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the EXPLORER Newsletter

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

The College of Science, Engineering and Technology Annual Achievements and Awards Ceremony

Students, faculty and staff of the College of Science, Engineering and Technology were recognized and awarded for their achievements at the Annual SCHOLOSCARS Achievement and Awards Ceremony "Rewarding Excellence" that was held on April 28, 2016 in the Texas Southern University Science Center Atrium. COSET 2016 King Richard North and Queen Tracey Taylor as Master and Mistress of Ceremonies. A record number of students, 101, received scholarships this year. Dr. Desirée Jackson, COSET Dean of Student Services, stated that, "Again the College Of Science, Engineering and Technology 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. *Continued on page 2*

INSIDE THIS ISSUE

Governor Abbot Appoints Dr. Mark Harvey of Physics to Radiation Advisory Board

Governor Greg Abbot has appointed Dr. Mark Harvey, Assistant Professor, Department of Physics along with 6 others to the Texas Radiation Advisory Board for terms set to expire April 16, 2021. The board advises the state on radiation issues and reviews the rules, policies and programs to state agencies that regulate radiation.

Dr. Mark Harvey has led TSU's-Medical/ Health Physics program, placing many of our graduates in some of the most prestigious institutions such as M.D. Anderson Cancer Center and the Nuclear Regulatory Commission at Washington D.C.

This year he produced several physics graduates that will continue with this legacy either in graduate school or Medical School. Through his efforts, the Physics program is in the process of building a particle accelerator program that will contribute to Homeland Security by identifying hazardous materials at the nuclear level. TSU-Physics has a high representation of research/scholars pursuing forefront research at all levels: nuclear, computational, atomic, mathematical physics, astrophysics, etc.

The COSET family extends the warmest congratulations to him in representing our program at the highest level.

Dr. Harvey with his students at the South Texas Project nuclear power facility near Bay City, Texas

TSU HOSA & USNDA Pre-Health Leadership Conference

TSU HOSA (Health Occupation Students of America) & USNDA (Undergraduate Student National Dental Association) collaborated their efforts to bring upon the first Fall Pre-Health Leadership Conference to Texas Southern University on November 17, 2015. Over 100 students from Davis High School, University of Houston, Houston Baptist University, University of Texas in Austin, and Texas A&M University attended the conference. Students had the opportunity to obtain a HIPPA course certification, attend a test anxiety solution workshop, and networked with numerous health professionals such as physicians, dentists, and pharmacists. Furthermore, the agenda of the conference included a health professional question and answer panel, where undergraduate students were able to ask questions with regards to admission into professional school, and seeking shadowing opportunities.

COSET Annual Achievements and Awards Ceremony

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Distinguished Excellence Award recipients were: Dr. Hyun-Min Hwang - Distinguished Advisement/ Mentoring Award, Dr. Xuemin Chen Distinguished - Research/Scholarly Activity Award, Dr. Jahmario Williams - Distinguished Teaching Award, Dr. Momoh Yakubu - Distinguished Professional Service Award, and Ying Wu - Distinguished Graduate Student Award. Dean's Leadership Award recipients were: Dr. Daniel Vrinceanu - Exemplary Contribution in Website Development and Dr. Hyun-Min Hwang - Exemplary Contribution to COSET SURP.

The COSET Annual Faculty/Staff Campaign Ambassadors, who helped make the 2016 campaign a tremendous success were recognized and all faculty and staff who participated in the Annual Faculty/Staff Campaign, contributing a record $26,713.00, were presented an appreciation lapel pin.

The celebration continued with the "COSET Family Feud Game," hosted by Mr. Ed Booker and Mr. Jeff Shaw, and ended with a Game Tournament hosted by Richard North and our traditional dancing with DJ Master Mixer.

Minority Association of Pre-Medical Students Trip to Austin

Texas Southern University's chapter of Student National Medical Association (SNMA) Minority Association of Pre-Medical Students (MAPS) attended the 5th annual Medical Education Conference for the second time from March 23-27, in Austin. TSU's MAPS chapter was able to fully fund 15 students' travel, registration and hotel costs thanks to support of College of Science, Engineering and Technology faculty. Attendees were exposed to diverse career opportunities, network with medical representatives, and build professional and academic skills.

SNMA was founded in 1964 as a sub-division of the National Medical Association after recognizing the need to give active support to medical students and encourage them in their pursuit of careers as physicians. MAPS represents the undergraduate and post-bac student-run chapters that extend the mission of SNMA and NMA: increasing the number of African-American, Latino, and other students of color entering and completing health professional schools.

The participants were exposed to diverse career opportunities, networking opportunities with medical representatives, and tips for developing professional and academic skills.

The participating schools included Northwestern Medical School, UT Health Science Center-Houston, Meharry Medical School, Howard Medical School, and Harvard Medical School to name a few.

Faculty Advisor Dr. Ayodotun Sodipe with MAPS members during the banquet

Calculus Bowl Competition

The TSU Calculus Bowl team traveled to Stephen F. Austin State University in Nacogdoches, TX and participated in the Calculus Bowl Competition. There were 33 teams representing Universities from all over Texas. Our students performed very well. They placed first in their qualification group and in the final round they came on the sixth place, ahead of other more experienced teams.

The team members received a scholarship and were recognized during the COSET 2016 SCHOLOSCARS Achievement and Awards Ceremony.

Texas Southern University Pre-Veterinary Society

The first semester of the TSU Pre-Veterinary Society (PVS) has been a great success. Member's academic performance has been excellent, the network of resources is growing rapidly, and members are moving forward professionally as well.

Veterinary school admissions are largely academic. If the GPA does not pass muster, then no amount of extracurricular activities will be helpful. With this in mind, members of the Pre-Veterinary Society have hosted study sessions designed to address classes that traditionally impact GPAs, with an emphasis on organic chemistry. The acquired resources and study strategies will be refined in the coming semesters to ensure academic success. The formation and implementation of effective study groups will also be carried forward next semester, with an emphasis placed on regular, formal study halls.

From a networking perspective, this semester has been outstanding. Through the efforts of the PVS, the director of outreach for Texas A&M- the only veterinary school in Texas and one of the best in the nation- will now be visiting Texas Southern University. The PVS has established a relationship with the Thurgood Marshall College Fund, which has several excellent internships with the USDA among many others, as well as scholarships. Additionally, resources within the Houston Zoo, and the Houston Aquarium, are available to the students.

A compendium of veterinary admissions and veterinary school knowledge is almost complete.

SPOTLIGHT

Paul C. Simmons

COSET BOARD OF ADVISOR

Paul C. Simmons, P.E. has been serving on the COSET Board of Advisors for close to seven years; five years as the Chairman. For fifteen years he has also served as an Adjunct Professor in the Department of Transportation Studies. He taught many courses over the years but finally settled in on his two specialties': Travel Demand Forecasting & Analysis and Economics of Transportation. Paul retired from his teaching position at the end of the Fall 2015 semester.

With his degrees in Civil Engineering and Finance and Economics, he accepted a position with CONOCO in Houston during the energy crisis of the mid 1970's. In 1980, he received a Presidential Commendation from President Carter for his advocacy work with students at HUB Colleges and Universities. In 1981, he was appointed to the Presidential Executive Exchange

Program by President Ronald Reagan. He was assigned to NASA as Special Assistant to the Associate Administrator for Space Science and Applications (Payload) at headquarters. He describes that year as one of his great career years.

In 1987, desiring more of a challenge and better opportunities, Paul along with two Partners founded RSM Services in 1987; a Transportation Planning Firm. Their first project with Houston METRO almost turned into a disaster when the prime contractor ran out of funds and failed to complete their portion of project leaving RSM Services unable to complete their tasks. RSM reacted by offering to complete the prime contractor's work in order to position them to finish their assignment. This was accomplished without additional compensation. As a result, RSM has had a continuous flow of METRO projects to the present day.

While managing a sub-consultant project for Parsons Brinckerhoff (PB), the engineering firm offered him the position of Houston Area Manager; an opportunity he could not refuse. Among the projects in the Houston office at that time was the IH-10 Katy Freeway Reconstruction Project in which PB was the General Engineering Consultant.

Now retired from his professional engineering practice, he continues as the Chairman of the COSET Advisory Board.

Jose Dobaldo

ALUMNUS, DEPARTMENT OF AVIATION SCIENCE AND TECHNOLOGY

After completing secondary school in Honduras, Jose was awarded a Cooperative Association of States (CASS) scholarship by the United States government to study at Utah Valley University in Provo, Utah. He received the Golden Achievement Award for his outstanding community service and was recognized for having the highest GPA in the Environmental Technology Department. Upon completing his degree, Jose moved to Panama City, Panama to work for TACA Airlines. During his five years at the Marcos Gelabert International Airport, he held various service and operational positions. When he returned to the United States, he joined Texas Southern University to get a Bachelor of Science in Aviation Management and graduated Magna Cum Laude.

In early 2012, Jose was hired to revitalize and upgrade the 140 acre Liberty Municipal Airport in Liberty, Texas. As manager, he oversaw the $700,000 construction project of twenty t-hangars as well as other projects such as ramp improvements, security fencing, and terminal updates. Jose also refurbished a 24,000 gallon used fuel system purchased

for the airport fuel farm. During the past three years, he has tripled the number of based aircraft and increased airport traffic by providing clean, safe facilities and personal service. As manager, he has hosted fly-in events and children's tours and mentored three Texas Southern University seniors who completed their internships at the airport.

SPOTLIGHT

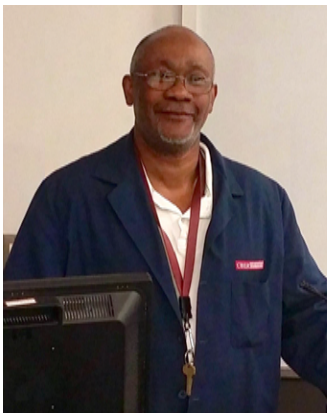
Ayodotun Sodipe

DEPARTMENT OF BIOLOGY

Dr. Ayodotun Sodipe is an Assistant Professor in the Department of Biology. He received his B.S. in Biology with a minor in Chemistry from Texas Southern University in 1990. He earned his Ph.D. in Environmental Toxicology in 2008 from Texas Southern University. His research involved Identification of Stachybotrys species and Toxins using novel genomic methods.

Dr. Sodipe started teaching at TSU in 2008 as a visiting Assistant Professor and became a tenure-track Assistant Professor in the Department of Biology in fall 2010. He was a Minority Access to Research Career (MARC) Fellow in the Biology Department from 1986-1989 and an MBRS Fellow from 2000-2008.

His current research focus is on optimization of amplification refractory mutation system (ARMS) to genotype externally visible characteristics (EVCS).



He collaborates with NASA JSC, University of Texas (UT) Graduate School for Biomedical Sciences, and UT Dental School on several student training and research programs. Over the last 5 years, he has been co-ordinating several pre health programs that has yielded good results and is growing very rapidly.

He has co-authored several research papers in peer –reviewed scientific journals and reviewed many textbook chapters for textbook publishers. Furthermore, he has reviewed grant proposal from NASA EPSCOR, NASA MUREP to name a few.

Dr. Sodipe has mentored many undergraduate students and supervised 5 graduate students. He serves on graduate committee of several students. In his dual role as a researcher and instructor, he has been teaching core biology courses ranging from freshman to graduate courses and organizing seminars that brings in deans of medical schools, hospitals administrators, and military personnel. He has served on several department committees such as grievance, recruitment, and college committees such as research, scholarships and award, and the University commencement.

Cynthia J. Wilburn

DEPARTMENT OF AVIATION SCIENCE AND TECHNOLOGY

Cynthia J. Wilburn joined TSU as the Aviation Flight Department Office Administrator in April 2015. Mrs. Wilburn is a former employee of Continental/United Airlines, where she served for eighteen years. She has worked in numerous pilot specific areas, including Flight Standards and Training, the Advance Qualification Pilot Program as a Data Specialist, and as an Administrator for Pilot Recruiting. Cynthia is a native of Houston, Texas, and graduated from Chester W. Nimitz High School. Cynthia received the Niecey Osborne Community Service Award from the CAL/OBAP Machine in February 2009.

Mrs. Wilburn works closely with the Federal Aviation Administration (FAA). Her duties also entail providing oversight for pilot and management student intern positions, and coordinating MOU's between the University and other Colleges and High Schools. She has in-depth knowledge of the flight program and airline industry, assuring that she is well qualified to handle the responsibility for FAA instructor evaluation and quality assurance, as well as student recruiting and registration. All these duties and more are performed by Mrs. Wilburn with the utmost professionalism, cheerfulness, and willingness.

One added jewel is that Mrs. Wilburn is an entrepreneur, who owns and operates CKATE PRESS which was designed for a specific clientele. Mrs. Wilburn strives for excellence in all that she does at home, work, and in the community. Here is a quote she feels will help others: Be nice, learn something new and let your light shine.

RESEARCH

NSF TARGETTED INFUSION GRANT

Development of Knowledge-Based System for Integrating Artificial Intelligence into the Undergraduate Engineering Curriculum


Dr. Yaqi Wanyan

This project seeks to infuse innovative electrical/computer engineering specialized Artificial Intelligence (AI) tools into traditional engineering problem-solving routines by problem-based learning (PBL) approach to bridge current curricula gap in the Department of Engineering. Currently junior and senior Civil Engineering (CE) curriculum (300 and 400 level) focuses exclusively on conventional mathematics, physics, and/or engineering methods for core engineering design and analysis courses, and these classical curricula are highly specialized into different sub disciplines such as geotechnical, environmental, transportation, structural construction engineering and management. On the other hand, Electrical and Computer Engineering (ECE) major students learn AI theories and algorithms in depth but lack real case engineering applications in their curriculum to fully appreciate the knowledge they are learning.

The overall goal is to fill the gap by developing new technology rich curricula to increase students' awareness of the need for the knowledge, which in return enhances the learning outcome.

An interactive and comprehensive Knowledge-Based Expert System (KBES) is being developed to document, compare, and analyze cutting-edge AI applications in civil engineering field. With the large amount of successful/unsuccessful AI applications tried and tested in civil engineering field, this unique intelligent database can be used as the platform and educational media for curricula development and implementation.

The framework laid out here is the first in its domain aiming to: 1) to develop an intelligent KBES platform to increase the intellectual rigor, breadth, and depth of engineering undergraduate study and lay a foundation for students who might consider pursuing Master's or PhD in engineering field; 2) produce a new interdisciplinary AI curriculum as a capstone course and to enrich existing curricula by integrating AI application case studies into thirteen CE courses and adding knowledge automation software into one senior ECE course; 3) foster interdisciplinary academic setting that will expose undergraduate students to latest state-of-the-art AI applications and encourage their early involvement in research.

This project is led by Dr. Yaqi Wanyan (PI) and Dr. David Olowokere (Co-PI). It will impact over 400 under-represented minority students in the Department of Engineering to promote learning interests, stimulate cognitive process, 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 infusion of innovative theories and practical applications will improve engineering students' critical thinking skills, thus better prepare them as competent engineers. The research activities will also have a significant impact on how new technologies are taught in old-fashioned engineering field such as civil engineering and how students learn these concepts.

Dr. Jahmario Williams Receives Teaching Excellence Awards

Dr. Jahmario Williams, Assistant Professor of Mathematics, has received two very prestigious awards in teaching: University Faculty Excellence Award-McCleary Teaching Excellence Award and 2016 COSET Academic Excellence Awards-Distinguished Teaching Award.

Dr. Williams' teaching performance is exemplary. He is very enthusiastic to get engaged with students in order to welcome them heartily to the Department, encourage them in the pursuit of their academic careers, and introduce them to the world of mathematics.

STUDENTS

Samuel Kanu

UNDERGRADUATE STUDENT, ELECTRICAL AND COMPUTER ENGINEERING

Samuel Kanu was born and raised in Nigeria, where he earned his high school diploma at the age of 14 in 2011. His desire to pursue a career in Engineering brought him to Texas Southern University in the summer of 2013 where he is currently a double major in Electrical & Computer Engineering and in Mathematics. During his tenure at TSU, he has maintained a cumulative GPA of 3.94 for which he has been recognized at TSU's Honors Day Convocations in 2014, 2015 and 2016. He previously served as the T.O.R.C.H Chairperson for the National Society of Black Engineers (NSBE) TSU student chapter, and currently fulfills the role of Secretary for the organization.

Sam currently works in the Engineering Department, as a Teaching Assistant for AC Circuits and Digital Systems and spends most of his free time tutoring students in Math, Physics and Engineering. He also participated in the 2015 Summer Undergraduate Research Program where he worked with Dr. Graham Thomas to simulate the performance of an electromagnetic active suspension system as a concept in space exploration vehicles. Upon graduation, he plans to pursue a Masters of Engineering degree to pave

his path towards a rewarding career in electrical engineering. He hopes to one day obtain a Ph.D. in Mathematics and become a professor.

Engineering Students attend 42nd Black Engineers Convention

Thirteen engineering students from Texas Southern University travelled to Boston, Massachusetts recently for the 42nd Annual National Society of Black Engineers Convention.

From leadership and professional workshops to career fairs and networking luncheons, the convention was filled with excitement and opportunities. Many students were able to gain interviews with notable companies such as Cummins Inc., Google, Proctor and Gamble, Dell, Ford Motors, Intel Bechtel, Turner, Air Products, Exxon Mobil, Chevron, Shell, Northrop Grumman, Raytheon, Microsoft, Johnson & Johnson, and NASA Jet Propulsion Laboratory (JPL), Lockheed Martin and Fiat Chrysler Automobiles for internship positions. Many students secured positive responses. Mr. Richard North received an offer from Intel. Students participated in the Cyber Security Competition sponsored by EMC2. The topic included developing solutions to avert hackers from getting personal banking information and discovering new initiatives and technology to be implemented. Their solutions included using biometrics, 2-factor authentication and Near Field Communication.

Ms. Marcia Robin, advisor and instructor in the department of engineering, accompanied the students on the trip and shared their experience with the Department Chair. Ms. Robin noted "The conference was excellent, better than we expected. Our students were able to have the chance to sit down and talk to the various engineering companies in attendance regarding career opportunities. The

workshops were very informative… they had the opportunity to speak to a lot of company representatives that they would not have had the opportunity to speak with, while here at home. Overall it was an excellent experience. Next year's conference will be in Kansas City, and we are looking forward to begin planning for it."

Texas Southern University continues to have a presence in the national chapter of NSBE as Mr. Samuel Kanu was elected at the convention as the 2016 – 2017 Region V International Chairperson.

FACULTY

Publications

Adedapo, AA, Oyagbemi AA, Fagbohun OA, Omobowale TO, Yakubu MA. Evaluation of the cytotoxic properties of the methanol leaf extract of Chromolaena odorata on HT29 colorectal cancer cell line. Journal of Pharmacognosy and Phytochemistry 2016; 5(2): 52-57.

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Naidu, NV, Smith-Baker, C, Sapp, JB, Yakubu, MA. (2016) Determination of γ-hexachlorocyclohexane and its Metabolites in Rats Urine, Serum, and Feces by HPLC-UV-Vis and MALDI-TOF. Journal of Analytical Chemistry, 2016, Vol. 71, No. 3, pp. 310–319.

Oyagbemi AA, Omobowale TO, Adedapo AA, Yakubu MA (2016). Kolaviron, biflavonoid complex from the seed of Garcinia kola attenuated Angiotensin II- and LPS-induced Vascular Smooth Muscle Cell Proliferation and Nitric Oxide Production. Journal of Phcog Res 2016;8:S50-5.

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You, B., F. Qiao, and L. Yu (2016), Implications of Left-turn Warning Messages in Work Zone Termination Areas. Journal of Transportation Technologies. Vol. 6, Issue 2, April, 2016.

Invited Talks

Yakubu, M., Keynote Lecture: The future of Human Environment and Health: Sustainability through Integrated Approach. 8th International Conference on Environmental Science and Technology, June 6-10, 2016 in Houston, Texas.

Yakubu, M., Conference Session Chair, Session 10 (Chlorinated and Other Persistent Organic Compounds), 8th International Conference on Environmental Science and Technology, June 6 – 10, 2016. Houston, Texas.

Theses/Dissertation

Ruksana Rahman, "Identifying Smartphone Based Warning Messages to Enhance Safety in Work Zone," M.S. Research Thesis, Completed in October 2015. (Advisor: Dr. Lei Yu)

Johora Khatun Munni, "Dilemma Zone and Driving Behavioral Analysis at Signalized Intersections under Foggy Weather Condition with In-vehicle Advance Warning Message," M.S. Research Thesis, Completed in October 2015. (Advisor: Dr. Lei Yu)

Peijia Tang, "Advanced Eco-Driving Strategies for Drivers and Vehicles Travelling within Intersection Vicinities," M.S. Research Thesis, Completed in August 2015. (Advisor: Dr. Lei Yu)

Brittany Hudson, "DNA Methyltransferase Expression In Lung Epithelial Cells Exposed to Road Dust," M.S. Research Thesis, Completed in May 2016. (Advisor: Dr. Shishir Shishodia)