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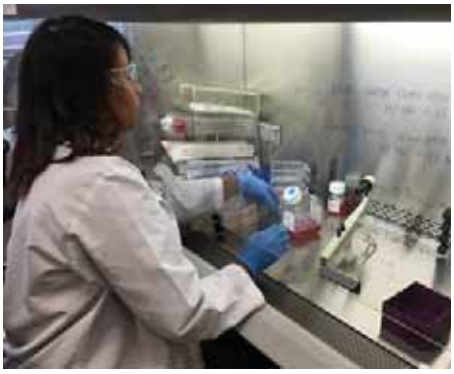
the EXPLORER Newsletter

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



Outstanding Research in the College of Science, Engineering and Technology

Texas Southern University College of Science, Engineering and Technology has been recognized by the National Science Foundation this Fall with more than $2 million in new research grants.

The Research Infrastructure for Science and Engineering award of $1,000,000 for 3 years to Dr. Daniel Vrinceanu (PI) in the Department of Physics, Dr. Shishir Shishodia (Co-PI) and Dr. Jason Rosenzweig (Co-PI) from Department of Biology, Dr. Hyun-Min Hwang (Co-PI) and Dr. Maruthi Sridhar Balaji Bhaskar (Co-PI) in Department of Environmental and Interdisciplinary Sciences.

Excellence in Research award of $500,000 for 3 years to Dr. Yunjiao Wang (PI) in the Department of Mathematics and Dr. Daniel Vrinceanu (Co-PI) in the Department of Physics for the project "Strengthen the Foundation of Big Data Analytics via Interdisciplinary Research among HBCUs". This award is shared with a group of researchers in the Department of Computer Science at the Prairie View A&M University. Another Excellence in Research award of $500,000 for 3 years to Dr. Maruthi Sridhar Balaji Bhaskar (PI) in the Department of Environmental and Interdisciplinary Sciences for the project "Analyzing the impact of landscape changes on the watershed dynamics of the flood-prone urban region". This project aims to analyze how the urban development, population growth, and landscape changes, alters the natural watershed ecosystem and stresses the ecological resources.

Excellence in Research award of $275,000 for 3 years to Dr. Daniel Vrinceanu (PI) in the Department of Physics for the project "Dynamics of high-L states of Rydberg atoms". This project seeks to deepen the understanding of high angular momentum states of Rydberg atoms. These are hydrogenic states of atoms excited at very large quantum numbers n, that are very fragile, and easily perturbed by surrounding electric and magnetic fields, and interact strongly with other particles via large cross sections. This project provides scholarships to undergraduate students for training in theoretical atomic physics research through year-long active mentoring, and summer research programs.

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Platform for Open Wireless Data-driven Experimental Research

Dr. Wei Li, Department of Computer Science and Dr. Xuemin Chen, Department of Engineering received funding from the National Science Foundation for their research proposal entitled PAWR Platform POWDER-RENEW: A Platform for Open Wireless Data-driven Experimental Research with Massive MIMO Capabilities

This is a collaboration project together with POWDER (Platform for Open Wireless Data-driven Experimental Research) team consisting of University of Utah, Utah Education and Telehealth Network, and Salt Lake City, with Dr. Kobus Van Der Merwe from University of Utah as POWDER team PI; and RENEW (Reconfigurable Ecosystem for Next-generation End-to-end Wireless) team consisting of Rice University, University of Michigan, and Texas Southern University, with Dr. Ashutosh Sabharwal from Rice University as RENEW team PI. Dr. Wei Li and Dr. Xuemin Chen serve as the PI and Co-PI respectively from TSU side on this project with a portion budget support of $320,998.00 to TSU.

COSET Gives to Student Education

The faculty and staff of the College of Science, Engineering and Technology gave a combined total of $18,092 in the 2018 Faculty/Staff Giving campaign and received the First Place award. It was announced at the Giving Campaign Victory Celebration Thursday, November 8, 2018 in the Science Building Atrium. During the campaign some of our faculty and staff won prizes donated to the cause. They are Charlotte Whaley, Dr. Maribel Handy, Nadareh Jahed, and Dr. Marian Hillar. Congratulations to them! The Office of Development extended the campaign to end December 14, 2018.

Hats off to the COSET faculty and staff and to the mighty ambassadors: Gertrude Florent, Helen Pittman, Delois Smith Johnson, Nadareh Jahed, Charmyn Simon, Rachel Mizzell, Lu Nasser, Judith Wilson, Rita Didikiri, Denita LaShore, Tioka Freeman and Dolly Spencer for a job well done!

TSU and Million Air Fixed Based Operator are Seeking to Partner

Dr. Terence H. Fontaine, Director of Aviation and Anthony Ethridge, VP Business Development began discussion regarding TSU Aviation's home away from home. "Our students deserve the best so we're working with Million Air because they are the best FBO in Texas. A relationship with Million Air means tremendous opportunities for our students in both the management and pilot concentration programs." TSU can benefit a lot from such a dynamic opportunity.

The great news was that Million Air reached out to partner with TSU, recognizing the potential of the pilot training program at TSU.

TSU Won Cessna's Top Hawk 2019 Contest

TSU's Department of Transportation Studies was informed last week that it has won Cessna's Top Hawk 2019 contest, to which aviation programs across the U.S. apply to earn the use of a training aircraft (a Cessna 172 G1000 Skyhawk) for nine months. TSU's application included a video entry in addition to a written marketing and operations plan for the aircraft.

The Skyhawk is the world's most popular trainer, which will give TSU's aviation student an extra advantage when going through the program. Over the next decade, there is expected to be a shortage of 100,000 pilots worldwide with many current pilots retiring or leaving the industry. TSU is one of the top producers of minority pilots and aviation management professionals in the state and the nation.

According to TSU's director of aviation, Dr. Terence Fontaine, the Cessna Skyhawk will be delivered – complete in TSU's maroon and gray colors – in early 2019.

STEM: The Pathway to Success

Annual Open House Alumni and Partnership Luncheon

The College of Science, Engineering and Technology (COSET) held its Annual Open House Alumni and Partnership Luncheon amidst the Homecoming Festivities on Thursday October 25, 2018. This year's theme was "STEM: The Pathway to Success." Alumni, partners, friends, and students took advantage of viewing labs, student and faculty posters, sharing personal greetings, and networking before the luncheon began. Dr. Oscar H. Criner, Interim Associate Dean, welcomed everyone, introduced Mr. COSET and Miss COSET, and the luncheon began.

Dr. A. Serpil Saydam, Interim Dean welcomed everyone and presented the State of the College Report and announced that the fall enrollment for COSET had increased. She expressed that she is deeply honored and greatly enthusiastic to serve TSU as the Interim Dean of COSET and that she is very pleased to meet our outstanding alumni, partners, and friends. COSET continues to be the largest academic unit at TSU, with a steady increase in the enrollment. Moreover, student recruitment and advising along with student retention, progression and graduation rates are our top priorities. In connection to these priorities, I would like to draw your attention to some of our important initiatives: (1) Summer Undergraduate Research Program (SURP) and (2) COSET 101 (Freshmen Meeting, designed to promote student success, persistence and retention).

She concluded that the COSET is very confident that our great faculty and staff, in the framework of our excellent programs and curricula, are totally determined to guide our students into the path of becoming first-rate scientists, engineers, and professionals. And finally, she wished everyone well and stated that we look forward to welcoming them back again to our campus and College and we are hoping to have their continued support for the COSET.

The program continued with LaKeisha Melton, President, TSU COSET Chapter who gave a very inspiring keynote address, then three fantastic and informational presentations by students Shaunte Abdin, Ph.D. Candidate, Environmental and Interdisciplinary Sciences, Esther Sey, Senior, Biology, and Thaddaeus Johnson, Sophomore, Chemistry. Michael Smith, Chair, gave greetings on behalf of the COSET Board of Advisors and Mr. Shawn Williams, TSUNAA gave an update of the TSU COSET alumni activities.

The highlight of the Annual Open House Alumni and Partnership Luncheon was the presentation of the 2018 Distinguished Alumni Awards to alumni nominated by the departments in the COSET. This year's recipients were: Department of Biology - Fraline J. Allgaier, Esq. Allgaier Patent Solutions, Glencoe, Illinois, Department of Chemistry - Matthew Minus, Ph.D., University of Texas at Austin, Department of Computer Science - Roderick G. Haynes, B.S., Microsoft, Houston, Texas, Department of Engineering - Kenrick Gardiner, B.S., Halliburton, Houston, Texas, Department of Environmental and Interdisciplinary Sciences - Samrawit Yeshitla, Ph.D., NASA Johnson Space Center, Houston, Texas, Department of Industrial Technology - Ronald Thomas, B.S., Whiting-Turner Contracting Company, Houston, Texas, Department of Mathematics - Joan Evans, Ed.D., Texas Southern University, Houston, Texas, Department of Transportation Studies - Jermaine Hannon, M.S., Federal Highway Administration Indiana Division, Indianapolis, Indiana, Billy F. McDonald Jr., B.S., United Way, Houston, Texas.

COSET Homecoming 2018 Float is 1st Place Winner

The Texas Southern University Grand Tiger Parade was held on October 27, 2018 in its surrounding community of Third Ward. The community came out in great support and welcomed the parade with excitement.

On the College of Science, Engineering and Technology (COSET) Homecoming float, hailing the theme "TSU, the Heart and Soul of Houston," the reigning Mr. COSET McKenzie Jones-Channel and Miss COSET Eniola Otukoya greeted the crowd with smiles, waves, and candy. They were accompanied on the First Place award winning float by the TSU COSET Alumni President LaKeisha D. Jones (nee Melton), COSET Interim Dean Dr. Azime S. Saydam, TSU COSET Alumni Shawn Williams, and DJ, grad student Dayana Abdullah-Smoot.

The Walking Unit of COSET Ambassadors, Student Advisory Council, and Student Organizations was joined by TSU COSET Alumni Shawn Williams, and staff members Sharon Hudson, Joy Warner, and Dolly Spencer as they chanted, cheered, and entertained the excited crowd. Staff member Tioka Freeman led the tailgating with an Old Fashioned BBQ buffet with meats and all the trimmings, fried fish, and appetizing peach cobbler to delight the appetites of all the parade participants and other tailgaters.

SPOTLIGHT

Dr. Wilson Awarded 2018 NOBCChE Percy L. Julian Award

Dr. Bobby Wilson, L. Lloyd Woods Distinguished Professor of Chemistry was awarded NOBCChE's biggest prize —the Percy L. Julian Award—this year. Dr. Wilson was the chairman of NOBCChE's board from 2005 to 2014. The Percy L. Julian Award recognizes an individual for their significant contributions in pure and/or applied research in science or engineering.

"The only thing separating you from success is just a little hard work," Wilson told the crowd gathered for the awards luncheon.

> "The only thing separating you from success is just a little hard work"

Dr. Bhaskar Selected as a Fulbright Scholar for Sub-Saharan Africa

Dr. Maruthi Sridhar Balaji Bhaskar, Associate Professor in the Department of Environmental and Interdisciplinary Sciences is awarded with a Fulbright Scholar Award to teach and advance research in Uganda for the 2018-2019 academic year. He is conducting his research on monitoring and mapping the Lake Victoria water quality using satellite remote sensing at the Makerere University in Kampala, Uganda. He is teaching a graduate level course in 'Mapping from Satellite Imagery' and an undergraduate course in 'Introduction to Remote Sensing' in the Department of Geomatics and Land Management of College of Engineering Design and Art (CEDAT) at Makerere University.

In recent years, Lake Victoria, Africa's largest fresh water lake, is facing severe threats from intense eutrophication, fish kills, and climate change affecting the livelihood of over 28 million poorest

rural inhabitants living around its shores. Dr. Bhaskar's research component will be integrated with his teaching through the seminars and workshops.

As a Fulbright scholar Dr. Bhaskar will also explore and develop research projects related to the application of remote sensing and Geographic Information Systems (GIS) to monitor the environmental changes such as water and soil quality, land use and land cover changes, land degradation and assessing the environmental sustainability. He is also collaborating and reaching out to the other universities and research centers in Uganda, Ethiopia, and Kenya within the East Africa with support of the Fulbright award, US Embassy in Uganda and the East Africa- Regional Center for Mapping of Resources for Development (RCMRD), an organization funded by USAID and NASA.

"Receiving the Fulbright Scholar Award is a great opportunity to learn new techniques and share information, to publish research findings, and to build new professional relationships in Uganda and other parts of Sub-Saharan Africa" said Dr. Bhaskar." Also the award gives an opportunity to serve and educate the world's poorest and transform them into lifelong learners which is also a mission of the TSU" according to Dr. Bhaskar.

STUDENTS

SURP 2018: Passion for Excellence in Research

A total of 16 talented and motivated COSET undergraduate students from 8 departments participated in SURP 2018, which is designed not only to provide students valuable research experience, but to allow them to see what life as a graduate student would be like. They spent 10 weeks in the laboratories to explore various cutting-edge research topics under the mentorship of a COSET faculty. SURP allows students to engage more deeply in topics they learn from lectures. Students gained hands-on training with state-of-the-art instruments and problem-solving skills. The students expressed that they learned that research is a complicated and sometimes tedious process of asking questions, designing experiments, and collecting and interpreting data. They also appreciated that weekly workshops helped them to learn strategies and skills to disseminate research results through different venues such as oral and poster presentation and manuscript publication.

At the end of the program, students delivered oral presentation with their findings and wrote manuscripts for publication in the Proceedings of COSET SURP. Their research posters will be presented at the TSU Research Week in March 2019 to show the passion in COSET for excellence in research. As a compensation, each student received $2,000 when they completed all requirements. Students were greatly delighted to get paid to read research articles, discuss with professors, and conduct research projects. SURP, which was launched in 2013, is now one of the best ways to encourage them to pursue graduate degrees and lead to the pathway to professional career. SURP will significantly contribute to solve severe underrepresentation of African American and other minority professional workforce in the STEM field.

TSU Pre-Engineering Academy: Summer Learning that Really Works

The Department of Engineering had an exciting PreCollege Engineering session this summer. Highly competitive, the program could only accept 41 participants out of over 100 applications. Under continued funding by the U.S. Department of Defense, the program has remained a steady pipeline of students into our engineering program at TSU. According to the Director and Principal Investigator for the program, Dr. David Olowokere, the TSU Pre-engineering Summer Academy has been designed to provide academic instruction, hands-on-activities, and mentorship to high school students within the Houston Metropolitan Area. It is geared towards ensuring that its participants have the proficiency in Mathematics and Science required for high school completion and college entry. Additionally, the program also aims to expose students to the immense opportunities available in STEM and give students the confidence to pursue higher level education in STEM fields, particularly in engineering. Secondary goal of the academy is to create a long-lasting relationship with our participants and partnering schools.

Keynote speaker at this year's event opening ceremony was Dr. Oscar Criner, speaking on Ubiquitous Computing; a talk which made the jam-packed hall spellbound as they listened as Dr. Criner gave a breakdown and simplification of the principles of computing, and how it has impacted all facets of life.

Generally, students worked on different activities featuring use of technology in learning, and about the history of engineering and current advances in the field. A newer aspect of

program this year was that students were educated on the technological advances in drones and lectured on the new uses and function of drone in today's business markets. Students were also able to test fly a drone using a simulator. Other sessions include Biology/Biomedical, petroleum engineering and oil spills, hydraulics, and site visits to NASA, Port of Houston, and other selected engineering facilities.

The grand closing ceremony featured awards and recognitions; and distribution of cash honorarium of $450.00 to each of the 41 participants.

Texas Southern University Aviation Students Serve Their Community on Thanksgiving Day

On Thursday, November 22, 2018 Aviation Science and Technology Students served as one of the many Volunteer Organizations at the YMCA (6309 MLK Blvd) who partner with the City of Houston, delivering Thanksgiving meals to Senior Citizens in the community. The group worked from 8 am till nearly noon and brought smiles to many families. A combined effort by 3 Aviation Student Organizations: American Association for Airport Executives (AAAE), Organization of Black Aerospace Professionals (OBAP) and Women in Aviation (WAI) participated. In picture: (1st row) Ka'Nytrea Johnson, Olajumoke Omosebi (WAI President), Olusegun Wellington, Eddie Caruthers (AAAe President), Prof. Edward Booker III (Faculty advisor), Marc Jackson, Cherokee Swearington, Zhane Collins (Home Economics Major), (2nd row): Chauncy Bethell, Zakia Person (OBAP President) and Mathew Thorton.

TSU Students Honored in 2018 CAMMSE Research Symposium

In August 2018, students and faculty members in the Transportation Studies Department presented their research at the 2018 Advanced Multimodal Mobility Solutions and Education (CAMMSE) Research Symposium hosted by the University of North Carolina at Charlotte City Center. CAMMSE is a five-year multi-campus Tier 1 University Transportation Center funded by USDOT started in November 2016 under the Fixing America's Surface Transportation Act. In this research symposium, one of our graduate students, Ms. Qiao Sun, won the second prize in the Graduate Student Poster Presentation competition. Representing the TSU team, she presented a research project on the topic of Innovative Intersections Design. The research project was advised by Dr. Yi Qi and Dr. Mehdi Azimi.

Mr. Itoro Ibanga Receives ITMA Scholarship Award

Mr. Itoro Ibanga, a graduate student studying Transportation, Planning and Management at TSU was awarded the International Transportation Management Association (ITMA) Scholarship Award at the ITMA Luncheon event held on June 6th, 2018. He was invited to the ITMA Happy Hour event on August 9th, 2018 where he was congratulated by the President of ITMA and the Board members of ITMA. Itoro is a dedicated, results-driven individual specializing in Maritime Transportation Management and Security and he currently has a 3.83 GPA. He strives to be a modern-day sponge, by accumulating an abundance of information from his graduate research assistantship in the Center for Transportation Training and Research, and professionals in the Maritime industry to advance his knowledge in the field. He is an upcoming leader and is currently serving as President for Institute of Transportation Engineers TSU Student Chapter. Itoro is presently working on expanding the chapter by acquainting students with topics of interest in transportation and traffic engineering through seminars and sponsored activities, enhancing expansion of facilities for transportation and traffic engineering study, and fostering the development of professional spirit in the student chapter.

FACULTY

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