

# *ANNUAL REPORT*

## *2012-2013*



**COLLEGE OF SCIENCE AND TECHNOLOGY**  
**TEXAS SOUTHERN UNIVERSITY**

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# Vision

“The College of Science and Technology will become a leader among urban universities in educating a diverse population in interdisciplinary sciences and contemporary technologies, preparing them for a competitive global economy”

## Mission Statement

“The College of Science and Technology at Texas Southern University is dedicated to integrating sciences and contemporary technologies, through education, scholarly activities, and community service; meeting the needs of a diverse graduate and undergraduate student population while addressing critical urban issues within a global economy”

## Strategic Goals

**Goal 1.** Provide High Quality Instruction

**Goal 2.** Perform Basic and Applied Research

**Goal 3.** Engage in Community Service

**Goal 4.** Optimize Enrollment of Undergraduate and Graduate Students

**Goal 5.** Strive for Steady Increase in External Funding

**Goal 6.** Ensure Efficient and Effective Administration

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## Front Cover Page

An early morning view of the TSU  
Science Center. Photo by Dr.  
Hector Miranda.

## Back Cover Page

A collage of the New Technology  
Building nearing completion. Photo  
by Dr. Hector Miranda and Mr.  
Peter Olamigoke.



## Message from the Dean

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Dr. Lei Yu, Dean, College of Science and Technology

*"The strength of our college is research, and total research funds that we generated accounted for over 55% of all research dollars generated by the University. Through our most productive research centers and various funded programs, our faculty and students have actively published and presented both nationally and internationally "*

In this annual report, you will find information on all the activities of the College of Science and Technology (COST) at Texas Southern University (TSU) for the 2012-2013 academic year.

During the 2012-2013 academic year, the faculty and staff of the College of Science and Technology made substantial efforts to structure a roadmap for student success. We have focused on addressing the issues critical to student learning outcomes, such as the grade distribution, i.e., improving course passage rates; student advisement, i.e., making sure that students take the appropriate courses in the proper sequence; program assessment, i.e., making sure that academic programs are effective; curriculum restructuring, i.e., minimizing the number of courses in a program and reducing the number of redundant courses; and class scheduling, i.e., making sure courses are offered when they are needed in the academic program.

We have worked to clean up the issues for students who have accumulated an excessive number of semester hours, with the goal of clearing all obstacles for these students to graduate at the earliest possible time. Through the collective, dedicated, and persistent efforts of all faculty and staff, we have seen a very encouraging statistical trend: the student persistence rate in the college increased by 4.8% and the student progression rate jumped by 200% over the last four years. Regarding physical facilities, nothing has been more exciting than witnessing the rising of the second new and modern building for COST over the last year. The construction is expected to be complete in early September and will be followed by the furnishing of the classrooms, offices, and laboratories in the fall of 2013. This new building will be ready for classes in the spring 2014

semester, and will house the programs that were displaced by hurricane Ike, and new programs and research centers that have been established since that time. All faculty, staff and students are looking forward to moving into this new building.

A major step in improving faculty governance policies and procedures was made when the faculty approved its Rank, Tenure, and Promotion (RTP) policy at the opening faculty meeting in January 2013. On another front, a major change of the administrative structure in the college was made by the establishment of the Department of Environmental and Interdisciplinary Sciences, which replaces the existing Department of Environmental Science and Technology, currently the umbrella of the interdisciplinary M.S. and Ph.D. degrees in Environmental Toxicology. Under the new name of Environmental

and Interdisciplinary Sciences, opportunities to develop and house new interdisciplinary programs that address emerging issues will be possible.

We have all been proud of the significant achievement in the 2013 TSU Faculty and Staff Campaign. COST received the University's Total Achievement Award for reaching 100% participation and monetary goals, and the Outstanding Accomplishment Award for raising the most money. This is clear evidence of the total commitment of our faculty and staff to our students. We will continue this momentum and strive to develop all possible ways to raise funds for student scholarships.

Our relationship with our alumni and industrial partners was further strengthened by hosting the 4th annual Open House – Alumni and Partnership Luncheon on November

8, 2012, in which the Port of Houston Authority received the Partner of the Year Award for its exceptional contributions to the inception of our Maritime Transportation Management and Security program. Distinguished Alumni Awards were also presented to 10 alumni from various academic departments. I am also proud to announce that the COST Alumni Association presented its first scholarship to a current student. Our alumni are also firmly determined to support our college and our students.

The strength of our college is research, and the total research funds that we generated accounted for over 55% of all research dollars generated by the University. Through our most productive research centers and various funded programs, our faculty and students have

actively published and presented both nationally and internationally.

We understand that the new academic year will be full of challenges as well as opportunities for COST. We remain very optimistic and enthusiastic about what we do and what we want to achieve. We will continue to work hard and work collaboratively together with all faculty, staff, students, alumni, partners and friends in order to provide first class academic programs, prepare a highly skilled technological workforce for our society, and develop innovations in science and technology that make maximum contributions to our national economy and national security.

PROFESSOR LEI YU, Dean  
College of Science and Technology

*"Nothing has been more exciting than witnessing the rising of the second new modern building for COST over the last year. The construction is expected to be complete in early September and will be followed by the furnishing of the classrooms, offices, and laboratories in the fall of 2013. This new building will be ready for classes in spring 2014"*



## COST Board of Advisors

### Message from the Chairman

The 2012 – 2013 academic year for the COST Advisory Board was productive in many respects. The operations of the Advisory Board have become very efficient which may be attributed to the involved participation of all Board Members. As I mentioned last year, the Advisory Board represents over a millennium of academic and professional experience in the areas of science and technology. This robust combination of capability, experience and dedication has established the COST Advisory Board as a valuable force, guiding the College into the future.

The Advisory Board continued to build on a potential research relationship with Shell Oil Company with the Physics Department leading the way. More on-campus meetings with industrial partners emphasizing COST facilities and students are expected in this upcoming year. The opening of the additional laboratory facilities in the new technology building will enhance these opportunities. Last year, 55% of all the research funding at TSU was generated by the COST faculty.

The COST Alumni Association in its second full year of existence presented its first student scholarship; an outstanding achievement. COST reached 100% participation in the Annual Faculty/Staff Fundraising Campaign. Another COST accomplishment.

Our primary mission is to bring to the students of COST the strongest educational experience possible and prepare them to fully participate in what we all know will drive the economies of the world in the future – science and technology.

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

*"This robust combination of capability, experience and dedication has established the COST Advisory Board as a valuable force, guiding the College into the future."*



Ike Allen  
Linbeck Group



Sheila Blake  
City of Houston  
Code Enforcement



John Etta  
Port of Houston  
Authority



Joseph Flowers  
Schlumberger



Rudy Gomez  
R. G. Miller  
Engineers



Larry V. Green  
City of Houston  
Council Member



Chris A. Hudson  
Morris Architects



Cernelious Jones  
OMO Science, Energy,  
and Technology



C. C. Lee  
STOA International  
Architects



Tracy Munoz  
RealEC Technologies



Giovanni Puccini  
KBR Infrastructure



Dorothy Rasco  
NASA JSC



Paul Simmons  
Paul Simmons &  
Associates



Michael E. Smith  
Marathon Oil  
Company



Murdock Smith  
Consultant



Kimberly J. Williams  
Metropolitan Transit  
Authority



Frazier K. Wilson  
Shell Oil Corporation  
Foundation



## Assistant Secretary of the US Navy visit to TSU Campus

Assistant Secretary Garcia visited TSU to discuss ways TSU can assist the Department of the Navy in recruiting minority candidates both for military and civilian positions.



Assistant Secretary of the Navy Juan Garcia III recently visited the Texas Southern University campus. The Asst. Secretary acts on matters pertaining to manpower and personnel policy within the Department of the Navy including issues affecting active duty and Reserve Sailors, Marines, and Department of the Navy civilians. During the visit, the Asst. Secretary

toured the Science Center, Aviation Center and Sterling Student Center. The highlight of the visit was a luncheon hosted by Dr. Rudley that included a presentation on the Maritime Transportation Management and Security program by College of Science and Technology Dean, Lei Yu and presentations by Maritime students Schineatha Rodriguez, Alfonso Arteaga, Dommonic Nelson,

and Jessica Brown. TSU Maritime students and Navy ROTC students were guests at the luncheon.

Established in Fall 2010, the Department of Transportation Studies in partnership with the Port of Houston Authority offers a Bachelor of Science degree in Maritime Transportation Management and Security.

Assistant Secretary Garcia with President John Rudley, Provost Sunny Ohia, COST Dean Lei Yu, faculty, staff and students of the Maritime Transportation Management and Security Program



# Port of Houston Authority Executive Director honored by COST

The Port of Houston Authority is a founding partner and financial sponsor of the TSU Maritime Transportation Management and Security Program, which was developed in a significant effort to increase the workforce in the maritime industry.

Col. Leonard Waterworth, Executive Director of the Port of Houston Authority (PHA), visited the College of Science and Technology and its Maritime Transportation Management and Security Program on Wednesday, October 31, 2012. He met with students, faculty, administrators and the President. Students in the Maritime Transportation Management and Security Program discussed their impressions and experiences with the maritime program and their internships in industry with Col. Waterworth. Dean Yu described the development and history

of the program. President John M. Rudley and Dean Lei Yu held a reception for Col. Waterworth inviting all students, industry advisory board members, visitors, and friends of the Maritime Program.

Col. Waterworth was appointed Executive Director of the Port of Houston Authority on April 24, 2012 by the Port Commission. Over a 33-year career, Col. Waterworth has held multiple executive leadership positions in engineering and construction organizations in both the private and public sectors.



Colonel Leonard Waterworth  
Executive Director, PHA

Immediately prior to his appointment at the Port of Houston Authority, Col. Waterworth was President/Chief Executive Officer of Dannenbaum Engineering Corporation. In the public sector, Col. Waterworth served in various capacities in the U.S. Army and the U.S. Army Corps of Engineers.

The PHA is a founding partner and financial sponsor of the TSU Maritime Transportation Management and Security Program, which was developed in a significant effort to increase the workforce in the maritime industry. In an era where the workforce is aging and the requirements for contemporary management and security are demanding more highly educated people, the PHA-TSU partnership will supply many highly skilled people to the maritime industry, who will help ensure the continued operations of the maritime transportation infrastructure.



Colonel Leonard Waterworth with  
TSU President, Dr. John Rudley and  
COST Dean, Dr. Lei Yu





## 4th Annual Open House-Alumni and Partnership Luncheon

The 4th annual Open House-Alumni and Partnership Luncheon of the College of Science and Technology of Texas Southern University was held on November 8th. It was an occasion for alumni and partners to get to know each other and be informed about the College's activities. This year's theme for consideration is "Science and Technology drives the Economy." The Open House was a showcase for the cutting edge programs in COST that prepare students for the contemporary workforce.

The keynote speakers Port Commissioner Jimmy A. Burke and Gilda Ramirez noted that the Commissioner was present at the inception of the maritime program. Commissioner Burke delivered a stirring address that highlighted the development of

the port alongside the city of Houston, and the exciting future the port has as Houston moves toward becoming the leading port in the nation. The commissioner highlighted the volume of shipping and the number of vessels that utilize the facilities of the port each year. He described the economic impact of the Port on employment throughout Texas that is the result of activities at the Port.

Ms. Gilda Ramirez is the co-chair of the industry advisory board of our Maritime Transportation Management and Security program. She has been the key person in the past three years who drove the development of our maritime program from concept to its now realized success.

PHA Port Commissioner Jimmy A. Burke and Vice President of Small Business, Ms. Gilda Ramirez accepting COST Partner of the Year Award from Dr. Lei Yu, Dean, and Mr. Paul Simmons, Chair of the COST Advisory Board





### Successful Launch of US Coast Guard Approved TSU Maritime Certification Training Program

The new TSU Certified Training Program developed by the Transportation Studies Department was launched in June 2012, and obtained outstanding comments from the US Coast Guard/ National Maritime Center, for its "world class training standards and quality" during their auditing and approval process. The Maritime Certification Program is designed to enhance the skills of maritime, and oil & gas

professionals. The suite of nine advanced training courses was developed in response to the increasing job market needs for mandatory certification and required training in the maritime, transportation, logistics and oil and gas/offshore industries. The first course was carried out in June and July 2012 with fifteen students intensively trained in the areas of regulatory compliance, safety, security, occupational

health, operations, technology, inspections and audits, and marine/offshore operations. The second session was scheduled during fall 2012. All classes were held on the TSU campus between 9 am and 5 pm. A 50 percent discount is available for TSU students. Upon successful completion, participants receive a US Coast Guard approved Certificate of Training that will be valid for five years.

### Maritime Program Celebrates First Graduates

The TSU Maritime Transportation Management and Security (MTMS) program announced its first graduates at the May 2012 Commencement. Those graduates were Marc Evans, John Pena, and Leo Vivas. TSU partnered with the Port of Houston Authority in fall 2010 to develop a new undergraduate degree program that addresses three nationally recognized priorities – logistics, security, and environment in a single curriculum.

Graduates of the program are qualified to work in a variety of administrative and managerial positions in the maritime industry and port operations; function effectively in the disciplines of logistics, security, and environment; and pursue advanced studies in the field of maritime transportation or its affiliated areas. Evans and Pena have secured employment in the local maritime industry and Vivas is attending graduate school at TSU.

Drs. Fengxiang Qiao and Yi Qi with first graduates of the MTMS program at the May 2012 commencement







## TSU Partners with the U.S. Army Corps of Engineers

TSU Provost Dr. Sunny Ohia and Dr. Lei Yu signing the partnership agreement with Colonel Christopher Saltese, US Army Corps of Engineers

Texas Southern University and the United States Army Corps of Engineers – Galveston District (Corps) recently signed a Partnering Agreement to establish a relationship with the Corps in support of higher education, and ensures TSU students are knowledgeable of the Corps and its recruitment efforts. The partnership with TSU will strengthen the Corps's relationship and enhance outreach

and recruitment engagements to attract well qualified students in the areas of engineering, environmental, and civil programs. TSU will provide faculty consultations and advisors, conduct leadership and diversity training and related programs at the Corps, and keep the Corps informed of the university's research and Maritime transportation capabilities. TSU students will have an opportunity to apply for the

Corps's internship positions and co-op programs. The Corps has expressed a sincere desire to be an active recruiter at the annual TSU Career/Job Fair. Dr. Lei Yu, Dean of the COST, is excited about the new partnership and stated "Our Agreement with US Army Corps of Engineers provides great opportunities for our students to pursue their professional experiences and future careers."

## COST Rank, Tenure, and Promotion Policies Ratified

The Faculty of the College of Science and Technology approved its Rank, Tenure, and Promotion (RTP) policy at the opening faculty meeting in January 2013. The RTP policy had been under consideration by a faculty committee since 2010. The approval of this policy is a major step in

improving the COST faculty governance policies and procedures.

The proposal was discussed at the summer faculty retreat on August 10, 2012. Each time a draft was prepared, the committee asked faculty for input and suggestions, fully including the faculty in the

formulation of this policy. The final draft was approved by faculty vote on January 14, 2013.

The COST congratulates members of the COST Rank, Tenure, and Promotion Policy Committee for their diligent work and a significant achievement.





### Nobel Laureate Robert Curl's Visit to TSU Campus

Dr. Curl received a 1996 Nobel Prize in Chemistry for the discovery of carbon cage compounds known as the fullerenes. He presented the TSU Special Seminar titled "A Brief History of Carbon."

The Texas Southern University Office of the Provost and Vice President for Academic Affairs and Research in cooperation with Colleges of Science and Technology, Education, and Pharmacy and Health Sciences hosted Nobel Laureate Professor Robert F. Curl, Jr., Ph. D. on Friday, February 22. Dr. Curl presented the TSU Special Seminar titled "A Brief History of Carbon." Professor Curl is University Professor Emeritus,

Pitzer-Schlumberger Professor of Natural Sciences Emeritus, and Professor of Chemistry Emeritus at Rice University. He received a 1996 Nobel Prize in Chemistry for the discovery of carbon cage compounds known as the fullerenes that could be produced in good yield when elemental carbon vapor is allowed to condense under the right conditions. Over 150 faculty, staff, and students from TSU and nearby

high schools attended the seminar.



Participants from local schools at the seminar

### Tour for Diversity in Medicine Bus Tour Visit to TSU

The Tour for Diversity in Medicine visited Texas Southern University's campus on February 16, 2013. Started by several young Boston- and Chicago-based physicians and funded by a \$210,000 award from the Aetna Foundation, the Tour offered a full day of premedical enrichment activities to at least 100 of TSU's students. Session topics ranged from the application process and admissions tests to choosing the right specialty to an overview of health disparities. Students had the

opportunity to interact with the presenting physicians, dentists and medical students, and to hear their stories about how they overcame obstacles in order to pursue a career as a health care professional. Although minority populations comprise more than 26 percent of the U.S. population, African Americans, Hispanics and Native Americans combined represent only about 6 percent of practicing physicians and 5 percent of dentists.





Left: Dr. Lloyd Jarmon and Dr. Amna Plumber addressing the students. Right: Drs. Warren Williams and Ayodotun Sodipe presenting the certificate of appreciation to Dr. Cleverick Johnson

## Tuskegee University School of Veterinary Medicine Visit to COST

On September 21st, 2012, the Department of Biology hosted Tuskegee University School of Veterinary Medicine. Representatives spoke with the BIOL 300 – Seminar for the Health Related Professions class. Discussions focused on recruiting TSU students to pursue the field of veterinary medicine. Students were also given information

regarding other medical fields and other health professions options that are available. Representatives from the Tuskegee University School of Veterinary Medicine included Drs. Lloyd Jarmon, DVM, and Amna Plumber, DVM.

The Biology Department also recognized Biology Alumnus, Dr. Cleverick D. Johnson, M.S.,

D.D.S. Dr. Johnson obtained his B.S. in Biology in 1979 and M.S. in 1981, both from TSU. He received his doctorate in Dentistry at the University of Texas Dental Branch, Houston, Texas in 1986. This event was facilitated by Dr. Warren Williams, Interim Chair and Dr. Ayodotun Sodipe, Assistant Professor, Department of Biology.

## The University of Texas Medical Branch visit to TSU

Dr. Lisa Cain (Director, Medical School Enrichment Program), Ms. Trea Smith, and Ms. Debra Leidy from the University of Texas Medical Branch, Galveston, TX visited the College of Science and Technology on October 26, 2012

to promote the Early Medical School Acceptance Program, Medical School Matriculation Program, and Pre-Medical Allied Health Academic Achievement and Retention Program to students in the College.



Right top: UTMB representatives interacting with COST faculty and students at TSU  
Bottom left and right: COST student participants at the UTMB internship programs





## Year in Review

### Transportation Security Institute

The Transportation Security Institute was designed to introduce exemplary high school students to the importance of security measures in the transportation industry and the various career opportunities that will be available to them in the near future.

Closing ceremony of 2012 Transportation Security Institute Program at TSU



The Center for Transportation Training and Research, Texas Southern University was the host for the 2012 Transportation Security Institute (TSI). The 2012 TSI was a non-residential, two week program with a curriculum that focused on transportation security in classroom

lectures and exercises supported by field trips to transportation facilities throughout the Houston area. TSI student participants were exposed to a variety of topics as part of the curriculum that emphasized the overall importance of transportation

security since the terror attacks of 9/11. Topics included airport, maritime, and public transit security, bridge, and highway design, and the challenges involved in emergency management.

### Department of Environmental and Interdisciplinary Sciences

In its meeting on Friday, February 22, 2013, the Board of Regents of Texas Southern University approved the establishment of the Department of Environmental and Interdisciplinary Sciences, which

replaces the existing Department of Environmental Science and Technology. This department is currently the umbrella of the interdisciplinary M.S. and Ph.D. degrees in Environmental Toxicology.

Under the new name of Environmental and Interdisciplinary Sciences, opportunities to develop and house new interdisciplinary programs that address emerging issues in the future will be possible.

### Administrative Professionals Appreciation Luncheon



The College of Science and Technology honored its staff for their exemplary contributions and service to the College at a luncheon held Wednesday, April 24, 2013 in recognition of Administrative Professionals Day. Our staff has worked tirelessly to accomplish the objectives and mission of the College. In addition, COST staff continues to represent the College with high standards of excellence and dedication to students. We salute and appreciate our staff for a job well done ... keep shining with success!





## COST Student Town Hall Meeting

The 2012-2013 COST Dean's Student Advisory Council is comprised of twenty-six students representing the ten departments of the COST and ten student organizations within the College. The Advisory Council is a direct communication line between COST students and the College's administration. Members of the Council meet with students they

represent about issues and bring suggestions to improve the College to the attention of the Dean. Dr. Yu has emphasized that the value of a student's COST degree increases as the College improves. The College values the input of these students toward improving the College. The Advisory Council successfully hosted the third COST Student Town Hall Meeting on April 17, 2013 after a

series of planning meetings. All COST students were invited to attend along with COST Administrators. There was a question and answer period during which students asked questions of each administrator related to their concerns. The Advisory Council also conducted a brief survey related to student retention in the College.

## Aviation Science and Technology Career Day Event

On February 28, 2013, the Aviation Science and Technology Department hosted the Houston Airport System (HAS) Aviation Club for career day. The Aviation Club is the idea of HAS Director of Aviation Mario Diaz to expose high school students to the wide range of career opportunities in the aviation/aerospace industry. The career day event was held in the atrium of the Texas Southern University Science

Center, where students made presentations on aviation/aerospace topics. Following the presentation ceremony, students were accompanied by faculty to the Department of Aviation Science and Technology where they participated in hands-on demonstrations of basic navigation principles, airport operations and flight simulators on the airfield, air traffic control and flight. TSU President, Dr. John

Rudley visited during the event and addressed the students with an invigorating talk regarding his vision for the department. He also admonished students to make wise decisions when making choices for college and to consider Texas Southern University and the opportunities that are available in this field. Dr. Rudley also promised scholarships for two Sterling High School students.



### NSF CRCN External Advisory Board Meets

The National Science Foundation (NSF) announced an award of \$5 million over five years beginning 2011 to Texas Southern University to support its proposed "Center for Research on Complex Networks," a new NSF Center of Research Excellence in Science and Technology (CREST). The Center financially supports several undergraduate and graduate students.



The first External Advisory Board (EAB) meeting of the CRCN - NSF CREST Center was held on June 28, 2012. NSF CREST Program Director, Dr. Richard N. Smith and seven EAB members, some of them travelling from as far away as Canada and Macau attended this meeting. President John Rudley and Provost Sunny Ohia met with Board members in the morning and afternoon respectively. The Center

Administrative Committee members, Drs. Wei Wayne Li (PI), Lei Yu (Co-PI), Christopher J. Tymczak (Co-PI), Oscar Criner (Director of Education), and David Olowokere (Director of Technology Transfer) presented updates on the progress of center activities, the research status of sub-projects, as well as the progress regarding education and technology transfer. Over 50 Center participants including Faculty, Investigators, Post-

Doctoral Fellows, Graduate and Undergraduate students who have been supported by the CRCN Center met with the EAB. During lunch, Center investigators presented over 20 posters. Some of the Center's Internal Advisory Committee members including Dr. Adebayo Oyekan, Dr. Carlos Handy, Dr. Barbara Hayes, and Dr. Desiree Jackson were also present for these activities.

### 2013 TSU Research Week Creating a Collaborative Research Culture

The 2013 Texas Southern University Research Week program, "Creating a Collaborative Research Culture" on April 2-5, 2013, was a rousing success with a record number of poster presentations and faculty oral presentations. On April 4, 2013, the COST hosted its College-specific research program entitled, "How much data/research should/must be incorporated into undergraduate curricula to make them more meaningful and current." Each speaker provided their perspective of whether enhanced research exposures would improve student retention and improve graduation rates. The presentations were followed by a stimulating panel discussion in which the panelists provided their own classroom anecdotes of how

research was incorporated into their undergraduate curricula, and whether that impacted their learning outcomes for particular classes.

Latisha V. Clark, M.S., Research Assistant in the Center for Transportation Training and Research, was awarded 3rd place for Staff Oral Presentation. Dr. Mark Harvey, Assistant Professor of Physics, won 2nd place for Faculty Poster Presentation. Shaunte Hulett-Abdin, Doctoral student in

Environmental Toxicology, won 3rd place for Student Poster Presentations. Minerva Carter, Project Coordinator for the Innovative Transportation and Research Institute, won 1st place for staff poster presentation. For Staff Oral Presentations 2nd place was awarded to Qing Li and Xiaobing Wang, and 3rd place was awarded to Jinghui Wang, all Research Assistants in Transportation Planning and Management.





## NSTI Student Research Activity

Ten NASA Science and Technology Institute (NSTI) student interns from TSU and PVAMU were engaged in important summer projects at NASA Johnson Space Center related to the project titled "Development of technologies for the mitigation of bone loss in microgravity, osteoporosis and inflammatory disease." The project PIs are Dr. Sundaresan from TSU and Dr. Aghara from PVAMU. Eight other students were supported at the Marshall Space Flight Center in Huntsville, Alabama on the project titled "Evaluation of the Behavior of Optical Fibers for Structural Health Monitoring of Composite Pressure Vessel." The project PIs are Dr. Olowokere from TSU and Dr. Gonzales from UT El Paso.

The College of Science and Technology received a research grant for \$300,000 from the NSTI Research Program awarded by UNCFSP in September 2011. The COST recipients are Dr. David Olowokere (Engineering Technology), and Dr. Alamelu Sundaresan (Biology). The purpose of the NSTI is to create a consortium of minority institutions that participate in cutting-edge research in collaboration with NASA. TSU was also the proud host of the NSTI 2012 Investigators Working Group meeting from October 9-11, 2012. The result was a thriving research conference with research reports and networking between students and principal investigators of the different NSTI clusters.



Brenda Collins, NASA Ames Research Center, addressing students at the TSU NSTI meeting

## CBER Journal Club

In the spring of 2013, Center for Bio-nanotechnology and Environmental Research (CBER) faculty, fellows, and scholars participated in weekly journal clubs and research meetings, that alternated each week. The research meeting was set in place to inform the scholars and fellows about ongoing and future projects in the CBER program.

CBER faculty Drs. Hector Miranda and Jason Rosenzweig presented reviews on "Origin of the human malaria parasite *Plasmodium falciparum* in gorillas" and "Yersinia pestis kills *Caenorhabditis elegans* by a biofilm-independent process that involves novel virulence factors" respectively, during the journal club. Dr. Madhan, a CBER

Postdoctoral Fellow from the University of Houston, presented a review on "RNase Y in *Staphylococcus aureus* and its role in the activation of virulence genes".

CBER fellows, Shaunté Abdin and Nkem Azu presented a review of "The impact of long-term exposure to space environment on adult mammalian organisms: A study on mouse thyroid and testis." Melissa Greene and Elvedina Mansoor presented a review of "Actin polymerization negatively regulates p53 function by impairing its nuclear import in response to DNA damage."

The journal club was set in place to help students to understand and interpret journal articles and develop public speaking skills.

CBER fellows and scholars also had the opportunity to attend journal clubs and seminars at neighboring institutions, which included the University of Houston, Baylor College of Medicine, Rice University, and the University of Texas Health Science center.

The CBER fellows and scholars also successfully hosted a CBER Symposium that showcased the current research being performed in the CBER program.

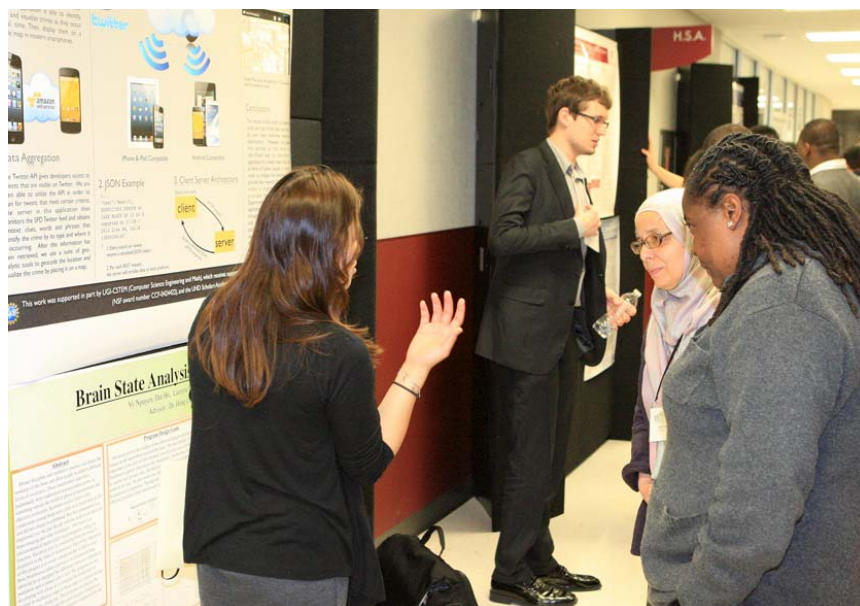




# TSU Hosts DHS-Command, Control and Interoperability Center for Advanced Data Analysis Research Retreat

On April 18-20, 2013, the College of Science and Technology hosted the Department of Homeland Security Center of Excellence for Command, Control and Interoperability Center for Advanced Data Analysis (CCICADA) annual research retreat. Dr. Lila Ghemri organized the conference and chaired the technical committee. Forty-five participants from 7 universities (Rutgers University, University of Illinois at Urbana Champaign, Carnegie Mellon, Purdue, University of Southern California, University of Houston Downtown) attended and presented 26 talks, 15 posters and 3 invited talks.

TSU contributed with 3 presentations and 2 student posters from Lila Ghemri, Haruna Kibirige and Jude Ugiomoh, who have all been supported by CCICADA funding. Dr. Lei Yu, Dean of the COST, welcomed the participants at the gala dinner. Mr. John Dyess, Executive Officer for the Harris County Sheriff's office and guest speaker, presented on data management and analysis issues that law enforcement agencies are facing and invited collaboration between the Sheriff's office and the universities present. The conference was funded by a DHS grant to Dr. Ghemri.



## DHS Summer Research Team Program

The U.S. Department of Homeland Security selected Texas Southern University faculty member Dr. Yuhong Zhang and students Isidro Cervantes and Erik Lege for participation in the DHS Summer Research Team Program for Minority Serving Institutions. The team was assigned to work with the National Center for Border Security and Immigration at the University of Arizona in Tucson.

The objective of the DHS Summer Research Team Program is to provide research opportunities to diverse and highly talented individuals in order to increase and enhance the scientific leadership at Minority Serving Institutions in research areas that support the mission and goals of DHS. In addition, the program is designed to engage faculty, along with undergraduate and graduate

students, in research that will provide them opportunities to understand the mission and research needs of DHS and advance research areas of importance to DHS, while strengthening the talent pool of scientists and engineers. The team participated in the research project for 10 weeks and concluded their summer with a presentation to DHS researchers.



## 2013 CBER Symposium

The theme of the 2013 Center for Bio-nanotechnology and Environmental Research (CBER) was "the Need for Underrepresented Minorities in Biomedical Science." TSU CBER is funded by the NASA Office of Education.

Clockwise from left: Dr. David Owerbach (TSU Office of Research), Dr. Harlan Jones (University of North Texas), Dr. George Fox (University of Houston), Dr. James Briggs (University of Houston), Dr. Lei Yu (Dean, COST), Dr. Adebayo Oyekan (Associate Provost for Research, TSU), Dr. Fawzia Abdel-Rahman (CBER Investigator), and Dr. Jason Rosenzweig (CBER Investigator)

The College of Science and Technology hosted the NASA University Research Center's 2013 CBER Symposium on April 23, 2013 in the TSU Science Center Atrium. The keynote presentation was delivered by Dr. Harlan Jones, Assistant Dean for Recruitment and Outreach, University of North Texas. The symposium featured scientific presentations by CBER scholars and fellows. Students and faculty from TSU, the University of Houston, and the University of North Texas participated in the symposium.



## Research Enhancement Scholars in Mathematics

During the Fall Semester of 2012, two mathematics majors, Jose Cabrera and Jazmine Irving performed research under the supervision of Professors R.M. Nehs and W.E. Taylor. Professor Nehs and Jose Cabrera have been studying the behavior of "Solutions

to various maxi-linear difference equations of the second order." Jose Cabrera, a CREST Scholar, is a participant in the L.L. Clarkson Mathematical Research Experience. Jazmine Irving, also a CREST scholar and a recipient of the COST Research Enhancement

Scholarship is being supervised by Professor Taylor. Their research is in Discrete Dynamical Systems with a focus on Asymmetric Tent-Maps. Miss Irving also began her research during the L.L. Clarkson Mathematical Experience.



# Transportation Studies Conference

The theme of the 2013 Transportation Studies Conference was "Effectively Planning for Freight Traffic in the Houston Region as a Result of the Panama Canal Expansion."

The Department of Transportation Studies hosted its second annual Spring Conference on March 7, 2013. The conference, "Effectively Planning for Freight Traffic in the Houston Region as a Result of the Panama Canal Expansion" was designed to bring together industry officials and the TSU Department of Transportation faculty and students to engage in dialogue about the potential impacts of the Panama Canal expansion on the Texas Gulf Coast region.

Dr. Katherine Turnbull, Executive Associate Director of the Texas Transportation Institute (TTI) served as the Breakfast Keynote Speaker. Following the breakfast sessions, two panel discussions were held. Panelists included representatives from the Port of Houston Authority (PHA), Gulf Winds International, The Greater Houston Port Bureau,



and The Law Office of Reginald E. McKamie. The second panel included representatives from the Houston-Galveston Area Council, Texas Department of Transportation, Traffic Engineers, Inc., and the U.S. Department of Transportation Maritime Administration. The conference included a luncheon with Port Commission Chairman Janiece Longoria serving as the keynote speaker. Chairman Longoria spoke about the impacts of the Panama Canal on the Port of Houston. TSU President Dr. John Rudley, PHA Director Col. Leonard Waterworth, PHA Deputy Executive Director Phyllis Saathoff, PHA Vice President of

Corporate Outreach and TSU Maritime Industry Advisory Board Chair Gilda Ramirez, PHA Director of Corporate Affairs and TSU Alumnus Lisa Ashley, Dr. Lei Yu, Dean of the COST, and Dr. Oscar Criner, Interim Associate Dean of COST were a few of the special guests in the audience.

Dr. Yi Qi, Chair, Department of Transportation Studies presented the Departments' Partner of the Year award to Dan Lynch of Traffic Engineers, Inc. for their outstanding support and contributions to the Department of Transportation Studies.



Left: Port Commission Chairperson Janiece Longoria; Bottom left: Dr. Katherine Turnbull presenting the keynote address; Bottom right: Dr. Yi Qi with TMGT student Peggy Adolph and MTMS student Fred Assabill







### TSU Delegates Visit Taiwan

Delegates with Dr. Sheng-Tung Huang, Dean, Office of International Affairs, National Taipei University of Technology

TSU was represented in a fact-finding mission to Taiwan from March 1-9, 2013 to determine the feasibility of establishing relationships between Historically Black Colleges and Universities (HBCUs) and Taiwanese Universities in STEM disciplines. The specific mission was to consider student and faculty exchanges, and faculty research collaborations. The program was funded by the Thurgood Marshall College Fund (TMCf; Washington DC).

Logistics of the trip were organized by the Taiwan's Ministry of Education. The USA delegation consisted of nine persons including TMCf founder, Dr. Joyce Payne and TMCf's current president Mr. Johnny Taylor Esq. Dr. Gregory Maddox, Dean of the Graduate School and Dr. Audrey Player, Assistant Professor of Biology represented TSU. The delegation visited six very prestigious Taiwanese Universities in five cities, including

Taipei, Taichung, Pingtung, Hsinchu and Tainan. Taiwanese university administrators appeared eager to internationalize and expand their student populations. Nearly all of the Taiwanese universities have classes and/or dual-degree programs in STEM that should help in acclimation of English-speaking students. Over the next few months TMCf expects to establish a Memorandum of Understanding (MOU) with several of the universities.

### TSU-Brazil Alliance

In March 2011, President Obama entered into an agreement with the President of Brazil under which it was agreed to develop a closer relationship among HBCUs and

Brazilian institutions of higher education. The HBCU-Brazil Alliance, of which TSU is a member, was formed to further the objectives of the presidential agreement. This fall,

COST is the host for five Brazilian students, Monica Ruckhaber, Frederico Novack, Luan Fonseca de Medeiros, Patricia Pinheiro, and João Kaled De Cas.

## Summer Programs



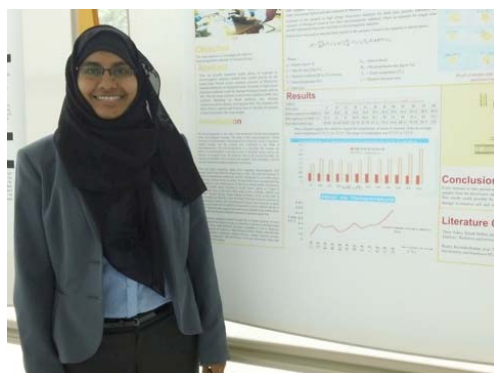
## COST Summer Undergraduate Research Program

This summer, the COST launched its first summer undergraduate research program (SURP) with support of Dean Yu. A total of 16 talented and motivated undergraduate students had the opportunity to experience the excitement of participating in a variety of professional research activities. These students carried out research projects that included studying adverse effects of microgravity and electromagnetic radiation on humans and animals, sustainable production of food and biofuels, volatile organic contaminants in the Houston Metro area, identification of breast cancer biomarkers, use of the mitochondrial genome for species differentiation, development of radio-frequency devices for the reduction of car accidents. Others, in their mentors' laboratories selected projects

according to their interests during this intensive 9 week period. These internship students explored cutting-edge research in STEM fields and become familiar with state-of-the-art instruments. Through this enrichment program, these students gained real hands-on research experience and increased their capability in developing independent research projects.

The COST provided a \$2,000 fellowship to each participating student and a \$1,000 stipend to each faculty mentor as reimbursement for any expenses incurred while mentoring these students. As part of an end-of-the program symposium, all students successfully presented posters on their summer research. Family members of some students also attended the symposium and

celebrated the students' accomplishments. As a final commitment to completing this program, students submitted manuscripts of their research which were combined together in a publication 'Proceedings of COST SURP 2013.' Some students prepared their manuscripts for publication in peer-reviewed journals. With coordination by Dr. Hyun-Min Hwang, students and faculty from 6 departments, including Biology, Chemistry, Engineering Technology, Environmental and Interdisciplinary Sciences, Mathematics, and Transportation Studies participated in this 9 week program. All participating mentors dedicated their time and efforts to train students, who might be future leaders in STEM fields. This program will increase the transition of undergraduate students to graduate programs in STEM fields. Upon completion of the program, participants gave recognition and very positive feedback, a promising sign for the continuation of this program in future years. It is believed that the COST SURP will become one of the most valuable traditions of our college.







Drs. Oscar Criner, Wei Li, and CJ Tymczak with the participants

## STEM Enchantment II CRCN Education and Outreach Program

The theme of the second STEM Enchantment Program was "Climate Change with Innovative Hands-on Science." Students participated in four hands-on classes: air quality, water quality, soil quality, and climate change.

The Center for Research on Complex Networks (CRCN) held its second STEM Enchantment Program, June 17, 2013 to July 12, 2013 at the TSU Science Center. The program was designed for 60 students in grades 6th to 11th. The program was co-funded by a \$5000 grant from NASA. On June 12, 2013, Mrs. Tanishia Pride, NASA representative and the curriculum developer, conducted a training session for the teachers in the program.

To enhance the knowledge of subjects studied, the students participated in four field excursions to the John C. Freeman Weather Museum at the Weather Research Center, the Houston Museum of Natural Science, the Houston Water Works Learning Center, and Moody Gardens in Galveston, Texas. Students received the pleasure of a visit from Mrs. Linda Smith, a

representative from NASA Summer of Innovation project, on July 8.

The students participated in an essay contest on their favorite field excursion and why it was chosen. The winners received Visa gift cards. The participants also received a \$15.00 Subway gift card and presented their winning posters at the "Voyage Back to School" program, hosted by NASA's Johnson Space Center and Space Center Houston, held on August 15, 2013. The essays were judged by Dr. Criner and Dr. Tymczak. The participants received certificates and medals at the end of program ceremony. A Certificate of Leadership and Samsung Galaxy- 2 Tablet was awarded to Artavius Kelly and Joel Puente, chosen by the teachers, for showing excellent leadership during the program.





## Awards and Scholarships

### 2013 COST Awards Ceremony: Acceleration for the Next Generation

The 2013 COST Annual Awards and End of the Year Program was held on April 25, 2013, in the Texas Southern University Science Center atrium. Dr. Oscar Criner welcomed the Honorees and guests and Mrs. Dolly Spencer presented the occasion of the day. Dr. Azime Saydam began the Awards Ceremony by presenting the College Excellence Awards. Dr. Lei Yu presented the Dean's Leadership Awards and Special Recognitions.

Dr. Yu also made special recognition to members of the COST Open House/Event Committee and the faculty and staff who participated in the TSU Annual Faculty/Staff Campaign. The COST received the Total Achievement Award for reaching 100% participation and monetary goals, the Outstanding Accomplishment Award for raising the most money, \$23,429.00, and Dolly Spencer received the Ambassador Tiger Award medal for reaching 100% participation and monetary goals.

Dr. Desirée Jackson presented the Departmental Outstanding Student Awards, Dean's Student Advisory Council Recognitions, College Student Ambassadors Recognitions, Student Scholarship Recognitions, and Special Student Recognitions.

Mrs. Dolly Spencer presented 2012 Homecoming Recognitions from COST. A trophy was awarded to each winner for: Walking Unit- 2nd Place; Trucks/Cars-1st Place COST Alumni Association; Campus Floats-1st Place; Campus Office Decoration- 3rd Place (SB157) and Campus Door Decoration -1st Place (Dean's Office). After a special drawing for faculty participation in TLEC workshops, five iPads were presented to the winners.

All enjoyed the musical entertainment provided by DJ Bluetooth. In addition the audience had the pleasure of a Violin Solo by Alex Jackson and a dance performance by the R. A. A.W. Dance Team.





### COST Excellence Awards

**Distinguished Researcher of the Year:**

Jason Rosenzweig, Ph.D.

**Distinguished Service Award:**

Bobby Wilson, Ph.D.

**Distinguished Staff of the Year:**

Charlotte Whaley

**Distinguished Undergraduate Student of the Year:**

Alfonso Arteaga

### COST Dean's Leadership Awards

**Efficiency and Dedication:**

A. Serpil Saydam, Ph.D.

**Program Assessment:**

Aladdin Sleem, Ph.D.

**Undergraduate Advisement:**

Audrey Player

**Dedicated Service to Students:**

Lulueva A. Nasser

**Student Organization of the Year:**

Health Occupations Students of America

**Outstanding Service in Recruitment at the Northwest Campus:**

Siobhan Tarver

**Outstanding Service to the COST:**

Dean's Student Advisory Council

**Outstanding Committee of the Year:**

Grievance Committee for Faculty and Students;  
Rank, Tenure and Promotion Committee

G, Graduate  
UG, Undergraduate

### COST Faculty and Staff Scholarship

**Undergraduate**

Ariel Bowman, Mathematics  
Chitam Nguyen, Biology  
Destiny Omeire, Engineering  
Jorge Alvarado, Engineering  
Kingsley Sampson, Engineering  
Erin Jones, Biology  
Linda Nyameyo, Biology  
Kayla Burrell, Biology  
Mfonabasi Akpan, Biology  
Tim Oguamanam, Biology  
Michelle Ayers, Biology  
Tommy Quach, Biology  
Ray Mbonu, Chemistry  
Anita Ofori, Biology  
Kristina Curry, Biology  
Sandra Oba, Biology  
Sarah Sejero, Biology  
Benjamin Ogueri, Chemistry  
Tommy Johnson, Biology  
Francis Ogbonnia, Biology  
Larnesia Caulfield, Chemistry  
Jessica Brown, Transportation  
Brian Camp, Biology/  
Chemistry  
Georgesha Ross, Chemistry

**Graduate**

Fadila Ghiat, Computer Science  
Kimberly Gilkes, Biology  
Sandeel Ahmed, Biology  
Ajaya Giri, Environmental and Interdisciplinary Science

### Joseph Flowers Scholarship

Jimmy Pho, Biology  
Ariam Abraham, Biology  
Arete Eigbe, Biology  
Ezeanyika Chukwunweike, Biology  
Alfonso Arteaga, Transportation

### COST Alumni Association Scholarship

Gyu Lee, Biology/Chemistry

### Graduate Research Enhancement Scholarship

Ameena Padiath, Transportation  
Qun Zhao, Transportation  
Sharmila Bhandari, Environmental and Interdisciplinary Sciences  
Olusegun Ogunniyi, Biology  
Baba Tembely, Transportation  
Vernaldo Wright, Transportation  
Enyu Li, Transportation  
Hoda Eltayeb, Biology

### CITGO Scholarship for Computer Science

Ayzha Ward, Undergraduate  
Thomas Metu, Graduate

### Outstanding Student Award

**Aviation Science and Technology:**

Jitendra Bhakta (UG)

**Biology:**

Jennifer Moseley (G)  
Nicolette Manning (UG)

**Chemistry:**

Tamba Gbenda (G)  
Eugene Boakye Ansah (UG)

**Computer Science:**

Chenyu Wang (G)  
Haruna Kibirige (UG)

**Engineering Technology:**

Loai M. Al Brahim (UG)

**Industrial Technology:**

Bennie Jordan, III (G)  
Arizbeth Ruvalcaba (UG)

**Mathematics:**

Kenyon Coleman (G)  
Aqeeb Sabree(UG)

**Physics:**

Hanh Pham (UG)

**Transportation Studies:**

Fred Assabill (G)  
Peggy Adolph (UG)

## Awards and Scholarships

### Tekoa Academy of Accelerated Studies Honors Dr. Oscar Criner

Professor Oscar Criner was honored at the 2nd Bi-Annual Tekoa Academy Accelerated Studies STEM School and InSpire Magazine S.T.E.M. Awards Dinner on December 2, 2012, in Beaumont, Texas.

Dr. Criner received his Ph.D. in applied mathematics from the University of California at Berkeley. He has been working in computer science for over 50 years and has been involved in STEM education for the larger portion of his career.



### BEYA STEM Black Engineer Promotion of Education Award



Dr. Bobby L. Wilson, L. Lloyd Woods Distinguished Professor of Chemistry and Shell Oil Endowed Chair and Professor of Environmental Toxicology is the winner of the 2013 Black Engineer of the Year Award (BEYA) STEM Black Engineer Promotion of Education Award.

BEYA is the nation's largest gathering of STEM professionals and leaders committed to increasing the percentage of underrepresented minorities in the technology workforce. The annual conference is hosted by the Council of Engineering Deans at Historically Black Colleges and Universities, Lockheed Martin Corporation, and US Black Engineer and Information Technology (USBET) magazine. Workforce leaders in industry, education, government, and professionals and students in STEM fields met in Washington D.C. in February 2013 at the annual BEYA STEM Conference to address the challenges of recruitment and retention in STEM and promote opportunities in technical and scientific careers.

### Dr. Yuhong Zhang Receives DHS Award

Dr. Yuhong Zhang from Texas Southern University has been awarded \$50,000 by the U.S. Department of Homeland Security (DHS) Summer Research Program for Minority Serving Institutions for continued research and collaboration with the National Center for Border Security and Immigration (BORDERS).

Dr. Zhang first partnered with BORDERS for the 2012 Summer Research Team Program for Minority Serving Institutions. Her work titled, "Advanced Speech Feature Extraction for Automated Deception Detection," contributed to BORDERS E2E research project, the Automated Virtual Agent for Truth Assessments in Real-Time (AVATAR). The AVATAR uses artificial intelligence and sensor technologies to flag suspicious or anomalous behavior that should be investigated more closely by a trained human agent in the field.

The award will be administered by the Oak Ridge Institute for Science and Education (ORISE). BORDERS looks forward to Dr. Zhang's contributions to the AVATAR's development. Her research is sure to take automated screening technology a step closer to field implementation.





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## College Distinguished Alumni Awards

### **Athena Perkins, M.S. (Aviation Science and Technology)**

Acting Federal Security Director, William P. Hobby Airport, Houston, Texas

Mrs. Athena Perkins attained a Bachelor of Science Degree in Airway Science in 1997 and a Master of Science Degree in Transportation Planning and Management in 2000. Mrs. Perkins has served in leadership roles to include Acting Deputy Assistant Federal Security Director for Screening and Acting Assistant Federal Security Director of Inspections with the TSA since 2002. In August 2011, she was selected as the AFSD of Inspections for HOU/BPT heading up the Aviation, Cargo and Surface programs.



### **Sheri Mitchell, M.D. (Biology)**

Pediatric Clinic, 1213 Hermann Drive Suite 670, Houston, Texas

Sheri Mitchell, MD practices as a Pediatrician in Houston, Texas. Dr. Mitchell graduated from Texas Southern University in 1983 with her Bachelor of Science in Biology. After graduating from TSU, Dr. Mitchell attended Tulane School of Medicine in New Orleans, Louisiana graduating in 1987 with a Doctor of Medicine degree.



### **Christina Zeigler, M.S. (Chemistry)**

The Kinkaid School, Houston, Texas

Ms. Christina Zeigler graduated from Texas Southern University in 2002 with a BS in Chemistry and in 2004 with an MS in Chemistry. She has traveled throughout the United Kingdom and Western Europe on a number of occasions leading student ambassadors on cultural and educational tours. She is currently working in Houston at The Kinkaid School as a chemistry teacher and track coach.



### **LaKeisha Melton, B.S. (Computer Science)**

Cameron International, Houston, Texas

Ms. LaKeisha Melton graduated from Texas Southern University in December 2006, with a major in Computer Science and a minor in Electronic Engineering Technology. Her career began in March 2007 at the Fluor Corporation, a Fortune 500 Company in Sugar Land, Texas. In September 2011, Ms. Melton joined as a Sr. Business Process Analyst with Cameron International, in Houston, TX. She has been working for their Corporate IT Project Systems team for over a year now.



### **Stephanie C. Osuji, B.S. (Engineering Technology)**

Federal Aviation Administration, Houston, Texas

Stephanie attended the University of Texas at San Antonio for one year then transferred to Texas Southern University and obtained a Bachelor of Science degree in Electronic Engineering Technology in 2009. Mrs. Osuji completed an internship with the Federal Aviation Administration at the Houston office (2007-2009). After graduation in May 2009, she was retained by the Federal Aviation Administration where she currently works as an Airway Transportation Systems Specialist.



## College Distinguished Alumni Awards

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### **Renard Thomas, Ph.D. (Environmental Science and Technology)**

Texas Southern University, Houston, Texas

Dr. Thomas is an associate professor of Health Sciences at Texas Southern University where he investigates the mechanisms involved in the toxicity of environmental toxicants at the cellular levels. He graduated from Texas Southern University with a MS in chemistry in 1981 and Ph. D. in Environmental Toxicology in 2001. He has made significant contributions, working to improve STEM education in the TSU science and technology community.



### **Christopher McDaniel, B.S. (Industrial Technology)**

CMH Consultants, Houston, Texas

Christopher McDaniel earned his Bachelor of Science in Industrial Technology in Design Technology from TSU in 2006. While at TSU he earned his first professional job as a Design Drafter with a local subsea engineering company. In May of 2009 he graduated with a Master's Degree in Architecture from PVAMU. Christopher finds time to serve as an educator and Program Chair for the School of Drafting and Design at ITT Technical Institute.



### **Alicia Martin, Ph.D. (Mathematics)**

Channelview High School, Texas Southern University, Houston, Texas

Dr. Alicia Martin is a proud 2005 Summa Cum Laude graduate of Texas Southern University with a major in Mathematics and a minor in Business Administration. She obtained a Masters in Curriculum and Instruction specializing in Mathematics from the University of Houston-Clear Lake in December 2007 and a Doctorate in Educational Leadership specializing in Curriculum and Instruction in December 2011. She is currently serving as an Assistant Principal at Channelview High School.



### **John Metyko, B.S. (Physics)**

The UT MD Anderson Cancer Center, Houston, Texas

John Metyko is a Radiation Safety Specialist at the University of Texas MD Anderson Cancer Center. He earned a B.S. in Physics with an emphasis in health physics from Texas Southern University in May of 2012, graduating with honors. He is currently enrolled in a health physics graduate program through the University of Texas. Prior to attending TSU, John was is a high school educator who also filled the rolls of physics lab assistant and tutor while at TSU.



### **Donald Perkins, M.S. (Transportation Studies)**

City of Houston Council District K, Houston, Texas

Donald Perkins supervises the District K council office. Donald also is the Agenda Director for Council Member Green and works on special projects per the direction of the council member. A graduate of Texas Southern University where he received a Master of Science degree in Transportation Studies, and the University of Louisiana at Lafayette where he received a Bachelor of Arts degree in Urban and Regional Planning, Donald has been a civil servant for over 16 years.





### Jose Doblado Appointed as Airport Manager of Liberty Municipal Airport

December 2011 Magna Cum Laude graduate Jose Doblado was recently appointed as the Airport Manager for the Liberty Municipal Airport in Liberty, Texas. With a Bachelor of Science degree in Aviation Management, he will spearhead a major airport improvement plan that includes a 1200 foot runway extension, construction of twenty T-hangars,

and other significant facility upgrades. The Department of Aviation Science and Technology is extremely proud of Jose and his accomplishments. He is the perfect example of how success is achieved at Texas Southern University. It is the spirit, drive, and hard work of Aviation students and faculty which has made the Department of Aviation Science what it is today.



### 12th Annual TMCF Leadership Conference

Two students from the College of Science and Technology, Alfonso Arteaga, Maritime Transportation, and Shartajeye Wright, Biology, were part of a group of 10 students representing Texas Southern University who attended the prestigious Thurgood Marshall College Fund Leadership Conference, New York City, October 26-30 and received the opportunity to speak directly with, and were interviewed by recruiters for businesses such as Walmart, the CIA, the Department of

Defense, Wells Fargo, and Microsoft.

The conference brought together the top 500 HBCU students from



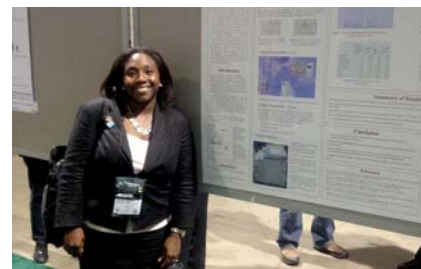
across the nation for a weekend of leadership interaction, financial education, and an opportunity to interact with businesses that were ready to hire them.

COST student Alfonso Arteaga won a \$200 American Express gift card that was raffled by Wells Fargo during the first day of the conference, and Shartajeye Wright lit up the crowd with her skills during a Gallup luncheon plenary.

### Siobhan Tarver Receives SETAC Minority Student Travel Award

Siobhan L. Tarver, Environmental Toxicology PhD Candidate, attended the Society of Environmental Toxicology & Chemistry (SETAC) North America 33rd Annual Meeting in Long Beach, California, November 10th-14th. Siobhan presented her research entitled, "Correlating Environmental and Biological Monitoring using GCMS: Human Exposure to Volatile Organic

Compounds in the Greater Houston Area," in the Biomonitoring of Toxic Chemicals Session at SETAC. Siobhan was awarded a SETAC Minority Student Travel Award which included a registration waiver and admission to a short course at the meeting. Siobhan was also invited to join the Human Health Risk Assessment Advisory Group which is composed of SETAC



members from various backgrounds including academia, consultancy, government, and industry with research focuses on any interactions involving humans and environmental exposures.

## Student Accomplishments



### Chelse Hoover Named Outstanding Master's Student of the Year by SWUTC

The Southwest Region University Transportation Center (SWUTC) has named Chelse Hoover, Texas Southern University's graduate student, the recipient of the Naomi W. Ledé Outstanding Master's Student of the Year Award for 2012. Chelse received a \$1,000 cash award and a plaque.

Annually, the SWUTC presents the Naomi W. Ledé Outstanding Master's Student of the Year Award, honoring the most accomplished master's student

from among three universities, Texas A&M University, University of Texas at Austin, and Texas Southern University.

Chelse Hoover possesses stellar professional leadership. She has a Bachelor of Science in Civil Engineering Technology and is pursuing a Master of Science in Transportation Planning and Management. She is an active member of many organizations, served as an officer in the student chapter of the Institute of

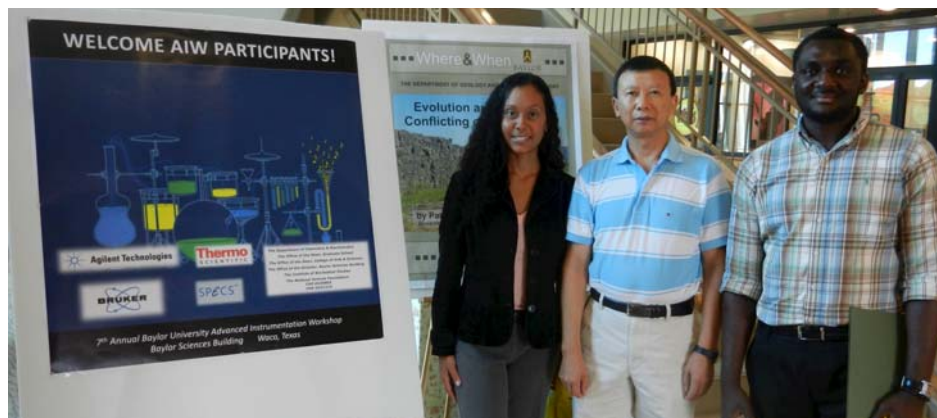
Transportation Engineers, and the vice president of TSU student chapter of Intelligent Transportation Society, while excelling in her graduate studies. Ms Hoover is currently conducting research with Dr. Lei Yu in analyzing the vehicle specific power characteristics in the Houston, Galveston, and Brazoria area. She is also the recipient of the Dwight D. Eisenhower Fellowship for FY 2012, chosen as a Transportation Research Board Minority Fellow.

### Advanced Instrumentation Workshop

Dr. Yuanjian Deng of the Chemistry Department accompanied two chemistry majors, Eugene Boakye Ansah and Angelica D. Jimenez, to the Advanced Instrumentation Workshop at Baylor University in Waco, Texas, on September 21-22, 2012. This two-day workshop provided these students an opportunity to be exposed to and operate state-of-the-art equipment used in small molecule X-ray crystallography, which is not available here in the Chemistry Department. Both students felt that the exposure to various instruments

has broadened their knowledge and helped them with future career planning.

Left to right: Angelica D. Jimenez, Dr. Yuanjian Deng, Eugene Boakye Ansah





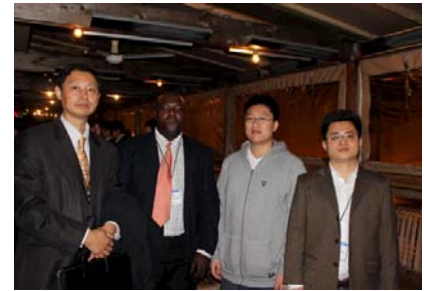
### 2013 TRB Annual Conference Highlights

Students and faculty from the Department of Transportation Studies traveled to the Transportation Research Board (TRB) Conference in Washington, D.C., January 13 -17, 2013. They maintained a dynamic presence in this conference with 12 presentations and 10 conference publications.

Dr Yi Qi, Chair of the Transportation Studies Department, presented on "Dual Right-Turn Lanes Safety," as well as a poster presentation on "Port Cargo Inspections." Dr. Fengxiang Qiao together with Graduate Assistants, Mr. Jinghui Wang and Mr. Xiaobing Wang gave two poster presentations on "Vehicle Emissions on One-Way Versus Two-Way Streets" and "RFID based Stop Sign," respectively. Dr. Sammy Chen presented on "Substandard

Left-Turn Lanes." Dr. Mehdi Azimi gave a presentation on "Safety Impacts of Increasing Lengths of Left-Turn Lanes," and Ms. Maria Burns made two presentations: "Economic Impact of Supply Chain Security" and "Maritime Risk Model." Dr. Carol A. Lewis, Professor and Director, Center for Transportation Training & Research together with Assistant Researcher Latisssha Clark, gave a PILS Presentation to the TRB ABE50-5 Committee.

Khosro Godazi, Associate Director of CTRR, gave a presentation on the "Houston Summer Transportation Institute." Graduate Research Assistant, Ms. Chelse Hoover, gave a poster presentation as a Minority Fellow. Additionally, 5 TSU students were showcased as Eisenhower Fellows: Peggy Adolph, Chelse Hoover, Jamaal Schoby, Vernaldo Wright, and Haixia Liu.



### TSU Maritime Program Graduates Embarking on Exciting Careers

Following graduation, finding a dream job is the sole aspiration of many alumni. For the graduates of TSU's Maritime Program, job hunting was an opportunity to test their skills, and the results have been spectacular!

MTMS graduate, John Pena, joined NOVA International Shipping Services, a division of Cargill International in October of 2012. NOVA is training John in their Vessel Supervisor Program to oversee loading of bulk agricultural cargoes for export from the port of New Orleans, LA. Anthony Flenoy has joined

Houston based Gulf Stream Marine as a Vessel Superintendent Trainee. Gulf Stream Marine operates Stevedore and Terminal Operations services focused upon project cargoes and break-bulk cargoes.

Dexter Khan has joined the staff at the Houston-based Texas Terminals, a full service stevedoring company specializing in international transportation of large, heavy, high value and/or a critical (to the project they are intended for) pieces of equipment that cannot be shipped in traditional ISO containers.

**Jermaine Moore has joined Valero Energy Corporation.**

A group of students from Mr. Robert Morgan's Maritime Environmental Management class attended the National Defense Transportation Association meeting at Brady's Landing



## Student Accomplishments

### Texas Space Grant Consortium Columbia Memorial Crew Scholarship

LSAMP scholars Quaylon Smith and Ayzha Ward will receive from the Texas Space Grant Consortium, a Columbia Memorial Crew Scholarship, \$1,500.00, for the

academic year 2013-2014. The amount will be divided equally in the amounts between the fall and spring semesters. These two students were part of the LSAMP

freshman cohort 2012. Quaylon Smith is a Chemistry major and Azya Ward is a double major: Computer Science and Mathematics. Both students are on the honor roll.

### Kappa Alpha Psi Fraternity, Incorporated Bobby Wilson Scholarship Award

Quaylon Smith, an LSAMP scholar at Texas Southern University majoring in chemistry, and a rising sophomore with a 3.75 grade point average, has been awarded the prestigious "Bobby Wilson Scholarship Award" in the amount of \$1,000.00 for the academic year 2013-2014. This award is given to outstanding minority males with a minimum GPA of 3.5 who have excelled academically in STEM fields. The award was presented at the Annual Black and White Ball of Kappa Alpha Psi Fraternity, Incorporated on Saturday, August 3, 2013.

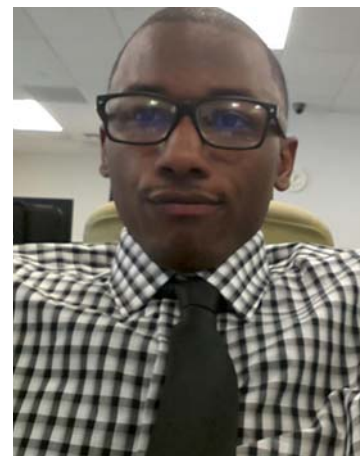
Dr. Bobby Wilson is the L. Lloyd Woods Distinguished Professor of Chemistry, Shell Oil Endowed Chair, Professor of Environmental

Toxicology and Program Director of the Houston Louis Stokes Alliance for Minority Participation program at Texas Southern University.

Dr. Wilson started this academic scholarship award in his name through his fraternity over 15 years ago and has endowed the funding of it through his own personal contributions.

Quaylon Smith is a graduate of the Exemplary "Michael E. DeBaakey High School for Health Professions" in Houston, Texas where he finished in the top 10% of his class.

Quaylon's academic preparedness from high school qualified him to enroll as an LSAMP scholar with support from the National Science Foundation.



Mr. Quaylon Smith

### Hobby-Fest Scholarship

Four Aviation Science & Technology students; Micah Harper (two time winner), Niko Nkululeko, Jarrell Cato, and Jitendra Bhakta received \$1000.00 scholarships on May 4, 2013 for essays and presentations submitted to the Hobby-Fest student contest.

HOBBY-FEST 2013



### Mathematics Outstanding Students

This has been a great year for mathematics graduates of Texas Southern University. Four students have been accepted into PhD programs at various universities: Jessica Poole, Ruqiah Muhammad Sabree, and Aqeeb Sabree have been accepted to the University of Iowa with full funding. Finally, Kenyon Coleman, a candidate for the master's degree has been

accepted into programs at the University of Denver, Howard University and the University of Houston with full funding. Producing high quality graduates continues to be a top priority of the Mathematics Department. The fact that other universities are recognizing the quality of our graduates is a tribute to the dedicated faculty of the department.





### Health Occupations Students of America

Now in its sophomore year as a recognized student organization, the Texas Southern University Chapter of Health Occupations Students of America (HOSA) began the 2012-2013 school year expanding its member list. Membership increased five-fold compared to last year, resulting from a significant influx of freshmen interested in pursuing a career in the medical, dental, and pharmacy fields. Dr. Mario Hollomon and Dr. Warren Williams continued their duties as advisors while senior officers Chi-Tam Nguyen (President), Marisol Solorzano (Vice President), Christine Pham (Treasurer), Tre'lon Land (Historian) and Joan Tran (Secretary) packed the year with many activities for their chapter. Each semester was filled with volunteering opportunities, invitations to medical symposiums, and social events. TSU-HOSA actively engaged in many outreach

programs such as STAAR Fleet tutoring at three local elementary schools (Blackshear, Foerster, Montgomery) during the Spring 2013 semester to increase the passage rate on standardized tests. TSU-HOSA offered tutorials and participated in various benefit runs such as the Houston Rockets' Run and Stride for Stroke. TSU-HOSA's proudest moment was the invitation to represent the College of Science and Technology in the TSU Homecoming Parade as a walking unit. Judges awarded them 2nd place for being one of the most enthusiastic walking units.

To help familiarize HOSA members with the medical school process, officers took members to the University of Texas-Medical Branch in Galveston, TX for their annual Pre-Medical Symposium, where they interacted with the admissions office, deans, current medical students, and toured the medical school.

One of the biggest perks of being a HOSA member is opportunity to compete in the annual State Conference, where thousands of members across Texas come to compete in over fifty health-related competitions. These competitions test knowledge in areas such as biotechnology, physical therapy, and much more. With COST support, TSU HOSA sent twelve members to the competition in Galveston, TX, where eight members placed in the top five finalists in their events. While there, officers participated in leadership exercises. Three members, Chi-Tam Nguyen, Christine Pham, and Richard Saravia qualified to advance to the National Conference.

TSU-HOSA would like to congratulate Marisol Solorzano for graduating with honors and Tre'lon Land for being accepted into the TSU School of Pharmacy.

## Student Organizations

### TSU “Maroon Tails” - Women in Aviation Chapter Established at TSU

In March 2012 a group of aviation students attended the Women in Aviation, International Conference in Dallas, Texas. While attending the conference, their chaperone Ms. Sharon Hudson, Doctoral Graduate Assistant in the Department of Aviation Science and Technology, and a few of the female students attended the workshop to gain knowledge of how to start a student chapter at TSU. Ms. Hudson has worked passionately to create and organize the first chapter of Women in Aviation, International at Texas Southern University. With

much perseverance, Ms. Hudson worked to build the membership base in order to fulfill the requirements of becoming a chapter in this prestigious organization. On November 7, 2012, TSU was granted its Provisional Status as a chapter known as the TSU “Maroon Tails.” As part of this worldwide organization the intent of the chapter is to provide an opportunity for like minded women (and men) to network on a regular basis. The chapter is set to conduct local annual conferences as well as social events and visits throughout the year.

Our goal is for membership to flourish with constituents from every aspect of aviation to include commercial and private pilots, flight instructors, finance directors, lawyers, entrepreneurs and students; and those who are just passionate about being involved with aviation. Women in Aviation, International is a nonprofit 501(C)(3) organization dedicated to providing networking, education, mentoring and scholarship opportunities for women (and men) who are striving for challenging and fulfilling careers in the aviation and aerospace industries.

### Environmental Student Club

Under the guidance of Dr. Hyun-Min Hwang, graduate students in the Environmental Toxicology Program launched the Environmental Student Club (ESC), which is a registered campus organization with the goal to enhance awareness of the TSU community about environmental issues such as sustainability, energy conservation, renewable energy, climate change, environmental pollution, recycling, and smart growth. This club will perform various environmental projects and participate in regional and national competitions. The club is open to all undergraduate and graduate students enrolled in any COST department.

The members participated in two environmental cleanup programs including the annual Trash Bash (March 23, 2013) and the semiannual Adopt-a-Beach

program (April 20, 2013). Trash Bash is one of the largest statewide waterway cleanup programs dedicated to protect the Texas waterways and educate the public about the importance of our water resources using hands-on educational tools.

Through this participation, ESC and the Buffalo Bayou Partnership agreed to collaborate to protect and preserve the quality of Buffalo Bayou. ESC members will be able to use Buffalo Bayou's boats for

field education and sampling. Adopt-A-Beach is a statewide program that is organized by the Texas General Land Office to remove trash from Texas beaches, some of it originating from as far away as South America. ESC members learned how to classify trash, an activity that is very important to develop more efficient trash reduction management. During this summer, ESC members will conduct preliminary projects to construct a rooftop garden and produce biofuels.





### Aviation Science and Technology

Right: AVST Scholarship recipients Jesse Soto and Abril De La Cruz at press conference with Mayor Anise Parker and HAS committee members; Bottom left: Drew Browne with patch; Bottom right: Aviation club presenting scholarship to TSU students

The Department of Aviation Science and Technology had a very productive year and a very successful external review. The department has been reaccredited by the Association of Technology, Management and Applied Engineering (ATMAE). During the academic year, the department improved its web presence with increased curriculum development and recruitment efforts.

2009 Alumnus Drew Browne graduated from the United States Air Force Flight training and is flying KC-10, which is an aerial refueling aircraft. The Aviation Club Awards Banquet & Dinner was held on May 16, 2013 in downtown Houston. The Houston Aviation Club awarded several



scholarships this year to help students achieve their education goals. Abril De La Cruz and Jesse Soto were presented full scholarships to Texas Southern University by President John M. Rudley. TSU was the largest donor for this event.

TSU 'Maroon Tails' Chapter of Women in Aviation, Intl. volunteered by setting up for the Wings over Houston Air Show special needs show in October 2012 and participated in the March of Dimes Walk-a-Thon, April 28, 2013.



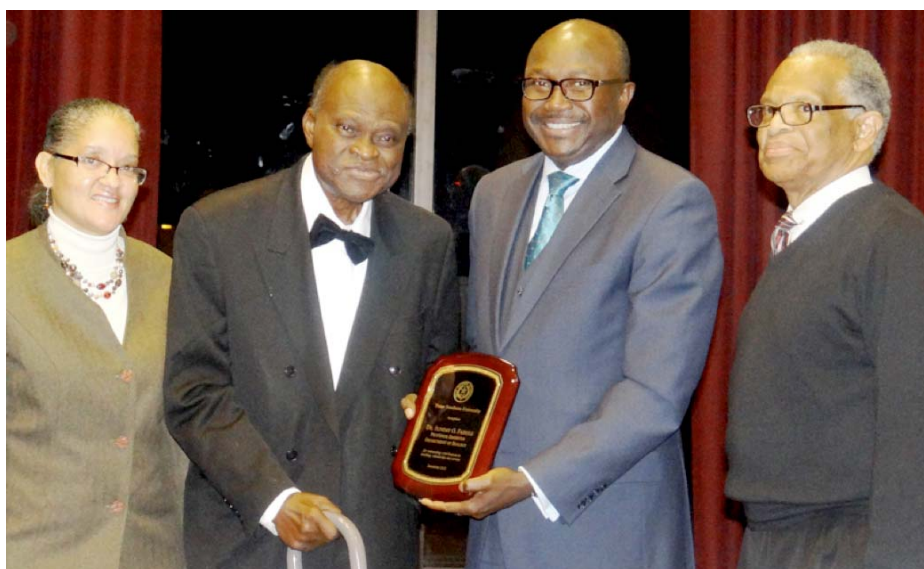
## Department Highlights

### Biology

The Department of Biology at Texas Southern University is the largest and an integral academic unit within the College of Science 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 700 declared majors in Comprehensive, Pre-Health and Pre-Nursing tracks 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 has a robust pre-medical Joint Admissions Medical Program funded by the Texas Higher Education Coordinating Board. JAMP is a unique partnership between all nine Texas medical schools and sixty-five public and private four-year undergraduate institutions. The Medical School Matriculation Program is a partnership with the University of Texas Medical Branch (UTMB) at Galveston funded by NIH Health Careers Opportunity Program. The department also offers an Early Medical School Acceptance



After 40+ years of service to Texas Southern University, Dr. Sunday O. Fadulu, a noted microbiologist and medical researcher most recognized for his work with sickle cell anemia, retired December 31, 2013. From left to right: Dr. Desiree Jackson, Dr. Sunday Fadulu, Provost Dr. Sunny Ohia and Dr. Warren Williams

Program in partnership with UTMB.

The Department of Biology had 38 graduates for the Fall 2012 Commencement (33 undergraduate and 5 Graduate) and 67 graduates for the Spring 2013 Commencement Programs (61 Undergraduate and 6 Graduate). For this period, 15 undergraduates achieved cum laude honors status, with 6 earning magna and 2, summa cum laude. Additionally, 20 new

graduate students were admitted for the 2012-2013 academic year; and 25 applications are currently being reviewed for admission for the Fall 2013 semester.

The faculty have been very active in attracting research funding and publishing their research in peer-reviewed journals. During the 2012-2013 academic year, the faculty published 18 journal articles, one book, one book chapter, and several abstracts in conference proceedings.





### Chemistry

The Chemistry department continues in its efforts to produce competent, qualified graduates. At the May 2013 Commencement, twelve of our chemistry majors were awarded the Bachelor of Science degree in Chemistry, including Eugene Ansah who was Salutatorian for the graduating class.

The Louis Stokes Alliance for Minority Participation program (LSAMP) has played an important role in producing high-performing students in chemistry as well as other majors. These are students

who are focused on their studies and not only do they perform at a high level, they also graduate in four years or less. These are also students who are encouraged to take advantage of every opportunity to expand their knowledge and network with institutions that may afford the opportunity for advanced study after graduation. This is usually accomplished through internships at different facilities around the country. This summer of 2013, eight of our chemistry LSAMP Scholars are doing internships at such places as: Army National

Research Laboratory in Dayton, Ohio; NASA CBER Center, Texas Southern University; U.S. Customs and Border Protection, Southwest Houston Lab.; Jackson State University, Jackson, Mississippi; University of Texas Medical Branch, Galveston, Texas; University of North Texas Health Science Center, Ft. Worth, Texas. In addition to performing at a high level in class, our chemistry students also attend various conferences through the school year and present their research efforts from their summer research experiences.



## Department Highlights

### Computer Science

Department of Computer Science (CS) has a long tradition of commitment to excellence in teaching, research, and student services. The primary mission of the CS Department is to prepare students for entry into the workforce and for graduate study. A secondary mission is to ensure that all students matriculating through the University have a basic understanding of the impact of computing / information technologies upon society and the ability to cope with the infusion of these technologies in the professional or work environments in which they will eventually function.

The CS Department has an active service plan for students, offering the BS degree in Computer Science with a minor, BS degree in Computer Science with Computer Networks Concentration, MS degree in Computer Science, and Ph.D. degree in Environmental Toxicology affiliated with the Department of Environmental and Interdisciplinary Sciences. Our graduates are very well-placed and recognized within the Computer Science profession, at both national and international levels. During the 2012-2013 academic year, over 18 graduate students received various assistantships, and over 30 undergraduate students received scholarships from the department, college and/or university. In addition, a high percentage of students have received external and internal awards.

The curriculum for University-wide classes such as CS 116 and CS



Top: The first Computer Science Career Job Fair on March 22, 2013; Bottom: Computer Science Alumni Party on November 20, 2012

117 have been significantly modified and strengthened; the new version was approved by University and will be implemented beginning Fall of 2013. The first CS career and job fair attracted 8 companies and over 50 TSU students were in attendance. In addition to continued research projects such as the NSF Center for Research on Complex Networks, Homeland Security Center on Command Control and Interoperability for Advanced Data Analysis, Teaching JAVA introductory CS courses using web services, a new NSF award of \$173K was awarded to Drs. Li (PI)

Ghemri (Co-PI) and Khan (Co-PI). Dr. Aladdin Sleem received the COST Dean's Leadership award and Dr. Oscar Criner received the 2nd Bi-Annual Tekoa Academy Accelerated Studies STEM School and InSpire Magazine S.T.E.M. Award. Recent Patents on Telecommunications selected Dr. Li as a board member, and the first place winner of the Computer Sciences and Information Management poster presentation was graduate student Mr. Chenyu Wang awarded by the 2013 Emerging Research National Conference in STEM held in Washington DC.



# Engineering Technology

This past year was packed with various research activities. This summer a few of our students worked out of the NASA Marshall Center in Huntsville, Alabama on overwrapped pressure vessels. This summer the department hosted the 7th Annual TSU Unite Summer Pre-College Engineering Program in collaboration with TSA and UNITE. The 2013 program enrolled 29 students ranging from grades 9 through 12. The students participated in a variety of STEM-related workshops including Biological Sciences, Aviation, Maritime Science, Computer Engineering, Geothermal Energy, Transportation Engineering, Civil Engineering and Project Management. The students also engaged in group research and presented on alternative forms of energy and implementation in America. The Department was proud to add the Research and

Engineering Apprenticeship Program to its summer programming. The program recruited two high school students to participate in a month long rigorous research project. Under mentorship of Dr. Graham Thomas the selected students worked on creating energy efficient single family homes. Additionally, the department has been actively engaged in activities related to the NSF-CRCN project providing the technology transfer component to the overall project and will be hosting a workshop in mid-July.

In April, industry partners from Texas Instruments, BMC Software, Aero Energy, Schlumberger, AT&T, Kinder Morgan, Rolls-Royce Energy Systems, Houston Airway Facilities, and NASA, joined with Engineering Technology faculty to provide a program pre-accreditation review for Electronics Engineering Technology. The National Society of Black

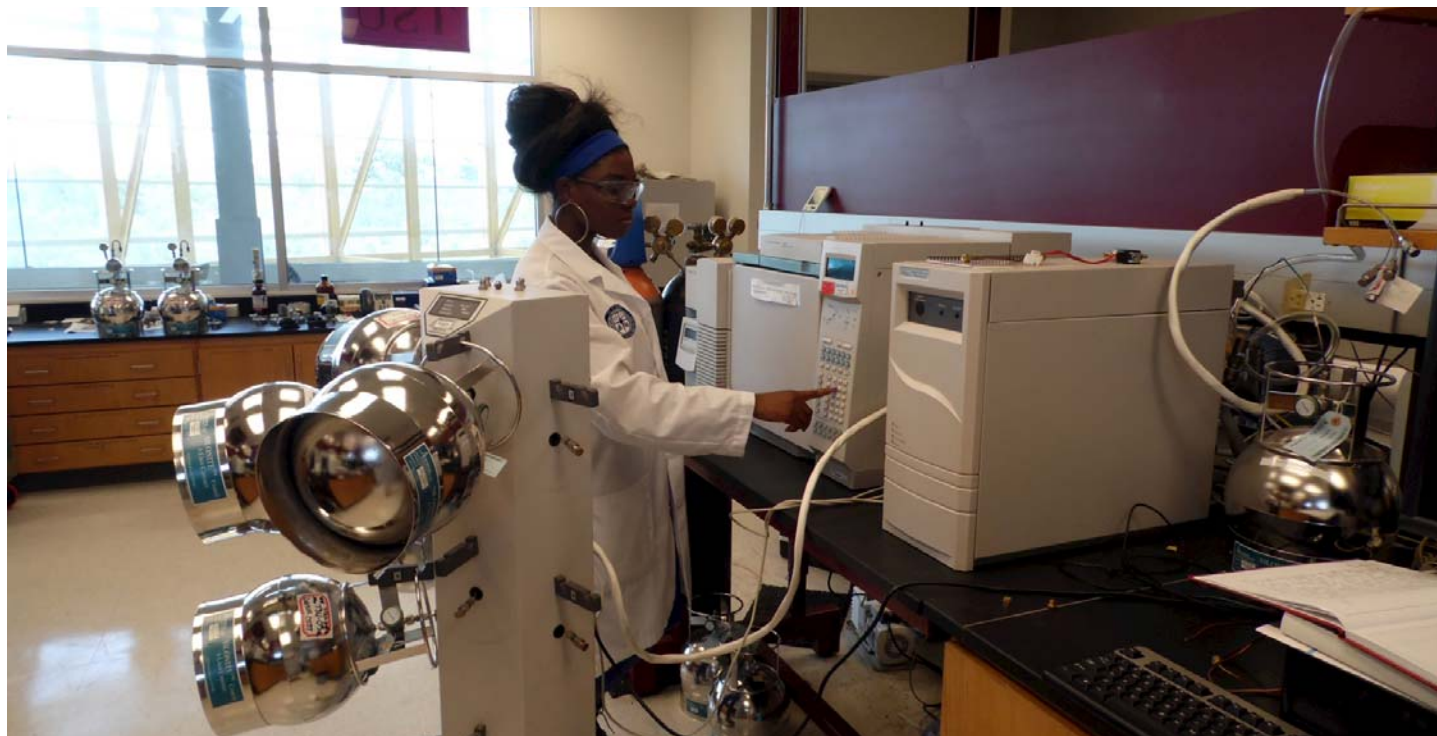
Engineers (NSBE) TSU chapter represented the Engineering Technology Department at the NSBE 39th Annual Convention in Indianapolis, Indiana. The students were given an invaluable opportunity to meet with engineering professionals from across the nation and participate in STEM driven activities.

Finally, the department hosted its first career day in collaboration with the TSU career services. Companies that participated include Baker Hughes, JE Dunn, Ware Technology Services, Space Center Houston, Navy, Houston Police Department, AIG, TW Telecom, Plasticpak, Revention, and Industrial Audio Video. The career day was very well attended with over 60 participants. The students were very appreciative of this opportunity and look forward to participating again next year.

Below Left: Electronics Technology Internal Advisory Board Meeting; Below Right: Engineering Technology Career Day; Bottom Right: Participants at the UNITE Summer Program



# Environmental and Interdisciplinary Sciences



As the academic home of the Environmental Toxicology doctoral and masters programs, the department has changed its name from Environmental Science and Technology to Environmental and Interdisciplinary Sciences in order to accommodate interdisciplinary sciences. Currently, 18 masters students and 35 doctoral students are enrolled in the program. The department does not have an undergraduate program yet. The department is planning to establish the undergraduate program in the near future.

The program graduated six Ph.D. students: Dr. Abidat Lawal (Advisor: Dr. Jason Rosenzweig); Dr. Njkeh Franklin (Advisor: Dr. Maruthi Bhaskar); Dr. Paul Clemens (Advisor: Dr. Renard Thomas); Dr. Gloria Okome (Advisor: Dr. Oscar Criner); Dr. Siobhan Tarver (Advisor: Dr. Bobby Wilson); Dr. Jose Torres

(Advisor: Dr. Desiree Jackson). The program also graduated two thesis track masters students: Fabrice Alex Fankem Fandom (Advisor: Dr. Maruthi Bhaskar) and Edidiong Obot (Advisor: Dr. Renard Thomas) and six non-thesis track students. Dr. Maruthi Bhaskar worked at Oak Ridge National Laboratory for a summer visiting program. Dr. Hyun-Min Hwang

published one journal paper and one book chapter and managed the COST Summer Undergraduate Research Program for 2013. Beginning in the fall of 2012, Dr. Humphreys Uba has been teaching Introductory Geology as a visiting professor.

In the Fall of 2012, some graduate students and Dr. Hyun-Min Hwang launched the Environmental Student Club to increase awareness of sustainability and the environment. The Club participated in two local environmental cleanup programs, including Trash Bash and Adopt-a-Beach. The Club will construct sustainable gardens, including green rooftop gardens, on campus using a hydroponic system, drip-drop system, and rain collection system that will not use municipal water for irrigation.





### Industrial Technology

The primary mission of the Department of Industrial Technologies 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 Manufacturing, Construction, and Communications Industries.

The Department is accredited by the Association of Technology, Management, and Applied Engineering (ATMAE) and has to be re-accredited every six years. In April 9-11, 2013 the Department

conducted an on-site visit for re-accreditation by the ATMAE team of Dr. Randy Peters from Indiana State University and Mr. John Mott from Purdue University.

Recently, the Department submitted a proposal and received funding to assist at-risk students at Jack Yates High School. The objective of this program is to expose students to technological career opportunities in Construction and Design fields and to make them aware of programs available to them at Texas Southern University. The program is expected to begin in the Fall 2013 semester. During the year, the faculty has been busy writing and submitting papers for review and presentation. Drs. Edward Osakue and J. Jonathan Lewis jointly prepared and submitted a

paper to the American Society for Engineering Education (ASEE) and were asked to present at their annual conference in Atlanta, GA, June 23-26, 2013. Dr. Osakue also had a paper published in the Mechanical Engineering Research Journal entitled, "Probabilistic Design with Gerber Fatigue Model" in February 2013.

The Department successfully conducted Career Day Activities where several alumni were asked to share their job related experiences with students. Students were given a chance to ask questions relative to educational training, salary expectations, and future trends in technical fields. Alumni participants included Martina Gallien, DeMarcus Flax, Leininey Mills, and Christopher McDonald.

Alumni addressing the students at the Industrial Technology Career Job Fair held in the TSU Science Center



## Department Highlights

### Mathematics

The Department of Mathematics offers the Bachelor of Science Degree in Mathematics and a minor in Mathematics for students majoring in other academic disciplines at the University, and also service courses for non-major students. During the 2012-2013 academic year, the department served close to four thousand students, offered around 120 courses, graduated nine mathematics majors, one in Summer 2012, three in December 2012 and five in May 2013. In addition, two graduate students, Jessica Poole and Bachlien Dang, received their Master of Science degrees in 2012, and one graduate student will receive his Master of Science degree in August 2013. The graduate students' theses are supervised by Drs. Nehs, Taylor, and Chilakamarri.

This has been a great year for mathematics graduates of Texas Southern University. Four students have been accepted into PhD programs at various universities: Jessica Poole who earned her master's degree during Summer 2012 has been accepted into Iowa State University with full funding for four years. Ruqiah Muhammad Sabree earned her BS degree in May 2012 and has been accepted to the University of Iowa with full funding. Aqeeb Sabree received his BS degree in May 2013 has been accepted to the University of Iowa with full funding. Finally, Kenyon Coleman, a candidate for the master's degree has been accepted into programs at the University of Denver, Howard University and the University of Houston with full



Top: Dr. Saydam, Aqeeb Sabree, Ariel Bowman, Jose Cabrera, Jazmine Irving, Kenyon Coleman, Dr. Evans, Dr. Holmes at the Field of Dreams Conference, Mathematics Alliance, Phoenix, AR.; Middle left: Dr. Frank Sottile, Department of Mathematics, Texas A&M University speaking at the Society of Urban Mathematicians Research Seminar; Bottom left and right: Dr. Della Bell's retirement Party

funding. Producing high quality graduates continues to be a top priority of the Mathematics Department. The fact that other universities are recognizing the quality of our graduates is a tribute to the dedicated faculty of the department.

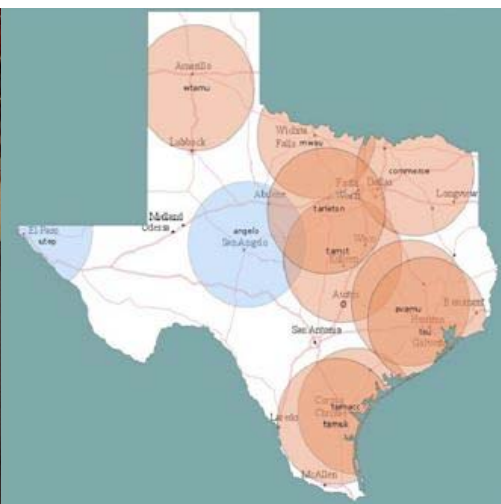
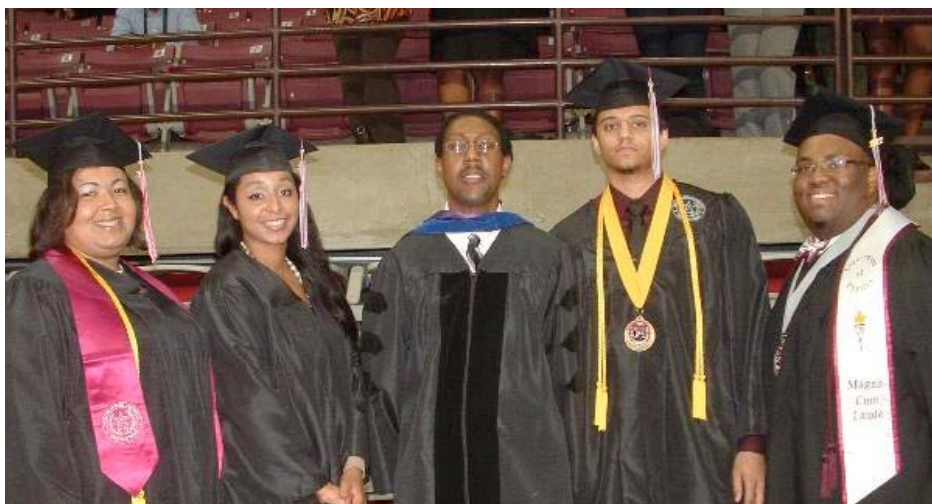
Unfortunately, the department of mathematics lost two very valuable faculty members, Drs. Bell and Ginn due to retirement in August 2012 after 39 and 49 years of service respectively. Dr. Yunjiao Wang was hired as an Assistant Professor in January, 2013.

Dr. Chilakamarri and Dr. Saydam

each published papers in respected journals. Drs. Chilakamarri, Evans, Holmes, Kazakos, Obot, Saydam and Wang gave various presentations at local, regional workshops or conferences. Drs. Chilakamarri, Holmes, Kazakos, Saydam and Wang participated in submission of grants. Dr. Frank Sottile from Texas A&M University gave a Society of Urban Mathematicians (SUM) Mathematics Student Organization Research Seminar which was organized by Dr. Holmes. Dr. Nancy Glenn organized the Statistical Physics Supercomputer Conference II held on May 1, 2013.



## Physics



Left: Physics graduates with Dr. William Harvey at the spring commencement; Right: Composition of the Texas Physics Consortium-TSU, Prairie View A & M University, Tarleton State University, TAMU-Commerce, TAMU-Kingsville, TAMU-Corpus Christi, Midwestern State University, and West Texas A&M University

With the completion of the new Science and Technology building in the Fall of 2013, with dedicated research and academic laboratories, the TSU Physics Department has finished assembling all the components of a nationally vital program. Since 2005, the department has boasted of faculty of national and international research caliber, competitive with regional institutions. It has proven its basic research vitality through a respectable record of research grantsmanship from major agencies, and publications in the leading physics journals, impacting many other departments. It has built a competitive High Performance Computing Center that promises to rival many other similar labs regionally. It offers a competitive modern curriculum emphasizing marketable areas particularly within the energy and medical (radiation) sectors. Its continued success has facilitated the availability of competitive scholarships through the National

Science Foundation (LSAMP), the Office of Naval Research (ONR), and TSU, to name a few. Most importantly, it has proved that it can produce exceptional students able to continue their graduate training at the elite national institutions.

Physics is a very demanding subject requiring a student's commitment to acquiring advanced quantitative problem solving skills coupled with a basic curiosity as to how nature works. It combines mathematics and experimentation. It is indispensable to the applied mathematician. It is the basic discipline underlining most of the modern technological breakthroughs that will become more and more prevalent in the very near future and will dictate the quality of our lives. Any student with a solid physics background can continue in any academic or professional discipline, and will be eagerly sought by companies and research institutions. Physicists are problem solvers.

Beginning in the Fall of 2013, the Physics program at TSU will begin a new chapter in its evolution towards becoming one of the top physics programs in the United States in the production of African Americans with B.S. degrees. Through the visionary leadership of the TSU Administration, the Physics department has merged with seven other programs across the State to form the Texas Physics Consortium (TPC). The TPC will allow the TSU Physics department to recruit and nurture exceptional undergraduates and provide them access to a much broader assortment of tracks in Theoretical and Observational Astrophysics, Medical Physics, and Nuclear Engineering, complementing the existing strengths in Mathematical Physics, Computational Physics, Environmental (nuclear) Health Physics, and Atomic and Molecular Physics. Upper level, third and fourth year, physics courses will be taught through an advanced, interactive, IT System, in real time involving all eight campuses.

### Transportation Studies



Left: Maritime Adjunct Professor Robert Morgan with Maritime Students Ashley Henry, Sarina Williams, and Alfonso Arteaga during TSU Honors Day; Right: Maritime Student of the Year, Fred Assabill with Dr. Qi, Department Chair

The Department of Transportation Studies has a mission to provide comprehensive transportation education that builds on the latest data, systems, and technologies. This mission is exemplified through quality instruction, cutting edge research activities of faculty members, and outstanding service to students and community. Currently, the department offers a Bachelor of Science degree in Maritime Transportation Management and Security, a Master of Science Degree in Transportation Planning and Management, and is affiliated with the Ph. D. program in Environmental Toxicology and the Ph.D. program in Urban Planning and Environmental Policy.

The department provided students various opportunities to work with transportation experts and to participate in research activities. Various workshops, seminars, conferences, and field trips have been offered to students to

enhance their learning outcomes. On March 7, 2013, the department hosted its second annual Spring Conference on "Effectively Planning for Freight Traffic in the Houston Region as a Result of the Panama Canal Expansion." It was designed to bring together industry officials and TSU Department of Transportation faculty and students to engage in dialogue about the current topics and trends in the local transportation industry.

Most importantly, the department offers Research Assistantship opportunities to graduate students so that they can engage in research. In this academic year, 100% of the tenured/tenure-track faculty members have received external grants through internal and external collaborations, which provide 26 graduate students with Research Assistantships. In addition, scholarships sponsored by the Port of Houston Authority (PHA) are provided to undergraduate students on the basis of

outstanding academic performance. During the 2012-2013 academic year, 20 undergraduate students received scholarships from the department, totaling \$160K. In addition, a high percentage of students in the department have received various external and internal awards, indicative of the quality of the students and the academic programs.

The department prepares students for careers in a variety of positions in public and private transportation-related agencies and organizations. The Maritime Transportation Management and Security program began in Fall 2010 and to date has graduated 12 students. Graduates of the program have successfully secured employment at maritime related companies such as Texas Terminals, Inc., Gulf Stream Marine, Inc., Cargill Grain, Inc., and the Port of Houston Authority.



## Research Funding

Name	Award Amount	Title	Agency	Funding Period
Daniel Bessis	\$33,167.00	Center for Gravitational Wave Astronomy	University of Texas at Brownsville and Texas Southmost College/ National Aeronautics and Space Administration	9/1/11-8/31/13
Lila Ghemri	\$15,000.00	Center for Excellence for Command, Control and Interoperability	Rutgers, The State University of New Jersey/ U.S. Department of Homeland Security	7/1/12-6/30/13
Khosro Godazi	\$5,000.00	Eisenhower HBCU Fellowship to Ms. Haixia Lu	U.S. Department of Transportation/Federal Highway Administration	9/1/12-9/1/13
Khosro Godazi	\$10,000.00	Eisenhower HBCU Fellowship to Mr. Jamal Schoby	U.S. Department of Transportation/Federal Highway Administration	9/1/12-9/1/13
Khosro Godazi	\$5,000.00	Eisenhower HBCU Fellowship to Ms. Chelse Hoover	U.S. Department of Transportation/Federal Highway Administration	9/1/12-9/1/13
Khosro Godazi	\$141,453.00	Houston Women in Highway Construction (HWHC) Program	Texas Department of Transportation	2/14/13-1/14/14
Khosro Godazi	\$50,000.00	Summer Transportation Institute (STI)	Texas Department of Transportation	6/5/13-10/31/13
Gwendolyn C. Goodwin	\$48,750	Environmental Justice Assessment for Transportation Projects	Houston-Galveston Area Council/Texas Department of Transportation/Federal Highway Administration/ Federal Transit Administration	9/1/12-1/31/13
Carol Lewis	\$38,000	Agreement between The University of North Carolina at Chapel Hill and Texas Southern University	University of North Carolina at Chapel Hill/ U.S. Department of Homeland Security	7/1/12-6/30/13

## Research Funding

Name	Award Amount	Title	Agency	Funding Period
Carol Lewis	\$388,375.00	Southwest Region University Transportation Center	Texas Transportation Institute/U.S. Deptment of Transportation	8/1/12-9/30/13
Carol Lewis	\$100,000.00	Southwest Region University Transportation Center at CTTR	Texas A&M University System Transportation Institute	12/1/12-8/31/13
Carol Lewis	\$174,407.00	Contract between Traffic Engineers, Inc. and Texas Southern University	Traffic Engineers, Inc.	4/1/13-5/31/14
Carol Lewis	\$358,200.00	Southwest Region University Transportation Center	Texas A&M University System Transportation Institute	8/1/12-1/31/15
Carol Lewis	\$45,000.00	Agreement between The University of North Carolina at Chapel Hill and Texas Southern University	University of North Carolina at Chapel Hill/ U.S. Department of Homeland Security	7/1/13-6/30/14
Wei Li, Christopher J. Tymczak and Lei Yu	\$966,086.00	Center for Research on Complex Networks	National Science Foundation	9/1/12-8/31/13
Wei Li	\$173,131.00	Collaborative Project: Enriching Security Curricula and Enhancing Awareness of Security in Computer Science and Beyond	National Science Foundation/University of Houston	9/1/12-9/1/15
Wei Li, Christopher J. Tymczak and Lei Yu	\$977,375.00	Center for Research on Complex Networks	National Science Foundation	8/1/13-8/31/14
Wei Li, Christopher J. Tymczak and Lei Yu	\$979,416.00	Center for Research on Complex Networks	National Science Foundation	8/1/14-8/31/15



## Research Funding

Name	Award Amount	Title	Agency	Funding Period
David Olowokere	\$24,160.00	2013 UNITE Summer Program	Technology Student Association (TSA)/U.S. Army - Army Educational Outreach Program	3/15/13-9/30/13
David Olowokere	\$3,900.00	Research and Engineering Apprenticeship Program	Academy of Applied Science/Army Research Office	6/17/13-7/31/13
Miao Pan	\$286,649.00	EARS Collaborative Research: Cognitive Mesh: Making Cellular Networks More Flexible	National Science Foundation	9/1/13-8/31/17
Jason Rosenzweig	\$13,588.50	Salary Reimbursement Agreement No. 12-076 between The University of Texas Medical Branch at Galveston and Texas Southern University	University of Texas Medical Branch at Galveston	6/1/13-07/31/13
Shishir Shishodia	\$13,451.00	Joint Admissions Medical Program	JAMP, Austin	09/01/12-08/31/13
Shishir Shishodia	\$12,000.00	Medical School Matriculation Program	UTMB, Galveston	09/01/12-8/31/13
Alamelu Sundaresan	\$83,000.00	Development of Technologies for Elucidation and Mitigation of Bone Loss in Microgravity, Osteoporosis and Inflammatory Disease	United Negro College Fund Special Programs Corporation	11/1/12-10/31/13
Alamelu Sundaresan	\$23,000.00	Joint Research Agreement on "The Effects of Active Hexose Correlated Compound (AHCC) On Human Lymphocyte Performance in Microgravity"	Amino Up Chemical Co., LTD	1/1/13-12/31/13

## Research Funding

Name	Award Amount	Title	Agency	Funding Period
Alamelu Sundaresan	\$375,000.00	Investigation of Countermeasures to Modulate and Augment the Immune System on ISS	United Negro College Fund Special Programs Corporation	6/17/13-3/31/15
C.J. Tymczak	\$643,217.00	Many Body Density Matrix Theory: Excitations and Time Dependant Response	U.S. Army	5/6/13-5/5/16
Bobby Wilson	\$192,500.00	Houston Alliance for Minority Participation - Senior Alliance	University of Houston/ National Science Foundation	9/1/12-8/31/13
Bobby Wilson	\$100,000.00	Minority Leaders Program Materials and Manufacturing Nanotechnology Research	Clarkson Aerospace Corp.	10/1/12-12/30/13
Bobby Wilson	\$2,600.00	2013 Research and Engineering Apprenticeship Program	Academy of Applied Science	2/12/13-10/31/13
Lei Yu and Fengxiang Qiao	\$300,000.00	USDOT UTC TranLIVE	University of Idaho/U.S. Department of Transportation	1/1/12-8/31/15
Yuhong Zhang	\$50,000.00	Advanced Speech Feature Extraction for Automated Deception Detection	Oak Ridge Institute for Science and Education/ U.S. Department of Homeland Security	6/1/13-5/31/14



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Hillar M. Dziedzictwo Braci Polskich. Rozdział Religii od Państwa i Wolność Sumnienia. (The Legacy of the Polish Brethren. Separation of Religion and State and Freedom of Conscience) Published in *Gazeta AMG*, a monthly of the Medical University of Gdańsk, Vol. 22, July, 2012, No. 7 (259), pp. 34-38.

Hillar M. Lelio et Faust Socin: fondateurs du socinianisme, leurs vies et théologie, traduit en français par Christian Callas. Published in *Cahiers Michel Servet*, No. 16, février 2012, pp. 1-26.

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Hillar M. What Does Modern Science Say about the Origin of Religion? in *Dialogue and Universalism* Vol. (4) 2012, pp. 111-120.

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Yakubu MA, Sofola OA, Igbo I, and Adebayo AO. Streptozotocin-induced diabetes attenuates cAMP, nitric oxide synthase, and bradykinin-mediated relaxations. *Bratislava Medical Journal* 113, 2, 59-63, 2012.

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## BOOKS & BOOK CHAPTERS

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Hillar M. Major study: From Logos to Trinity. *The Evolution of Religious Beliefs from Pythagoras to Tertullian* (Cambridge, UK, New York: Cambridge University Press, 2012).

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Kulkarni A, A. Sundaresan, M.Rashid, S.Yamamoto and F.Karkow. Application of diet derived taste active components for clinical nutrition. Book chapter accepted with revision in *Journal of Current Pharmaceutical Design*, April 2013.

## BOOKS REVIEWED

Hillar M. Michel Servet, *Restitution du christianisme*. Édition bilingue, Introduction, traduction, annotations et annexes de Rolande-Michelle Bénin. Tome 1 et 12 (Paris: Honoré Champion éditeur, 2011). Tome 1 pp. 1-867, tome 2 pp. 868-1751. In *Renaissance Quarterly*, Vol. 65 (3) 2012.

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Abdel-Rahman FH, Alaniz NM, Heydari S, Mansoor E, and Saleh MA. Space-Like Environment and the Health of *Caenorhabditis elegans*. 13th RCMI International Symposium on the Health Disparities. San Juan, Puerto Rico, December 9-13, 2012.

Abdel-Rahman FH, Alaniz NM, Heydari S, Mansoor E, and Sapp D. 2012. Impact of Simulated Microgravity on Survival, Reproduction, and Lifespan of *Caenorhabditis elegans*. Presented at NASA Human Research Program Investigators' Workshop. ISS Assembly complete: Gateway to New Destinations. Houston, Texas, February 14-16, 2012.

Ahmed S, J. Eunson, A. Lawal, A.K. Chopra, and J. A. Rosenzweig. The yersiniae response to simulated microgravity: What can we learn about bacterial virulence from a space-like environment, Texas Southern University Research Week, Houston, Texas, April 3, 2013.

Chen X, Y. Qi, G. Liu and J. Wu, Operational and Safety Effects of Using Left-Turn Lanes with Substandard Lengths at Unsignalized Median Openings: Case Study in Houston, Texas, Presented at the 92nd TRB Annual Meeting, Transportation Research Board of the National Academies, Washington, DC, Jan 2013.

Chen X, L. Yu, X. Jia, and H. Gong. Analytical Procedures for Estimating Capacity of Weaving Sections for the Median Exclusive Bus Lanes on an Urban Expressway. Presented at the 92nd TRB Annual Meeting, Transportation Research Board of the National Academies, Washington, DC, Jan 2013.

Handy CR, Vranceanu D. Orthogonal Polynomial Projection Quantization: A New Hill Determinant Formulation.

Joint American Physical Society and American Association of Physics Teachers Meeting, Texas Chapter of the American Physical Society, Stephenville, TX, April 4-6, 2013.

Harvey M, Avery SA, Gueye P. Calculations of the Therapeutic Absorbed Dose and Secondary Neutron Production in Proton Therapy Using the Geant4 Monte Carlo Toolkit. 57th Annual Meeting of the Health Physics Society (HPS), Sacramento, CA. July 22-26, 2012.

Hudson, Sharon H. & Anderson, Angela, A.: Presentation: Flag on the Play: Effective Classroom Communication. Texas Association of Black Personnel in Higher Education (TAPHE) Conference, Austin, Texas, February 13-16, 2013.

Hwang H-M, Buchholz BA, Pederson JR, Young TM. Source identification of carbon in size-fractionated PM and time-resolved bulk PM10 using radiocarbon and molecular source markers, Society of Environmental Toxicology and Chemistry South Central Regional Chapter Annual Meeting, Houston, Texas. May 30-June 1, 2013.

Khan F, Vranceanu D. Minority Student Involvement in High Performance Computing Activities at Texas Southern University. XSEDE Meeting, 2012.

Lawal A, A.K. Chopra, and J.A. Rosenzweig. Type-three secretion-Dependent Low Shear Modeled Microgravity Attenuation of yersiniae Virulence Potential, NASA Human Research Program Investigators' Workshop, Houston, TX, February 16, 2012.

Lewis G, Naidu, N., Yakubu, M., and Wilson, B. Analysis of Lindane and its Metabolites in Rats Feces by HPLC-UV-Vis and MALDI-TOF, 39th Meeting of NOBCCHE, Washington, D.C., September 24-28, 2012.

Noukeu C and Shishodia S. Microgravity Induced Apoptosis In Human T- Lymphocytes. Research Week, Texas Southern University, Houston, Texas, April 2-5, 2013.

Noukeu C, Ibekwe N, and Shishodia S. Simulated Microgravity Induced Apoptosis In Human T- Lymphocytes. North Texas Research Symposium, University of North Texas Health Science Center, Fort Worth, TX, November 3, 2012.

Madison O, Watson, K., Gibson, T., Sundaresan, A., Wilson, B. Determination of Acute Lymphatic Function After Exposure to the Environmental Hormone Diethylstilbestrol (DES) in Earth Bound Gravitational Conditions (1G), 39th Meeting of NOBCCHE, Washington, D.C., September 24-28, 2012.

Mansoor E, Abdel-Rahman, F. Using silymarin and its analogs as an antioxidants agent against environmental stress. Texas Southern University, Research week, April 2-5, 2013.

Qi Y, Y. Salehi and Y. Wang, Investigate Existing Non-Intrusive Inspection (NII) Technologies For Port Cargo Inspections By Discrete-Event Simulation Modeling Approach, Presented at the 92nd TRB Annual Meeting, Transportation Research Board of the National Academies, Washington, DC, Jan 2013.

Qi Y, M. Azimi and L. Yu, Safety Impacts Of Increasing Lengths Of Left-Turn Lanes, Presented at the 92nd TRB Annual Meeting, Transportation Research Board of the National Academies, Washington, DC, Jan 2013.

Qi Y, Y. Wang, S. Chen and L. Yu, Safety Issues In The Design Of Dual Right-Turn Lanes, Presented at the 92nd TRB Annual Meeting, Transportation Research Board of the National Academies, Washington, DC, Jan 2013.

Bhandari S, Ji Woo Seo, Hyun-Min Hwang, Debbie Bennett, and Irva Hertz-Picciotto. High molecular weight polycyclic aromatic hydrocarbons (PAHs) in indoor dust and their health risk. Society of Environmental Toxicology and Chemistry, North America 33rd Annual Meeting, Long Beach, CA, November 11-15, 2012.

## Conference Presentations

Sherman M.A., Baker, V.J. & Hudson, S.H. Learning Cooperation between Texas Southern University' Department of Aviation Science and Technology and the Houston Airport System. Oklahoma State Educational Symposium, Stillwater, Oklahoma, April 17-18, 2013.

Sherman, M. and Dittmer, P. (Utah Valley University and Texas Southern University) Tablet Technology Integration in Collegiate Ground School. Oklahoma State Educational Symposium, Stillwater, Oklahoma, April 17-18, 2013.

Sundaresan A, and Janne E. Reseland. Effects of load on normal human osteoblasts at different stages of differentiation. Internation Space and Gravitational Physiology Conference, Aberdeen, UK, June 2012.

Sundaresan A, Anil Kulkarni, and Koji Wakame. Effects of AHCC (Active Hexose Correlated compound in the liver. Amino Up Company, Functional Foods Conference, Sapporo, Japan, July 2012.

Sundaresan A, K. Marriott, J. Mao, S. Bhuiyan, J. Madry-Taylor, and P. Denkins. The effects of benzofuran 2-carboxylic acid derivatives as countermeasures to counteract immune suppression. NASA Human Research Program, Investigator's Working Group meeting (IWG), Feb 2013.

Sundaresan A, Sukesh Aghara, Terrell Gibson, and Indi Siripirasan. Space radiation and osteoclastogenesis: The effects of radiation and microgravity on bone resorption: International radiation protection conference, Glasgow, UK, 2012.

Sundaresan A. The ISS UR-1 mission-Immunology experiments. International ISS Increments 37 and 38 symposium. Houston, Texas, May 29, 2013.

Vrinceanu D. Angular momentum changing transitions in proton-Rydberg hydrogen atom collisions. Division of Atomic Molecular Optical Physics Meeting, Anaheim California, 2012.

Wang, J., L. Yu, and F. Qiao. Micro Traffic Simulation Approach to the Evaluation of Vehicle Emission on One-way vs. Two-way Streets: A Case Study in Houston Downtown. Presented at the 92nd TRB Annual Meeting, Transportation Research Board of the National Academies, Washington, DC, Jan 2013.

Wilson B. A New Agenda For Higher Education The United States: A Nation in Crisis, 81st Grand Chapter Meeting of Kappa Alpha Psi Fraternity, Houston, TX, August 6-11, 2013.

Wu, Y., L. Yu, G. Song, and L. Xu. Feasibility Study on Fuel Consumption Prediction Model by Integrating VSP and CAN Bus Technology. Presented at the 92nd TRB Annual Meeting, Transportation Research Board of the National Academies, Washington, DC, Jan 2013.

Yakubu MA. Potential therapeutic targets for stroke and traumatic brain injury, 2nd International Conference and Exhibition on Neurology and Therapeutics," (Neuro-2013) during Chicago, IL, June 17-19, 2013.

Yakubu MA. The Southern Regional Education Boards (SREB)-State Doctoral Scholars Program: 19th Annual Compact for Faculty Diversity Institute on Teaching and Mentoring, Tampa, FL, October 25-28, 2012.

Zhao, Q., L. Yu, and G. Song. Comparison of Micro-scale Fuel Consumption Models based on VSP and Ln(TAD) for Light-duty Vehicles on Urban Roads. Presented at the 92nd TRB Annual Meeting, Transportation Research Board of the National Academies, Washington, DC, Jan 2013.

## CONFERENCE PROCEEDINGS

Ahmed OK, Yakubu, MA, Sofola, OA, Oyekan, AO. Effects of Testosterone on Vascular Reactivity in Male Sprague - Dawley Rats Fed a High Salt Diet. FASEB J March 29, 2012 26:872.27

Brinkley, N, Smith-Baker, C, Sapp, JB, Bessac, B, Oyekan, AO, Yakubu, MA. Pesticides Exposure Impairs Vascular Reactivity in Rat Aorta. ABSTRACT ID: 2648 Poster Board -345 <http://www.toxicology.org/ai/pub/tox/2013ToxSup.pdf>

Naidu, NV, Munyu S., Yakubu, MA. Analysis of BPA and its Metabolites in Biological Samples by HPLC-UV-Vis AND MALDI-TOF. EB2013 LB636 page 23 [http://experimentalbiology.org/EBArchive/EB2013/pages/upload/file/30043\\_late-breaking\\_web.pdf](http://experimentalbiology.org/EBArchive/EB2013/pages/upload/file/30043_late-breaking_web.pdf)

Naidu, NV, Smith-Baker, C., Yakubu, MA. Analysis of Lindane and Metabolites by HPLC-UV-Vis and MALDI-TOF. FASEB J March 29, 2012 26:1b590

Naidu, NV, Yakubu, MA. HPLC-UV-Vis and MALDI-TOF Analysis of Rat Serum, Urine, and Feces to Determine Lindane and Metabolites. ABSTRACT ID: 2647 Poster Board -344 <http://www.toxicology.org/ai/pub/tox/2013ToxSup.pdf>

Omrebokhae, JI, Munyu, S, Oyekan, AO, Yakubu, MA. Vascular Signaling Pathways for Bisphenol A. FASEB J March 29, 2012 26:1050.16

Osagie, N., Oyekan, AO, Yakubu, MA. Effects of PPARgamma Activation and the Role of HO-1 in Acute SAH-Induced Fall in Cerebral Blood Flow in Rat Accepted for EB2013 LB502 pg 22 [http://experimentalbiology.org/EBArchive/EB2013/pages/upload/file/30043\\_late-breaking\\_web.pdf](http://experimentalbiology.org/EBArchive/EB2013/pages/upload/file/30043_late-breaking_web.pdf)

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Handy CR. CASE-Study III Texas Southern University. SPIN-UP workshop, University of Texas at Austin, May 4-6, 2012.

Handy CR. Orthogonal Polynomial Projection Quantization: A New Hill Determinant Formulation. Joint American Physical Society and American Association of Physics Teachers Meeting, Texas Chapter of the American Physical Society, Stephenville, TX, April 4-6, 2013.

Hillar M. Creationism and Evolution: Misconceptions about Science and Religion. Texas Southern University, Houston, TX, December 3, 2012.

Hillar M. Seminar for Polish Philosophical Society, Editorial Board of "Dialogue and Universalism," and Institute of Philosophy and Social Sciences of the Polish Academy of Sciences, „Rozwój Hellenistyczno-Judeo-Chrześcijańskich Wierzeń Religijnych od Pitagorasa do Tertuliana," ("Evolution of the Hellenistic, Judaic, and Christian religious Beliefs from Pythagoras to Tertullian") Warsaw, Poland, May 29, 2012.

Hillar M. Seminar for Radiation Safety Training Workshop, "Biological Effects of Radiation," Texas Southern University, Houston, October 26, 2012.

Hillar M. Seminar for Religion, Ethics and Society Club, "Does Archaeology Prove the Existence of Jesus? An Alternative Explanation." Houston, TX, October 27, 2012.

Hillar M. Seminar for Religion, Ethics and Society Club, "Naturalistic Spirituality: Beauty of Our Earth and Wisdom of Sages Houston, August 25, 2012.

Hillar M. Seminar for the Editorial Board of "Dialogue and Universalism," "Dziedzictwo Braci Polskich: Rozdział Religii od Państwa i Wolność Sumienia," ("The Legacy of the Polish Brethren: Separation of Religion from State and Freedom of Conscience") Warsaw, Poland, June 2, 2012.

Hillar M. Seminar for the Science and Religion Discussion Group, Christ the King Lutheran Church, "Philo of Alexandria: Bridging the Hebrew Religion with the Greek Philosophy and Religion," Houston, TX, May 18, 2012.

Rosenzweig JA. Ribonucleases and yersiniae stress Responses, The University of Toronto Hospital for Sick Children Molecular Genetics and Institute of Medical Science, June 13, 2013.

Sundaresan A. Load in Osteoblast function, University of Oslo Priority lecture, March 12, 2013.

Sundaresan A. Signalling mechanisms of bone loss in weightlessness, Plenary Speaker, 6th annual Scandinavian Society of Biomaterials, Hafjell, Norway, March 16, 2013.

Sundaresan A. Immune suppression in microgravity. Topical Team in Immunology, European Space Agency, Munich, Germany, March 27-30, 2012.

Tymczak CJ. Boron, the Carbon Mimic. American Chemical Society's 68th Regional Meeting, Baton Rouge, November 4th, 2012.

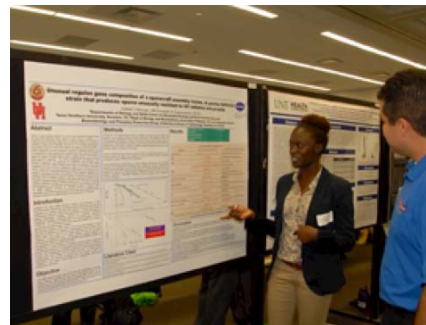
Tymczak CJ. Many-Body Density Matrix Theory. Texas A&M University at Galveston, March 28, 2012.

Tymczak CJ. The FreeON code initiative: A General Purpose Linear Scaling Quantum Chemistry Code. Physics Department, Texas Tech University, March 12, 2012.

Vrinceanu D. Angular momentum changing transitions in proton-Rydberg hydrogen atom collisions. Division of Atomic Molecular Optical Physics Meeting, Anaheim, California, 2012.

Vrinceanu D. The quest for antimatter. Physics Department Colloquium, Indiana University - Purdue University at Indianapolis, March 28, 2013.

Vrinceanu D. Z-domain analysis of noisy time series, Assessing Dynamics of living Cells and Biointerfaces, Bucharest, Romania, Sep 26-27 2012.



## Seminars Hosted

Fundamental Constants: Theory and Experiment, Dr. Ulrich D. Jentschura, Associate Professor of Theoretical Physics Missouri University of Science and Technology Rolla, Missouri, August 17, 2013.

Platinum Mediated C-H and C-O Bond Formation, Dr. Bruce M. Prince Department of Chemistry University of North Texas, Denton, Texas, August 9, 2013.

Ionic Liquids – Science and Applications, Dr. Edward L. Quitevis, Texas Tech University, Lubbock, Texas, March 20, 2013.

Development and Application of Link-Level Vehicle Emission Inventory for the Metropolitan Area, Madhusudhan Venugopal, P.E., Air Quality Specialist Providence Engineering and Environmental Group, LLC, Irving, Texas, March 7, 2013.

An Effective Approach to Identification Fusion, Dr. Marvin N. Cohen, IRTA, Inc., Atlanta, Georgia, Feb 27, 2013.

A Brief History of Carbon, Dr. Robert F. Curl, Jr., 1996 Nobel Laureate in Chemistry, Rice University, Houston, Texas, February 22, 2013.

Source Apportionment Methods to Assess Effects of Urban Traffic on Ambient Air Quality, Suresh Raja, Providence Engineering and Environmental Group, LLC, Irving, Texas, February 7, 2013.

Boundary Control Approach to Inverse Spectral and Dynamical Problems, Sergei Avdonin, University of Tennessee, Chattanooga, Tennessee, January 28, 2013.

Technology Transfer and Technology Transfer Models – Issues and Insights, David Olowokere Ph.D., P.E., Director of Technology Transfer, NSF Center for Research on Complex Networks, Texas Southern University, Houston, Texas, January 17, 2013.

Urban-Scale Wireless Networks in Unlicensed sub-GHz Bands, Edward Knightly, Professor, Electrical and Computer Engineering, Rice University, Houston, Texas, December 6, 2012.

Traverse Between Semantic and Relational DBMS: Case Study: "System for the validation of Human Cell Lines", Nevine Eltonsy, Department of Systems Biology, MD Anderson Cancer Center, Houston, Texas, December 5, 2013.

Clique Relaxation Models in Network Analysis, Sergiy Butenko, Associate Professor, Department of Industrial and Systems Engineering, Texas A&M University, College Station, Texas, November 8, 2012.

Natural Language Processing Techniques for Cybersecurity and Fraud Detection, Rakesh M. Verma, Computer Science Department, University of Houston, Houston, Texas, October 31, 2012.

In-network Storage Assisted Virtual Backbone in DTN, Xiaoyan Hong, Department of Computer Science, University of Alabama, Tuscaloosa, Alabama, October 25, 2012.

Complexity, Complex Networks, and Digital World View, Professor Oscar Criner, Department of Computer Science, Texas Southern University, Houston, Texas, October 11, 2012.

Below: CBER fellows and scholars providing STEM experience to school students participating in the CBER Super-Saturday program





## Dissertations and Theses

### Dissertations

Njekeh Franklin Caspa, "The Impact of Environmental Stressors on Maternal and Infant Health Outcomes: Pilot Study for Participants Enrolled in Neighborhood Centers Inc. SUNNY FUTURES Healthy Start Program Ph.D. Dissertation, Texas Southern University, Spring 2013 (Advisor: Dr. Maruthi Bhaskar)

Paul Leslie Clemens, "Demonstration of Photovoltaic Properties of Titanium Dioxide Coated Single Wall Carbon Nanotubes Manufactured by Novel Sonochemical Technique," Ph.D. Dissertation, Texas Southern University, Spring 2013 (Advisor: Dr. Renard Thomas)

Gloria E. Okome, "Models of Fate and Transport of Pollutants in Surface Waters," Ph.D. Dissertation, Texas Southern University, Spring 2013 (Advisor: Dr. Oscar H. Criner)

Siobhan Tarver, "Correlating Biological and Environmental Monitoring Assessing the Risk of Human Exposure to Volatile Organic Compounds in the Greater Houston Area," Ph.D. Dissertation, Texas Southern University, Spring 2013

(Advisor: B.L. Wilson)

Jose Anibal Torres-Hernandez, "Neurotoxic Response in Astrocytes to Acute Exposure of Simulated Microgravity," Ph.D. Dissertation, Texas Southern University, Spring 2013 (Co-Advisors: Dr. Desiree Jackson and Dr. James DuMond)

### Theses

Akhter, Asma, "Measuring The Trace Metals (Mo, Cd, Sn, U, and Pb) In Drinking Water From The Houston Area By Inductively Coupled Plasma Mass Spectroscopy (ICP-MS)," M.S. Research Thesis, Spring 2013 (Advisor: B.L. Wilson)

Blackwood, Sienna M., "The effect of Epigallocatechin gallate (EGCG) on *Caenorhabditis elegans* exposed to Modeled Microgravity," M.S. Research Thesis, Spring 2013 (Advisor: Dr. Fawzia Abdel-Rahman).

Greene, Melissa, "Curcumin Suppresses Simulated Microgravity Induced Epigenetic changes," M.S. Research Thesis, Summer 2013. (Advisor: Shishir Shishodia)

He, Jerry, "Characterization of Real-World VSP Distribution for Emission Analysis," M.S. Research Thesis, Fall 2012 (Advisor: Lei Yu)

Heydari, Sedigheh, "The Humble Nematode *Caenorhabditis elegans* Conditions under Simulated Microgravity," M.S. Research Thesis, Summer 2012 (Advisor: Dr. Fawzia Abdel-Rahman).

Mansoor, Elvedina, "Using silymarin and its isomers as an antioxidative agent against environmental stress," M.S. Research Thesis, Fall 2012 (Advisor: Dr. Fawzia Abdel-Rahman)

Noukeu, Christellia, "Microgravity Induces Apoptosis in Human T-Lymphocytes," M.S. Research Thesis, Spring 2013. (Advisor: Shishir Shishodia)

Parks, Kelsey, "The Effects of Pre- and Perinatal Exposure to Arsenic on Gene Expression in the Fetal Rat Kidney," M.S. Research Thesis, Fall 2012 (Advisor: Desiree Jackson).

Sapp, Dominique, "Toxicity and Biological effects of Azo dyes on *Caenorhabditis elegans*," M.S. Research Thesis, Fall 2012 (Advisor: Dr. Fawzia Abdel-Rahman)

Wang, Jinghui, "Operating Mode Distribution Characteristics of Different Road Topological Configurations and their Effects on Emissions," M.S. Research Thesis, Spring 2013 (Advisor: Lei Yu)

## College of Science and Technology Student Organizations

American Drafting & Design Association (ADDA)

Beta Beta Beta Biological Honor Society

Environmental Toxicology Graduate Students Association (ETGSA)

Health Occupations Students of America (HOSA)

Society of Physics Students

Society of Urban Mathematicians (SUM)

Texas Southern Computing Society (TSCS)

The Associated General Contractors (AGC) Student Chapter

The Construction Club

The National Association of Minority Contractors (NAMC)

TSU Student Chapter of the American Chemical Society (ACS)

TSU Student Chapter of Institute of Transportation Engineers (ITE)

TSU Student Chapter of National Society of Black Engineers (NSBE)

TSU Student Chapter of the National Organization for the Professional Advancement of Black Chemists and Chemical Engineers (NOBCChE)

Environmental Student Club (ESC)



## FALL 2012

### BACHELOR OF SCIENCE

#### Aviation Science Management

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Onyi O. Duruji  
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Arnecia Faye Flowers  
Kevin A. Granderson  
Courtney Ryan Grant  
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Steffen Jerome Marshall  
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Tiara L. Willis

#### Chemistry

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Tina Simone King  
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#### Civil Engineering Technology

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Brandon Wayne Mosley  
Papa Saloum Travare  
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## **Electronics Engineering Technology**

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Hassan Ahmed Almatawah  
Jashaad Leron Gaines  
Bryan Joseph Jones  
Victor Chukwudi Okafor  
Jeremy G. Richardson  
Dorrian David Toussant  
Donte Earl Wilkins

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Sean A. Reynolds  
Schineatha Lynn Rodriguez<sup>2</sup>

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Sabree<sup>2</sup>  
Narada Rason Walker<sup>1</sup>

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Hanh Pham

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Tiffany Lynette Gurley

### **Computer Science**

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## **Industrial Technology**

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## **Mathematics**

Kenyon Coleman

## **Transportation Planning and Management**

Kadidiatou Diallo  
Chelse Loren Hoover  
Cory D. Jerome  
Po Hsien Kuo  
Da Li  
Ying Li  
Michael Burke Miller  
Ibrahima Guirama Tembely  
Jinghui Wang  
Vernaldo Michael Wright  
Fei Yu  
Peina Yuan

## **DOCTOR OF PHILOSOPHY**

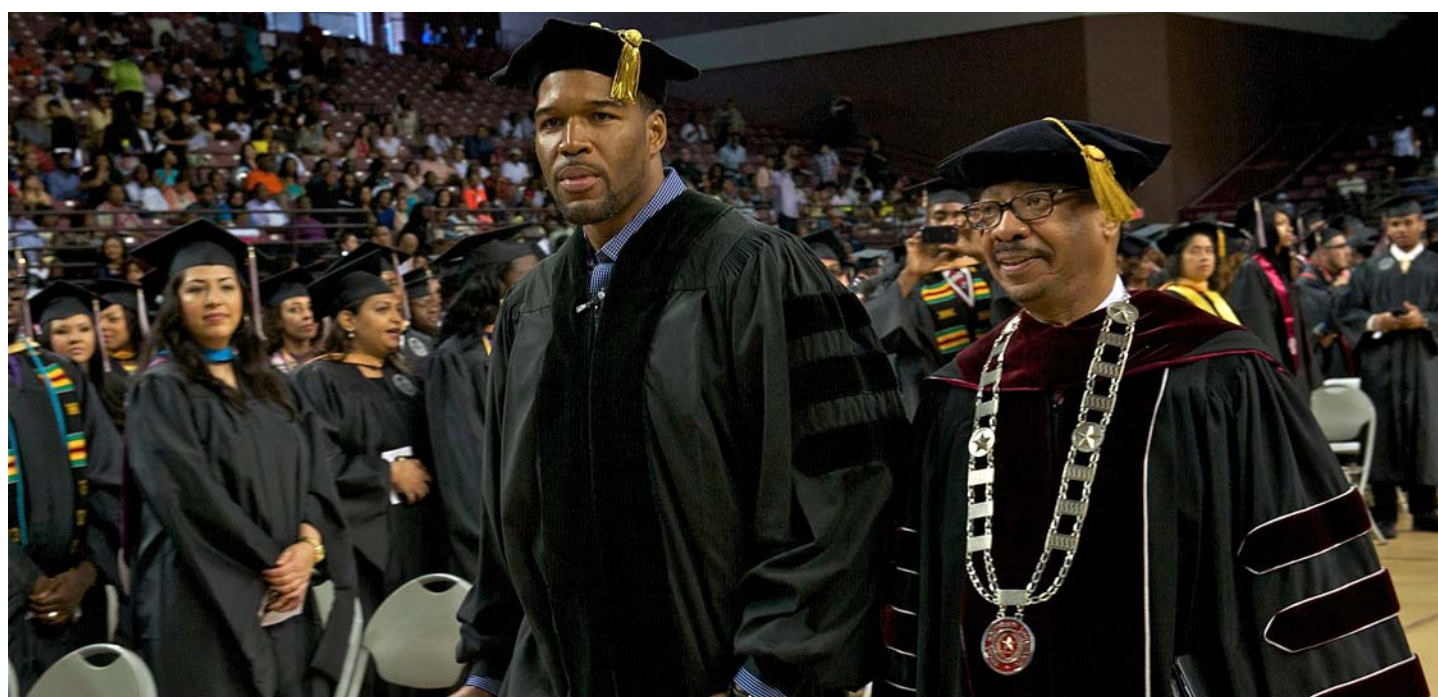
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Gloria E. Okome  
Siobhan L. Tarver  
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<sup>1</sup> Summa Cum Laude

<sup>2</sup> Magna Cum Laude

<sup>3</sup> Cum Laude



# Faculty and Staff

---

## Aviation Science and Technology

**Bailey**, John, Adjunct Instructor  
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**Brown**, Calvin, Adjunct Instructor  
**Florent**, Gertrude, Admin. Assistant  
**Glass**, Charles, Assistant Professor  
**Hall**, Tasjah, Adjunct Instructor  
**Lewis**, Fred, Adjunct Instructor  
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**Abdel-Rahman**, Fawzia, Professor  
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**Miranda**, Hector C., Associate Professor  
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**Player**, Audrey, Assistant Professor  
**Rosenzweig**, Jason, Assistant Professor  
**Shishodia**, Shishir, Associate Professor  
**Sodipe**, Ayodotun, Assistant Professor  
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**Abrar**, Max, Adjunct Instructor  
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**Lin**, Cheng Feng, Assistant Professor  
**Lu**, Zaixin, Postdoctoral Fellow, CREST  
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**Singh**, Tarsem, Professor  
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**Talusani**, Reddy, Adjunct Instructor

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**Wu**, Tong, Instructor  
**Wyatt**, Marsha, Visiting Instructor

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**Vrinceanu**, Daniel, Assistant Professor  
**Vrinceanu**, Isabela D., Adjunct Asst. Professor

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**Lashore**, Denita, Sr. Administrative Asst.  
**Lewis**, Carol, Professor and Director of CTTR  
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**McGraph**, Michael, Adjunct Instructor  
**McKamie**, Reginald, Adjunct Instructor  
**Miller**, Michael, Visiting Instructor  
**Puccini**, Giovanni, Adjunct Instructor  
**Qi**, Yi, Associate Professor and Chair  
**Qiao**, Fengxiang George, Asso. Professor  
**Rollins**, Mary, Research Assistant  
**Simmons**, Paul, Adjunct Instructor  
**Williams**, Ursula, Program Coordinator  
**Yu**, Lei, Professor and Dean



# COLLEGE OF SCIENCE AND TECHNOLOGY ADMINISTRATION



Lei Yu  
Professor and Dean

## OFFICE OF THE DEAN



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Professor and Interim  
Associate Dean



Shishir Shishodia  
Associate Professor and  
Interim Associate Dean



Desirée A. Jackson  
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Assistant Dean



Evangeline Pearson  
Director of Advisement



Charlotte Whaley  
College Business Admin. III



Dolly Spencer  
Sr. Administrative Assistant



Tioka Freeman  
Administrative Assistant

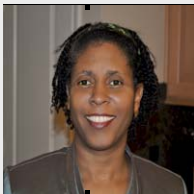


Peter Olamigoke  
Tech. Support Specialist

## AVIATION SCIENCE AND TECHNOLOGY



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Professor and Interim  
Chair



Gertrude Florent  
Administrative Assistant

## BIOLOGY



Warren E. Williams  
Associate Professor and  
Interim Chair



Helen P. Cockrell  
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## CHEMISTRY



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Professor and Chair



Delois S. Johnson  
Administrative Assistant

## COMPUTER SCIENCE



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Professor and Interim  
Chair



Nadereh Jahedmotlagh  
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