions to consider STEM as a career. At each of the major events of the College there was participation from the secondary school community. We began 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 for 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 one 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 said "It feels like you are actually flying".



COST Enrollment is at Record High!

The academic year 2014-2015 brings a record enrollment to COST. The total enrollment of COST for the fall 2014 was 2062 as of October 20, 2014. This exceeded the previous record enrollment that was achieved in the late 1980s. COST 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 COST. The popularity of the field arises because of its integration with computational sciences, engineering, and technology. Health care delivery system is becoming exceedingly "High Tech." This transition to higher

technologies has been progressing for many years and the COST students are taking full advantage of it.

COST will be offering two new engineering programs in the next year. Civil Engineering will begin 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 COST are cutting edge and almost all the 55 laboratories are state-of-the-art. The students should take full advantage of the opportunities in COST.

COST Holiday Party December 4, 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

COST Student Services - 2nd Place

COST Dean's Suite - 3rd Place

Floats - Campus Participants - COST - 3rd Place

Cars - Campus Participants - COST - 3rd Place

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.

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 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 academic 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!

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 along with informing the Dean of COST, Dr. Yu, of the prominent presence of Texas Southern University involvement in the project and the exposure and experience it provided to the students actively involved in the project. 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.



National Society of Black Engineers TSU Chapter

The TSU chapter of National Society of Black Engineers (NSBE) recently attended this year's Region V Fall Regional Conference in Baton Rouge, LA. The conference provided the opportunity for chapters in Region V to come together to share their experiences. It was also an opportunity to celebrate each other and the work that we have done. As a part of NSBE's mission to succeed professionally, the conference offered professional development seminars and a career fair. This year's career fair featured companies such as, Chevron, Exxon, Google, Dow, and Burns and McDonnell.

Region V is known as the Vanguard region, and celebrates its chapters' success with Vanguard awards. This year the TSU chapter won the Texas Zone's Most Outstanding Chapter Award. The Most Outstanding Executive Board Member Award was presented to the chapter secretary, Aminata Dicko and the chapter treasurer, Simone Holmes, was awarded an academic scholarship.

This year the TSU chapter of NSBE has achieved unprecedented success and looks on to continue impacting its university and community in the years to come.

COST Faculty Enhancement Sessions

On Wednesday October 15, 2014 and Wednesday November 5, 2014, COST sponsored two Faculty Enhancement Session Series, 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 custom summer jump start sessions, provide them with the necessary knowledge to re-take 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,

COST Student Valerie Tolbert is Valedictorian of Fall 2014

The Valedictorian of the fall graduation December 2014 is Valerie Tolbert, a mathematics major and a Houston-Louis Stokes Alliance for Minority Participation (H-LSAMP) scholar. Valerie has participated in undergraduate research at Rice University and the CREST Center at Texas Southern University. Dr. Willie Taylor was instrumental in mentoring, advising, and supervision of

her research projects. Valerie has attended the "Field of Dreams Conference" for last two years hosted by National Alliance for Doctoral Studies in the Mathematical Sciences based at University of Iowa. As a result, Valerie has attained an external mentor after attending this conference.

Valerie is interested in pursuing a Ph.D. degree in mathematics.

ERN Travel Award

Donyeil Hoy, Chemistry major, received a travel award of \$1,500 for the 2015 Emerging Researchers National (ERN) conference in Science, Technology, Engineering, and Mathematics (STEM) that will be held on February 19-21, 2015 in Washington, District of Columbia. This conference is designed to help students to enhance their scientific

skills, to better understand STEM careers in a global context, and to identify international research and education opportunities. Mr. Hoy will give an oral presentation about "Atmospheric particulate matter pollution and platinum (Pt) in soil, road dust, and plants in Houston, Texas."

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 receipts 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.

Faculty Spotlight Marian Hillar

Marian Hillar, Professor of Philosophy and Religious Studies and Biochemistry / Molecular Biology, has an elaborate background in classical and humanistic education. He attended in his native Poland prestigious schools with traditions going back to the XVIth century. He earned (with summa cum laude) his M.D. and Ph.D. (in Biochemistry) degrees from the University Medical School of Danzig and studied at the Jagiellonian University (Cracow) and at Sorbonne. He also studied history of philosophy, religions, and languages. He did research and taught in Europe at the University Medical School of Danzig, Università degli studi di Camerino (Italy), and in the USA at Baylor College of Medicine and Ponce School of Medicine (Puerto Rico).

At Texas Southern University he initiated and developed an active research

and teaching program in Biochemistry and Molecular Biology especially preparing pre-professional students for their further studies. He also taught a course in Philosophy. He has received numerous extramural research grants and awards. In his research he is credited with several discoveries in biomedical sciences such as purification and translation of a messenger RNA for glutamate dehydrogenase; isolation and studies on the control of gene expression and cancer by low molecular weight peptides (deprimerones) associated with DNA (with G.L. Gianfranceschi and D. Amici); control of oxidative phosphorylation in mitochondria, and several others.

With time his research became focused on philosophy and religious studies. In 1986 he founded the Center for Socinian,

Philosophical, and Religious Studies. In 1992 he founded and edited for twenty years a scholarly journal *Essays in the Philosophy of Humanism*. This journal became now an international journal published by Equinox publishers in United Kingdom. He was a contributing editor to the philosophical monthly published in Warsaw *Bez Dogmatu (Without Dogma)*.

Professor Hillar published and edited a number of books in the field of biochemistry, theology / philosophy, and numerous scholarly articles in biochemistry as well as in philosophy and religious studies (ethics, patristic, and comparative religious studies). With Christopher Hoffman he translated for the first time magnum opus of Michael Servetus, *Christianismi restitutio*, from Latin into English in five volumes. He is recognized as a world expert on Philo of Alexandria,



Michael Servetus, and on the development and ideas of the Socinian movement in the sixteenth and seventeenth centuries, the precursor of the Enlightenment and American democracy. He is the first recipient of Texas Southern University's Presidential Achievement Medal (2010). He is a member of many scholarly societies. His most recent book *From Logos to Trinity* was nominated for the Pulitzer Prize, 2013.

Research Spotlight NASA Reduced Gravity Flight Program

Students under the direction of Dr. Alamelu Sundaresan were involved in a research project funded through NASA. The objective of the experiment was to look at the mechanism of photo activation of Psoralen with UV-A irradiation on ErbB2+ cancer cells in microgravity. UV-A irradiation was carried out with cells treated with different doses of Psoralen to see the effects on the viability and growth. Students conducted experiment in a reduced

gravity environment giving them "floating" capabilities. The project, "Effects of Psoralen Therapy on Breast Cancer Cells in Microgravity" preliminary results indirectly indicate that Psoralen treatment in microgravity increases DNA mismatches, apoptosis, and inhibits DNA accessibility in breast cancer cells. Ground based experiments are being analyzed to see if there is an increased order of magnitude efficacy with Psoralen in

microgravity compared to controls.

Another 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. Initial research was conducted using the compounds in modeled

microgravity and radiation environments. The results revealed restorative properties for immune cells exposed to benzofuran-2-carboxylic acid derivatives. Initial data analysis of samples reveals that 78 genes were differentially expressed in microgravity exposed lymphocytes compared to ground control lymphocytes. These mainly belonged to early genes, transcription factor groups, cellular homeostasis, oxidative stress reduction and adaptive response.

Staff Spotlight Marcia Robbins

Mrs. Marcia Robin-Stoute holds a Bachelor of Science degree in Civil Engineering Technology and a Master of Science in Transportation Planning and Management obtained from TSU. She has demonstrated that being dedicated, dependable, and adapting to one's working environment has proven to be an asset that has guaranteed her success in all work endeavors. She communicates effectively, has excellent organizational skills, is a people's person and possesses

great team spirit, all personal qualities that has allowed her to solve the most demanding challenges.

Mrs. Robin-Stoute works closely with the Chair of the Department in overseeing and supervising the daily operations of the Engineering Department office and she is responsible for coordinating technical activities related to the department funded projects including the preparation of grant reports and grant research. She has secured the Research and

Engineering Apprenticeship Program (REAP) research award in 2013, 2014, and upcoming 2015. Over the last 8 years she has been instrumental in the successful planning and management of the Summer Pre-College Engineering Program funded by the US Army, including the preparation of academic curriculum and budgets, and advise to undergraduate students.

As a direct result of Mrs. Robin-Stoute's proven personal development and



demonstrated commitment to enhancing research, her scope and duties were increased to include instruction in transportation related classes. Her professional associations include American Society of Civil Engineers (ASCE), National Society of Black Engineers (NSBE), Coasts, Oceans, Ports, Rivers Institute (COPRI).

Student Spotlight Marquesha Foreman



Marquesha Foreman is a native of Jennings, Louisiana where she earned her diploma in 2011 from Jennings High School and graduated with a 4.00 GPA. Her eager pursuit of academic excellence led her to furthering her education in Houston, a place filled with

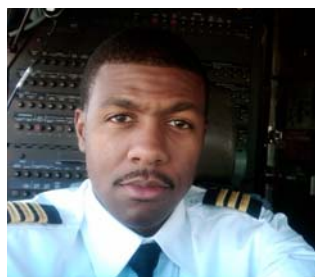
endless opportunities for a promising scholar like herself. Since Fall 2011, Marquesha has attended Texas Southern University on a full ride academic scholarship. Ms. Foreman is pursuing a degree in Mathematics coupling her studies with a minor in

Computer Science. Upon graduation, she wishes to pursue a doctorate degree in Mathematics at a prestigious institution. Marquesha's optimistic attitude allows her to remain focused and driven in which she shows through her diligent work effort.

Alumni Raves Corey Shepard

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. Corey was one of the first students from TSU to complete a pilot internship with ExpressJet Airlines. He was later hired as a pilot in 2004 by ExpressJet flying the EMB 145 regional jet. In 2006, he was

hired by Continental Airlines to fly the Boeing 737. After the merger with United Airlines, Corey decided to go into management and became the first Black Flight Manager at the Houston base for United. From 2012 to 2014 he was responsible for more than 1000 First Officers based in Houston. Recently, Corey joined the United Pilot Training department as a 737 flight instructor. He is one of 6 African Americans and 2 TSU alumni working in the 737 flight training department.



Corey lives in Houston and still volunteers his time mentoring young aspiring pilots at Sterling High School, TSU, and through the Organization of Black Aerospace Professionals (OBAP).

NEW ENGINEERING DEGREES

B.S. Civil Engineering

B.S. Electrical and Computer Engineering

For additional information, please contact:

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Student Accomplishments



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 National Science Foundation. At the conference, Azyha Ward won 1st place in the undergraduate poster presentation competition and received the Colgate-Palmolive Poster Presentation Award.

Engineering Students Attended 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 had a significant experience of professionalism and reveled in the opportunity where they were able to draw from the experience and advice of bright talented professionals. The students were inspired to see the achievements and accomplishments of real women and young professionals who have now become role models.

Maritime Students Visit Port of Houston Authority

TSU Maritime students recently visited the Port of Houston Authority and rode on the M/V Sam Houston along the Ship Channel. On the field trip, students saw first-hand some maritime related facilities along the Ship Channel and they also had an opportunity to meet with Marcus Woodring, the Port of Houston Authority's (PHA) Managing Director of Health, Safety, Security, and

Emergency Management; Mrs. Linda Clary, PHA's Maritime Education Coordinator; and Anthony Flenoy, PHA Security Officer.

The students enjoyed hearing Anthony Flenoy (TSU Alumnus, 2012) share information about his experience in the TSU Maritime program and his experience at the PHA first as an Intern and now as an employee.

Transportation Studies Students Attend Breakbulk Conference

Ten TSU undergraduate Maritime Transportation Management and Security 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.

MANDATORY FRESHMEN AND NEW TRANSFER STUDENT CLASS MEETING

COST 101 Dates

January 28, 2015
February 18, 2015
March 25, 2015
April 15, 2015

For more information call us at:
713-313-1872 or
e-mail us at:
coststudentservices@tsu.edu

TSU Science Center 158
12:00 PM - 1:00 PM

Refreshments will be Served

Scholarly and Creative Activities

Publications

Anetor, L., Odetunde, C. Osakue, E. E. (2014), Computational Analysis of the Extended Zeldovich Mechanism, Arabian Journal of Science and Engineering, DOI: 10.1007/s13369-014-1398-7.

Chen, X, L. Yu, X. Jia, and H. Gong. Analytical Procedures for Estimating Capacity of the Urban Expressway Section near Off- and On-Ramps with a Median Exclusive Bus Lane. Journal of Transportation Engineering, ASCE, Vol. 140, No. 3, 2014.

Naidu, N.V.; Arman, H.; Deng, Y.J.; Wei, X. "Preparation and characterizations of 4-amino-2-anilinyridine and its chlorodiruthenium(III,II) complex", J. Coord. Chem. 2014, 67(18), 3006-3017.

Osakue, E. E. (2014), Probabilistic Fatigue Design of Shaft For Bending and Torsion, Int'l Journal

of Research in Engineering and Technology, eISSN: 2319-1163/ pISSN: 2321-7308, pg. 370 – 386.

Oyewole, A., Sapp, J., Wilson, B., Oyewole, O., "Potential Environmental Risks from Home Healthcare-Generated Municipal Solid Waste in Texas," International Journal of Business, Humanities and Technology, Vol. 4, No 3, May 2014, pp. 6-12.

Rosenzweig JA, Ahmed S, Eunson J Jr, Chopra AK (2014) Low-shear force associated with modeled microgravity and spaceflight does not similarly impact the virulence of notable bacterial pathogens. Appl Microbiol Biotechnol. 2014 Nov;98(21):8797-807.

Wu, Y, G. Song, and L. Yu. Sensitive Analysis of Emission Rates in MOVES for Developing Site-specific Emission Database. Journal of Transportation Research Part D, Vol 32, pp. 193-206, 2014.

Meetings/Presentations

Alhassan F, Maruthi Sridhar BB. 2014. Land cover change analysis of the Buffalo San Jacinto watershed region in Texas, 14th Annual Houston Area GIS Day Conference, November 19-21, Houston, TX.

Eltayeb HA, Maruthi Sridhar BB. 2014. Land use and land cover changes in the North Galveston Bay watershed region in Texas, 14th Annual Houston Area GIS Day Conference, November 19-21, Houston, TX.

Esmaeli M, Maruthi Sridhar BB. 2014. Landsat 5 imagery of urban development in Galveston Island, Texas 1986-2011, 14th Annual Houston Area GIS Day Conference, November 19-21, Houston, TX.

Heydari S, Maruthi Sridhar BB. 2014. Analysis of temporal land cover changes in East Galveston watershed region of Texas, 14th

Annual Houston Area GIS Day Conference, November 19-21, Houston, TX.

Mosley J, Maruthi Sridhar BB. 2014. Land cover change in Greater Lubbock area, Lubbock County, Texas, 14th Annual Houston Area GIS Day Conference, November 19-21, Houston, TX.

Maruthi Sridhar BB, Peterson M, Bevelhimer M. 2014. Geospatial database to map mercury concentration in East Fork Poplar Creek watershed., 14th Annual Houston Area GIS Day Conference, November 19-21, Houston, TX.

Saah G, Maruthi Sridhar BB. 2014. Analysis of urban sprawl and its effect on urban environmental characteristics using spectral reflectance and Landsat data, 14th Annual Houston Area GIS Day Conference, November 19-21, Houston, TX.

Awards

On July 26, 2014 the research conducted under the direction of Dr. Alamelu Sundaresan laboratory at Texas Southern University was awarded the prestigious merit of "Best Poster Award 2014" in Japan. This was issued through The International Congress on Nutrition and Integrative Medicine (ICNIM). This recognition will help propel the continuation of the project "AHCC Triggers Immune Proliferation and Activation of Human Lymphocytes via Targeted Phenotypic and Genotypic Transformation."

Grants

Quantification of the Impact of a Road's Condition on Emissions (TxDOT 0-6808, \$120,000, PI: Dr. Lei Yu).

Minority Undergraduate/ Graduate Student Technical Presentation Experience at the 2014 NOBCCHE Annual Technical Conference, National Science Foundation, 2014-2015, \$81,500.

Books

Professor Marian Hillar was invited by Eerdmans Publishing Company to review the manuscript submitted for publication: Torrey Seland, ed. "Reading Philo. A Handbook of Philo of Alexandria."

Khaled Kamel and Imani Kamel (2013). Programmable Logic Controllers: Industrial Control, McGraw-Hill Professional Publishing, New York.

Theses/ Dissertation

Ziyue Li, "Feasibility Study of Using Driving Simulator to Develop Operating Mode Distributions for Emission Analysis," M.S. Research Thesis, Completed in October 2014 (Advisor: Dr. Lei Yu).

Dr. Khaled Kamel (External Advisor), Ph.D. dissertation titled "Using Wireless Communication to Enable Decentralized Analysis and Control of Smart Distribution Systems," Department of Electrical and Computer Engineering (ECE), University of Waterloo, Canada.

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HoustonChronicle.com and Chron.com

ENGINEERING/OIL & GAS

TSU has long history in science, technology education

By Jennifer Kinney
JOBS CORRESPONDENT

Education in science, technology, engineering and mathematics has become essential for continued economic prosperity in the era of global economies. The growth and development of technologies in business and industry have led to a large workforce shortfall that cannot be satisfied unless all institutions are working in sync and at full steam.

Texas Southern University has offered courses in biology, chemistry, physics and mathematics since becoming a degree-granting institution in 1954. TSU's predecessor, Houston College for Negroes, had a full complement of courses in the College of Arts and Sciences and the School of Industrial and Vocational-Technical Education by 1946. It was during this time that Herman Marion Swett applied for admission to the School of Law of the University of Texas at Austin. He was denied admission because of his race and subsequently filed suit against the state. Swett's actions prompted the Texas Legislature to form Texas State University for Negroes in 1947 and use Houston College for Negroes as the starting school.

The college has 11 departments with 11 bachelor's degrees, five master's degrees and one interdisciplinary doctor of philosophy degree. Bachelor's degree offerings are in mathematics, biology, chemistry, physics, computer science, civil engineering technology, computer engineering technology, electronics engineering technology, industrial technology, aviation science management, and maritime transportation management and security. Master's degrees are offered in biology, chemistry, computer science, environmental technology and transportation.

TSU has been dynamic in changing programs to accommodate its industrial and business constituents. The university enhanced its efforts by creating the College of Science and Technology in 1984 as one of the first institutions totally committed to science, technology, engineering and mathematics, years before the term "STEM" came into use.

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The BLS degree program in civil engineering will begin in January 2016, and the B.S. degree program in electrical and computer engineering will begin in September 2015. Both of these programs will contribute substantially to the STEM workforce of the city of Houston, the state of Texas and the nation.

According to the U.S. Bureau of Labor Statistics' 2012 projection, there were 273,000 civil engineers working in 2012, and that number is expected to grow to 322,000 by 2020. Similarly, the BLS estimated that electrical and computer engineering jobs were around 390,000 and projected to grow to 408,000 by 2022.

These job projections may be underestimated because of the fast pace of technological development, which is moving toward pervasive computing.

smart grids, ubiquitous sensors, machine-to-machine communications, controlled appliances, big data and advanced analytics. Major companies are seeking the leadership of tomorrow. TSU seeks to provide many engineering professionals for that workforce.

For more information about TSU's academics and programs, visit www.tsu.edu.