

the EXPLORER Newsletter

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

CONTENTS

PROGRAM ASSESSMENT WORKSHOP

Page 1

FACULTY RETREAT AND STAFF RETREAT

Page 2

FRESHMAN ORIENTATION

Page 3

TEXAS PHYSICS CONSORTIUM

Page 3

TSU-BRAZIL ALLIANCE

Page 4

CRCN STEM ENCHANTMENT PROGRAM

Page 4

FACULTY SPOTLIGHT

Page 5

PROGRAM SPOTLIGHT

Page 5

STAFF SPOTLIGHT

STUDENT SPOTLIGHT

Page 6

ALUMNI RAVES

Page 6

STUDENT ACCOMPLISHMENTS

Page 7

SCHOLARLY AND CREATIVE ACTIVITIES

Page 8

EDITORIAL

LEI YU

Editorial Director

OSCAR H. CRINER

Editor in Chief

SHISHIR SHISHODIA

Editor

DESIRÉE JACKSON

Associate Editor

DOLLY SPENCER

Associate Editor

HECTOR C. MIRANDA

Photographer



Fall 2013 Program Assessment Workshop

As part of the Fall 2013 Opening Faculty Meeting, the College of Science and Technology held a workshop titled "Closing the Loop: Improving Academic Programs using Assessment Findings." The main goal of the workshop was to highlight the importance of program assessment not only as an accountability and accreditation requirement, but also as a very important tool for improving academic programs. The workshop had two sessions with two guest speakers who covered various aspects of the topic in each session.

The first session was titled "From the Ideal to the Real: How High-Impact Assessment Practices Can Benefit MY Program's Success" and the speaker was Dr. Craig Morton, the Associate Director for the Office of Planning and Assessment at Texas Tech

University. In his presentation, Dr. Morton highlighted the assessment life cycle and went through its various phases. He also addressed some of the concerns that are usually raised by some faculty members regarding assessment. Dr. Morton also shared some practical advices based on his experience as a member of the Office of Planning and Assessment at Texas Tech University.

The second session was titled "Value-Added Benefits to Assessment for Program Improvement" and the speaker was Dr. Catherine Parsonault, the Associate Vice Provost for Planning and Assessment at Texas Tech University. In her presentation, Dr. Parsonault started by explaining the differences between course assessment and program assessment to set the stage for

the rest of her presentation. She presented the elements of an effective assessment plan and how it can be used to reflect the measure and report the effectiveness of academic programs. She also shared several assessment planning resources that are available publicly and can be used by program directors to develop an efficient assessment plan.

The workshop was well received by COST faculty members as well as several guests from outside the college who attended the workshop.

Dr. Catherine Parsonault presenting at the COST opening faculty meeting.





2013 COST Faculty Retreat

The COST faculty held a retreat at the Crowne Plaza Medical Center to consider retention and progression issues of students. The major theme was how to create the successful STEM student.

The guest speaker, Dr. Leonard Burge, Dean of the College of Engineering at Tuskegee University, discussed how mathematics is a basic tool at the heart of engineering and all STEM fields. He claimed that we are losing the future workforce due to a mindset that certain demographics are unacceptable for the

Engineering field (e.g. African Americans, Hispanic Latinos, and Native Americans). He also claimed that unless we produce at least 10,000 engineers more per year over the next 5 years (a mandate made by President Obama), we will be facing a matter of national security. Dean Burge's recommendations to address this problem were to: (1) Change the perception of STEM among the American youth by targeting schools beginning with the 3rd grade, (2) Develop a transition program to teach K-12 students, their parents, and

teachers the importance of the study of science and engineering, (3) Target high school graduates who are "calculus ready," (4) Showcase to the students what they can become with external "beyond the classroom" learning experiences by involving students in industry-based demonstrations of contemporary technology.

Dr. Oscar Criner provided the "kickoff" for the brainstorm session with a charge to change in the presentation of science and mathematics that would

motivate student learning by showing knowledge as an interrelated whole and not simply a series of isolated facts and procedures. He suggested that students be shown the interconnectedness of all science by presenting courses using the structure of logical systems upon which all science is based. Students will see from this method of presentation how the deductive process works in each of the sciences. Each department chair then spoke about goals, expectations, and obstacles that they specifically face.

2013 COST Staff Retreat

Progress Through Teamwork

The College of Science and Technology held its very first Staff Retreat at the Crowne Plaza Reliant Park/Medical Center on Friday, July 12, 2013. The theme: "Progress Through Teamwork" focused on customer service and collegiality, as well as registration overview and a true colors training workshop.

In addition, case studies of various issues and their proposed solutions were addressed. The retreat was truly successful and well attended by colleagues. The staff thanked Dean Lei Yu for this training opportunity and look forward to a productive and exciting retreat next year!



COST Freshman Orientation

The College of Science and Technology held a successful two-day Freshman orientation which was held on August 19-20, 2013 in the New Science Building. Incoming COST students had an eventful orientation day #2 beginning with discussions with Chairs, Faculty, and students from their major departments. The morning discussion was followed by a pizza lunch during which Drs. Holmes, Rosenzweig and Criner engaged students in a motivational conversation on college success and the tools of the trade to do well over the next four years. Afternoon sessions included "How to use Blackboard for Academic Success" hosted by Ms. June Claiborne of TSU COLEIT. Students had the chance to

ask questions about resumé preparation, employment opportunities, internships, and fellowships in the session hosted by the Office of Career Planning and Placement facilitated by Dr. Antoinette Roberson and Mr. David Olagbaju. Dr. Shayna Lee, Director of the Counseling Center and staff (Ms. Sharon Benavides and Ms. Bernadette Smith) gave information on "Transitioning to College Life" and how the TSU Counseling Center can help real people with real problems obtain real solutions. The office of Student Financial Assistance gave an overview on "How to Pay for College" and how Satisfactory Academic Progress (SAP) can affect students facilitated by Mrs.



Brandi Weber and Ms. Latisha Marion. Ms. Corliss A. Rabb, Director of Judicial Affairs, spoke to students about the importance of adhering to the Student Code of Conduct in the session titled "Keeping you Safe: TSU Student Code of Conduct." All incoming students received a T-shirt emblazoned with the slogan "COST Students Got Class". Ms. Vera McDaniels from the

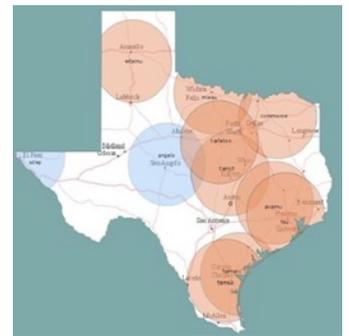
Science and Technology Enhancement Program (STEP) presented "Got Scholarships? Interested in Research?" The college wishes to thank all the presenters and facilitators for their help in making this experience a great one for our freshmen. The college also wishes to thank our COST Ambassadors and COST Dean's Student Advisory Council for their support.

Texas Physics Consortium

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, TSU-Physics has merged with seven other

programs across the State to form the Texas Physics Consortium (TPC). The TPC will allow TSU-Physics 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.



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 Univ.

COST New Technology Building Nears Completion

Everyone is looking forward to the completion of the new building and moving into new quarters. Here is a view of the progress. The TSU Science Complex will be an exciting environment for

scholarship. Pictured here are both College buildings that form an impressive appearance on the west side of the campus. Together with the Health and Physical Education building, they form the Wheeler Street

entrance to the University. Construction is scheduled to be completed in September 2013 and the College should be moved in and operating in the spring 2014.



TSU-Brazil Alliance

In March of 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 Borges Ruckhaber is majoring in Computer Science. She enjoys the logical and creative aspect of the field. Another student, Frederico Novak, a dreamer, is enticed towards the logic in the area of Computer Science.

Luan Fonseca de Medeiros, a resident of Natal, Brazil, is majoring in petroleum engineering and civil engineering. He chose TSU because of its location in Houston, Texas that is home to several oil and gas companies. He is excited about the idea of working on rigs in the sea. He looks forward to intern with a petroleum company next summer.

Patricia Siqueira Pinheiro is 23 years old and a civil engineering student. She is fascinated by the field of structures, but her plans are in the field of building materials. She is driven by an idea of creating diverse recycled



Brazilian students with the College of Science and Technology Dean. From left to right: Dean Lei Yu, Joao Luiz, Patricia Pinheiro, Patricia Luckett, Monica Ruckhaber, Frederico Novak, Luan deMedeiros, and Dr. Oscar Criner.

materials to produce reusable construction materials.

João Luiz entered Texas Southern University through the Brazil Scientific Mobility Scholarship Program (BSMS). He has one year here to get to

know more about America and Texas. He has a fascination for food, travel, and automobiles. He is an automotive engineering undergraduate student in Brazil.

2013 CRCN STEM Enchantment Program

The Center for Research on Complex Networks (CRCN) held its second STEM Enchantment Program, June 17- July 12, 2013 at the TSU Science Center.

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 program was designed for 60 students in grades 6th to 11th. The program was co-funded by a \$5000 grant from NASA. Mrs. Tanishia Pride, NASA representative and the

curriculum developer, conducted a training session for the teachers in the program.

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 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.



Senator's Section Updates from the COST Senators



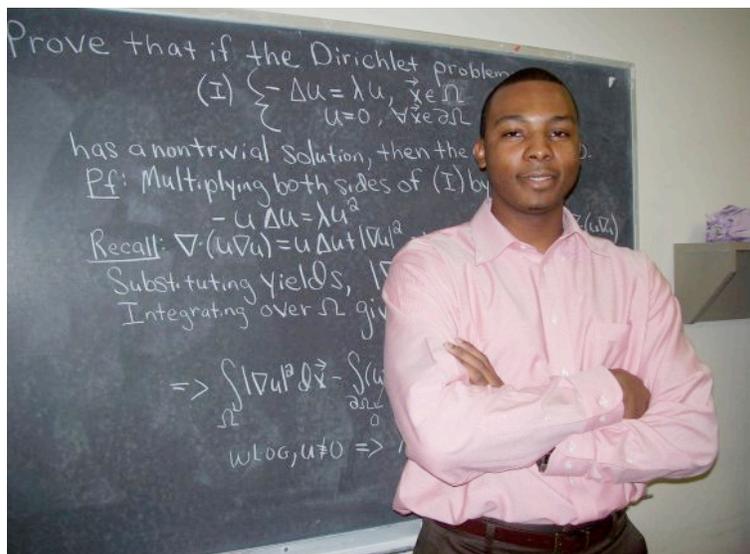
Watch this space for the new section beginning December 2013

Faculty senators representing the College of Science and Technology (left to right): Dr. Christopher J. Tymczak, Associate Professor, Department of Physics, Dr. Aladdin Sleem, Associate Professor, Department of Computer Science, and Dr. Roderick Holmes, Associate Professor, Department of Mathematics.

Faculty Spotlight Jahmario Williams

Dr. Jahmario Williams joined as an Assistant Professor of Mathematics in the College of Science and Technology at Texas Southern University in the fall of 2013. He was born in Greenwood, MS. He received his PhD in Mathematics from Mississippi State University (MSU) in August 2013 and Masters in Mathematical Sciences from MSU in May 2008. In particular, his research area is Partial Differential Equations (PDE). In PDE, he mainly studied the existence and nonexistence to elliptic equations. He is the first African-American to receive a

PhD in Mathematics from MSU. Also, he received his Bachelors degree in mathematics with a minor in Business from the University of Mississippi (Olemiss) in 2006, where he was a member of Pi Mu Epsilon (honorary math society). While in graduate school, he received "The outstanding Graduate Student Award," "the Master Recipient of AGEM (Alliance for Graduate Education in Mississippi) scholar award," and "the Faculty Appreciation Award from the James Worthy Bagley College of Engineering." He



has attended numerous conferences and gave presentations on his research.

He has published a paper on Nonlinear Analysis and communicated several others.

Program Spotlight Houston Louis Stokes Alliance for Minority Participation (H-LSAMP)

Houston Louis Stokes Alliance for Minority Participation (H-LSAMP) is an academic excellence program designed for outstanding high school students who are interested in pursuing degrees in the sciences, technology, engineering and mathematics (STEM) fields. The scholarship is funded by the National Science Foundation and matched by Texas Southern University. The awards are made by the LSAMP scholarship office. Applicants must be U.S. citizens or permanent residents. The four majors supported directly are chemistry, computer science, mathematics, and physics.

Dr. Bobby Wilson has been the project director of TSU H-LSAMP since its inception. His commitment to the

advancement of minorities in STEM fields has spanned over 30 years. He has been the driving force in shaping academic programs nationally. He has also served as a program director for the National Science Foundation. Dr. Wilson has been instrumental in building the research component of the science programs at Texas Southern University. His efforts have generated over \$100 million dollars in research grants to the university.

Dr. Willie Taylor has served in the associate director's position for the TSU H-LSAMP program and has had a profound influence on mentoring LSAMP students.

The LSAMP program at Texas Southern University is currently in its 14th year of



operation and has successfully graduated over 200 scholars in the fields of chemistry, computer science, mathematics, and physics. To date, LSAMP scholars were awarded bachelor's degrees (with direct support) in the following: 65 chemistry; 41 computer science; 61 mathematics; and 5 physics, 7 biology, 2 engineering technology; and 19 students who started out as STEM majors and graduated in other

majors. Of the 200 LSAMP graduates 93 have graduated with honors (15 Summa Cum Laude; 22 Magna Cum Laude; 56 Cum Laude). Twenty-seven LSAMP Scholars are currently teaching in the Houston Independent School District, Channelview ISD, Pasadena ISD, Klein ISD, and Alief ISD. These graduates were highly recruited to teach in the fields of chemistry, computer science, mathematics, and physics.

Staff Spotlight Aericka Dixon

Aericka Dixon is currently serving as the Sr. Administrative Assistant for the Center of Research on Complex Networks. She attended Texas Southern University majoring in Computer Science Information Systems with a minor in Business Management. She is tremendously organized, friendly and a very responsive member of the COST administrative team. She faces new challenges in her daily duties but conquers

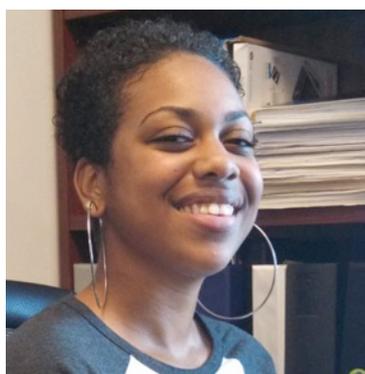
them all in stride with a smile on her face. She is a hard worker, a fast learner and she takes pride in her work being complete and correct. Mrs. Dixon is the Director of Operations for her husband's non-profit organization, The Reggie "Air Man" Dixon Foundation, a former Harlem Globetrotter and together they work with underprivileged children of all ages teaching them life skills and hosting various basketball camps, celebrity games, golf tournaments, and more to

help other organizations and schools to raise funds for numerous activities. In her spare time when she is not coaching her children's little league basketball team she enjoys cooking, horseback riding, 4-wheeling, dirt bike riding, deer and rabbit hunting, jet skiing, playing softball and volleyball and just enjoying her children and grandchildren. She is also the owner of Dixon Designs and Décor where she coordinates, decorates and plans events such as weddings, baby



showers, birthday parties and more. She is a Certified Medical Assistant and is happily married and a mother of five beautiful children and two grandchildren.

Student Spotlight Marith Williams



Marith Williams is a native of Portland Oregon and a graduate from Benson Polytechnic High School. She is the youngest of five, three of whom are already in engineering careers. Marith decided in her 9th grade year electronic engineering was the right step in pursuing her career. Relocating to Houston Texas

and now a senior at TSU, Marith has been opened up to a world of opportunity and countless guidance from her professors and mentors. She is equipped to be a leader and has become more focused and aware of the importance of education. While finishing her undergraduate career she plans to continue research with the

Center for Research on Complex Networks. Following her research this past summer on how well students focus while ready and listening to music, Marith is developing a more in depth study for a research paper. Marith plans to pursue her masters in computer science emphasizing biomedical applications.

Alumni Raves Rajish Ramoutar

Rajish Ramoutar graduated from TSU in 2005 with a BS in Airway Science (concentration in Management). Mr. Ramoutar's love for Aviation began at an early age and while pursuing his diploma in Mechanical Engineering in Trinidad W.I., his mentors made him aware of the Aviation Program offered at TSU.

While pursuing his degree, he was the recipient of the Good Neighbor and the General University

Scholarship Programs. During his course of study, he consistently ranked on the Dean's List every semester.

After graduation, Mr. Ramoutar began employment with the City of Houston-Houston Airport System as an Airport Operations Aide, and was part of the team that oversaw and managed the City's sole heliport. He transitioned through the ranks of the Airport Operations Sections and currently serves as an

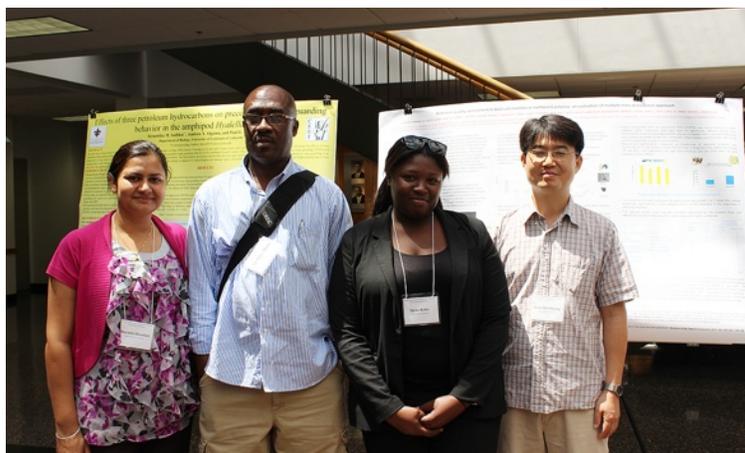
Airport Superintendent-Airfield & Grounds Section at William P. Hobby Airport. The academic & practical skills acquired while attending TSU have merged seamlessly into professional workplace.

Mr. Ramoutar is currently an Associate Member of the American Association of Airport Executives (AAAE) and is currently pursuing AAAE accreditation. He also acts as a mentor for students in the recently formed "Houston Airport System



Aviation Club" that serves to further develop young students interested in the aviation industry. Mr. Ramoutar also is an active member of the COST Alumni Association and serves on both the fund-raising and alumni relations committees.

Student Accomplishments



Sharmila Bhandari, Taofeek Olonode, Djene Keita, and Dr. Hyun-Min Hwang at the SETAC South Central Regional Chapter Annual Meeting

SETAC Annual Meeting

Three graduate students, Sharmila Bhandari, Taofeek Olonode, and Djene Keita, and their advisor Dr. Hyun-Min Hwang in Environmental Toxicology Program attended Society of Environmental Toxicology and Chemistry (SETAC) South Central Regional Chapter Annual Meeting that was held at University of Houston, Clear Lake campus, May 31-June 1, 2013. Students discussed various environmental issues and modern research skills and techniques with other

participants from South Central regions. Sharmila Bhandari, Environmental Toxicology PhD Candidate received a travel grant (\$400) from SETAC to attend the 34th North America Annual Meeting in Nashville, Tennessee, November 17-21, 2013. She is one of the 50 recipients selected from applicants worldwide. She will present her recent research findings regarding "High Molecular Weight Polycyclic Aromatic Hydrocarbons in Cigarette Smoke and Pine Needles."

Bobby Wilson Scholarship Kappa Alpha Psi Fraternity, Inc.

Quaylon Smith, an LSAMP scholar at Texas Southern University majoring in chemistry and a rising sophomore with a 3.75 grade point average (GPA) 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, who have a minimum GPA of 3.5 and has excelled in academics in STEM fields. The award was given out at the Annual Black and White Ball of Kappa Alpha Psi Fraternity, Incorporated on Saturday, August 3, 2013.

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 explored cutting-edge research in STEM fields and became 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.' It is believed that the COST SURP will become one of the most valuable traditions of our college.



COST Alumna Dr. Noreen Khan Mayberry on KHOU Channel 11

Dr. Noreen Khan Mayberry, a distinguished alumna of the Department of Environmental Sciences was invited for Talking Toxicology on KHOU-Channel 11's "Great Day Houston" hosted by Deborah Duncan on Tuesday, July 30, 2013. She is the author of the popular book "Talking Toxicology."



Scholarly and Creative Activities

CTTR creates Environmental Justice Methodology for H-GAC

In May 2013, the Center for Transportation Training and Development (CTTR) staff completed an Environmental Justice methodology for the local metropolitan planning organization (MPO), the Houston-Galveston Area Council (H-GAC). The study involved a three-part approach which 1) examined EJ variables used by peer

MPOs, 2) created an EJ methodology for H-GAC, and 3) applied the EJ methodology using 2010 Census and 2011 American Community Survey (ACS) data to determine EJ zones by census tracts. H-GAC will use this methodology and the resulting EJ zones identified as it updates the 2040 Regional Transportation Plan.

Presentations

Hillar M. The Stoic Logic and Egyptian Divine Metaphysics as the Sources of the Tertullian Doctrine of the Trinity, XXIII World Congress of Philosophy, Athens, Greece, August 4-10, 2013.

Andrews, Scotland, July 7-11, 2013.

Hillar M. International Meeting of the Society of Biblical Literature, St. Andrews University, St.

Vrinceanu D. Proton-hydrogen collisions for Rydberg n,l- changing transitions in the early Universe, 2013 Joint Meeting of the APS and CAP Division of Atomic, Molecular and Optical Physics, Quebec City, Canada. August 2013.

CREST Technology Transfer Summer Workshop

The Technology Transfer Unit of TSU CREST hosted a one-day Summer Workshop on July 24, 2013. The purpose of the workshop was to provide TSU community members with an introduction to technology transfer and an understanding of how technology transfer intersects various efforts in intellectual property (IP) and commercialization within the CREST Center. The workshop was designed to provide

concrete examples and best practices in technology transfer as it directly relates to laboratory researchers in their everyday roles.

Participants obtained interesting and meaningful exposure to intellectual property, technology transfer and commercialization topics through sessions and case studies taught by TSU research leaders and individuals from the greater Houston commercialization community.

CTTR Research on Women in Construction

The Center for Transportation Training and Research conducted a community service project entitled 'Women in Construction.' The project's focus was to increase the number of women available to work in highway construction jobs. Funded by TxDOT and directed by Khorso Godazi, 22 women, whose primary focus was to obtain a career in the industry, were involved in the program which lasted for four weeks which began at the end of

May and concluded in June. Godazi went to the Workforce Commission and local churches to select women for the program. At the end of the program, which was a graduation ceremony, 14 employers came to campus to provide information on available positions in their specific highway construction areas. TSU President, John Rudley and Ron Wilson, Director of TxDOT's Civil Rights division attended the ceremony.

Texas Southern University
COLLEGE OF SCIENCE AND TECHNOLOGY

Open House
 Alumni and Partnership
 Luncheon

Thursday, October 17, 2013
 11:00 a.m. to 2:00 p.m.
 TSU Science Center Atrium
 3100 Cleburne Avenue, Houston, Texas 77004

Join us for a unique look at how COST is preparing students for the new global workforce.

RSVP: Mrs. Charlotte Whaley
 Phone: (713) 313-7009
 Email: Whaley_CS@tsu.edu

WWW.COST.TSU.EDU