

# the EXPLORER

NEWSLETTER OF THE COLLEGE OF SCIENCE AND TECHNOLOGY AT TEXAS SOUTHERN UNIVERSITY

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## EDITORIAL

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In Consultation With

THE COLLEGE OF SCIENCE  
AND TECHNOLOGY  
RESEARCH COMMITTEE



Dr. Lei Yu, Dean  
College of Science and Technology

The inaugural issue of “*The Explorer*” signifies further major progress being made in the past three months in our college. I want to thank the Research Committee for its role in facilitating the publication of this newsletter. Since I moved into the Dean’s Office on September 1, 2009, I have continuously witnessed how hard our people have been working towards a common

## From the Dean’s Desk

goal of making our college the one that we are all proud of. Many faculty members have been working selflessly and tirelessly for the betterment of our programs and activities, and we have been seeing progress in almost all areas.

As we all know, one of the distinct strengths of our college is that it offers a unique composition of diverse academic programs that one does not usually find in other similar colleges/institutions. Our academic programs extend from the specialized curriculum in aviation science and technology to the common subjects within the natural sciences in mathematics, physics, chemistry, biology, and

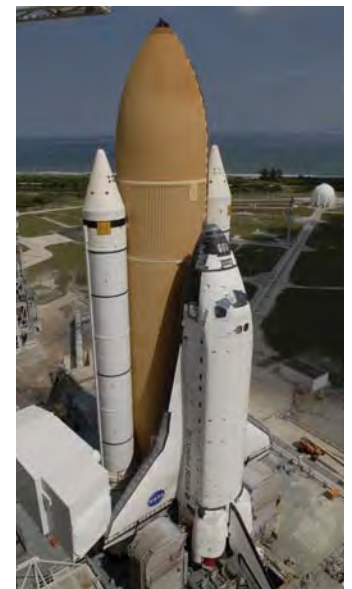
computer science, and also include more professional programs in Engineering Technology, Industrial Technology, and Transportation Studies. With this unique advantage, we have a great opportunity to make our educational programs more productive and attractive. We have been carrying on our legacy as the most active college in research on TSU campus. A number of world-class scholars in the college have been continuing their cutting-edge research endeavors that are recognized by their peers both nationally and internationally. We have established a number of featured research centers

*Continued on page 2*

## TSU Student’s Experiment Flies on NASA Shuttle Mission STS-129

The Shuttle Atlantis carried a NASA Universities Research Center (URC) proof of concept educational experiment developed by students of College of Science and Technology, TSU, in Houston that will study how microbes grow in space. The URC Microbial-1 is the first space flight experiment opportunity for Texas Southern University. The experiment was designed by the Center for Bio-

nanotechnology and Environmental Research (CBER) at TSU and uses BioServe Space Technologies management support and hardware. The concept model to utilize space flight mission opportunities as an additional URC research and education tool is being developed and mentored by the Director of the Biology Office at NASA Ames Research Center and the URC Project Manager at NASA Dryden Flight Research Center.



and special programs funded by National Science Foundation (NSF), National Aeronautics and Space Administration (NASA), Department of Homeland Security (DHS), and many other public and private organizations. These research programs have both contributed to the improvement in classroom teaching and provided opportunities for students to gain professional experiences.

With dedicated effort and the team work of many faculty members and staff, we have been able to accomplish several tasks that are very important to the advancement of our college in the past three months. Examples include:

- We have made major progress in the attempt to establish the Office of Student Services. Under the leadership of Dr. Desiree Jackson, the Interim Assistant Dean for Student Services and Instructional Support, this office will be able to operate in Spring 2010.
- We have made significant progress in developing the

website of our college. Under the leadership of Dr. Hector Miranda, Chair of Website and Instructional Computing Committee, Phase I of our ambitious website renovation plan has been completed at the beginning of November 2009. You can experience the new face and the quality of our website at <http://www.cost.tsu.edu>.

- Fundraising is another area that we believe is in direct proportion to the quality of our educational and research programs, and essential to the continued successes of student retention. Dr. Robert Ford, Chair of Fundraising Committee, and Dr. Oscar H. Criner, the Interim Associate Dean for Administration and Development, have been working closely with Board of Advisors for the college and the university's Office of Development to plan several major fundraising initiatives. We are optimistic that we will be able to substantially increase the funds raised to enhance our programs and support our students.

- The Research Committee, under the leadership of Dr. Wei Li, has worked



extremely hard to promote scholarly productivity in the college by developing various initiatives. The committee has organized the first webinar workshop on writing NSF proposals.

- The Homecoming Committee led by Dr. Graham Thomas did an outstanding job in organizing the Alumni Luncheon and planning for the Homecoming Parade. Our college received three primary awards from the university during the homecoming events. The committee sets a good example of their commitment to dedication and quality.

It is worthwhile to mention that there are many other standing committees not mentioned here are working as hard as the above accomplishing committees towards a common goal to improve the services and programs of our college.

We understand the tremendous challenges that are still down the road, however, we also recognize that our college is provided with some unique opportunities for future

advancement, such as ageographically advantageous location, its internationally renowned scholars, existing well established programs and research centers, and the national emphasis on the needs of the educated workforce in science and technology.

We aim at working collectively and continuously among our faculty, students, alumni, and industry partners to create innovative ways to prepare future leaders and help students get ready for a fulfilling and successful professional life.

We will further improve our curricula and develop new cross-disciplinary and innovative programs that can meet the requirements of the changing market place in the information economy. It is very inspiring to see our dedicated individuals are sharing their talent and expertise in support of the mission of our college, and I am fully confident that our college will achieve more success and fulfillment in the near future.

*Prof. Lei Yu, Dean  
College of Science and Technology*



## Expectations for the COST Board of Advisors

A trusted advisor is a highly valued resource, and the Board of Advisors strives to be that valued and trusted resource to the College of Science and Technology (COST). Consisting of nineteen “industry” members from public agencies and private companies, and sixteen members from the College, including the Dean, Interim Associate and Assistant Deans, Department Chairs and Directors from the TSU Placement Center and Development Office, the Board of Advisors meets monthly to discuss items of importance to COST.

Expectations for the Board members start with a genuine interest in the success of TSU and COST in particular, paired with willingness and the time to serve.

The ability to raise money for scholarships, provide internships during college and full-time employment after graduation are other important considerations for industry members. For those with educational and science and technology professional backgrounds, there are opportunities to participate in student mentoring, classroom instruction, in-the-field instruction, as well as curriculum and faculty development.

Currently, the Board is being focused on the launch of a major fundraising campaign for scholarships, with a kick-off event planned in February during National Engineering Week.

*Chris Hudson, Chair  
Board of Advisors, COST*



## From the Office of Student Services at COST

Greetings on behalf of the Office of Student Services. We eagerly anticipate the opening of our new office space in time for the spring semester. The office will be located in the TSU Science Center, Room 157.

Student Services will provide help to students and faculty with registration issues, processing of forms, referrals for student advisement, referrals for financial aid, student concerns, and other student needs. We will also serve as one of the areas for dissemination of information to students regarding information on departments, scholarships and other student opportunities.

Instructional Support will be providing information to help support faculty in their

efforts to utilize learning technology. Here is the first installment of information on no cost online applications you can use to facilitate student learning. Try Jing for video screen capture. Output is in the form of swf files for easy playback. Visit <http://www.jingproject.com/>

Online registration for continuing students November 23 – January 15. Orientation and registration for first-time freshman and new transfer students January 11 – January 15. Classes Begin January 19. Change of program period (drop and add) January 19 – January 22.

Please contact us at (713) 313-1860.

*Dr. Desiree Jackson  
Interim Assistant Dean*



## COST Hosted Visitors from BJTU

A delegation of six from Beijing Jiaotong University (BJTU), led by its Vice-President, Dr. Xuewei Li, visited Texas Southern University and its College of Science and Technology on November 24, 2009. The delegation and TSU administrators discussed

issues related to expanding existing programs in the exchange of scholars and students and collaborative research, and the possibility of establishing new programs such as 2+2 and Confucius Institute. TSU and BJTU formally signed the co-operative agreement in 2005.



## Development in the College of Science and Technology

The acquisition of financial support for student scholarships, faculty research, and community service is an on-going challenge for the College. The basic functions of the College are teaching, research, and service. Members of the faculty and staff are actively developing programs to support and promote functions of the College. This effort requires that we show the community what we are accomplishing in our scholarship, research, and community service. We need to foster deeper relationships with our constituent communities so that we are recognized for our contributions and the communities will be willing to partner with us in our

endeavors. Higher education is changing as an institution. Individual institutions need to establish long-range programs of research that foster economic development and create wealth and human capital in order to be competitive in the global economy. Our students need to graduate with the latest skills and technologies to be competitive in employment or business. Our research program is focused toward the vital needs of society. Research that addresses the concerns, issues, and problems facing the academy, industry, and government will have potential for technology transfer and commercialization.

The most vital research needs today appear to be in

healthcare, energy, and sustainability of our environment and ecosystems.

To assist the College in its long-range programmatic research thrust, we are seeking long term relationships with schools, businesses, government agencies, foundations, and other institutions that are stakeholders in the scientific and technological workforce, the scientific research establishment, the educational system. The College is striving to bring its scientific research to the attention of the world, as well as striving to significantly enhance STEM education through innovative research in tools for science and mathematics

education, and bring to the attention of the public the critical situation that exists for minorities in the scientific workforce. The College has several outreach efforts in STEM education and is devising programs for the entire K through 12 educational processes.

Significant financial participation is being developed with business, government, and philanthropic partners in the stakeholder community in order for the College to achieve these long term goals.

*Prof. Oscar H. Criner  
Interim Associate Dean for  
Administration and Development  
and  
Prof. Robert Ford  
Chairman, College Fund Raising  
Committee*

## Homecoming 2009

The College of Science and Technology participated in the Homecoming 2009 events and a victory was met. The COST held an alumni activity called the Alumni Homecoming Fest on October 27<sup>th</sup>, at 11:00 am in the atrium of the TSU Science Center and an alumnus from each department was recognized as an outstanding alumni for the year and presented an award. The undergraduate students nominated and selected a King (Mr. Onyi Denzel Duruji) and Queen (Ms. Bianca D. Garland). COST also participated and competed in the Campus Decoration and the Department of

Transportation Studies won 2<sup>nd</sup> place for office decorations.

At the Homecoming 2009 Parade, the Dean, Dr. Lei Yu, participated and entered the truck contest and won 1<sup>st</sup> place and the COST float was awarded 2<sup>nd</sup> place. We are very proud of the entire Homecoming committee members who help supported this wonderful effort.

*Paula Eakins  
Department of Transportation Studies*



## FACULTY SPOTLIGHT

Dr. Jason A. Rosenzweig is an Assistant Professor in the Department of Biology and a co-investigator in CBER. He received his Ph.D. degree in microbiology and immunology from University of Miami School of Medicine in 2006.

As a co-investigator in the NASA - URC CBER established in September of 2008 at TSU, Dr. Rosenzweig, was presented with an unique opportunity, as a microbiologist, to lead a team of both graduate and undergraduate students in a

proof of concept microbial flight experiment that will yield multiple fruit. This proof of concept experiment has established a precedent for TSU and will support other C-BER investigators who want to design flight experiments for future missions by bolstering the center with flight experience credibility. Additionally, TSU students had the unique privilege of physically loading flight hardware with bacteria for a flight mission deepening their sense of pride in their work, department, and



university. Lastly, as an outreach tool, this experiment and the data gathered on space-flight-induced changes to DNA encoded gene expression and any morphological alterations of the bacteria will be used to educate K-12 students.

This outreach will help spearhead a broader national goal of inspiring our youth to pursue careers in the STEM fields paving the way to a brighter future. Dr. Rosenzweig has published several research articles in high impact journals.

## DEPARTMENT SPOTLIGHT PHYSICS

The Physics department is advancing its commitment to research, scholarship, and the creation of exciting and rewarding programs for its students. The department reactivated the Society for Physics Students chapter through the leadership of one of its seniors, Ms. Samantha Everett, and the mentoring support from both Dr. D. Vrinceanu and Dr. L. Perotti. This accomplishment is creating a forum for students promote the discipline and their involvement.

Dr. Daniel Bessis and his collaborators, Dr. Luca Perotti and Dr. Daniel Vrinceanu, have made important progress in demonstrating the relevancy of their novel “noise filtering” method in the possible detection of gravitational waves. The existence of gravitational waves is

theoretically valid within the General Theory of Relativity but they have remained elusive because they correspond to very weak signals in a sea of both noise. Developing sensitive techniques to filter out all these other sources, picking up only on gravitational waves, is a tremendous challenge. The Center for Gravitational Wave Astronomy at the University of Texas at Brownsville has Dr. Bessis as a collaborator with substantial grant support.

Dr. Daniel Vrinceanu studies exotic atomic properties of particular cold and ultra cold atoms. Dr. Vrinceanu is a theorist and his-TeraGrid proposal for 190,000 computing time units was approved in April, 2009 for studying “Ultracold molecular photoassociation

dynamics of lithium-ytterbium atoms; and three-body recombination in magnetized cold plasmas”. The physics department’s Health Physics provides training of professionals to monitor safe working and living environments in areas impacted by radiation sources in the environments. This program is unique in Houston and has been fortunate to have received approximately \$740,000 in support from grants from the Nuclear Regulatory Commission, a scholarship grant consortium led by the University of Texas at Austin, and from the Office of Naval Research. In 2010, we expect our first graduates, Samantha Everett, Brandon Georgetown, and Biruk Desta. The program received a continuing educational infrastructure grant

of \$100,000. This work was led by Dr. Elena Stefanova, who has decided to return to her former position within the Bulgarian Academy of Sciences. Continuing this work will be Dr. Mark Harvey, another nuclear physicist. The research group of Dr. Christopher J. Tymczak published the results of their theoretical simulation studies confirming the existence and properties of a molecule they call “borozene.” The true industrial impact of these results will not be known for another several years. This research is supported by a Welch Foundation research award. In addition to these activities, Dr. Tymczak has developed the High Performance Computing Center as a significant resource serving the University.

# STUDENT SPOTLIGHT

Kelsey Parks is a senior biology major. She is a Mississippi native and was an honor student throughout high school. She is currently a Dean's List Scholar, a member of the in the National Science Foundation-Science and Technology Enhancement Program (STEP), Treasurer of Beta Beta Beta Biological Honor Society, a member of the Golden Key International Honor Society, secretary of the Minority Association Pre-Health Students (MAPS), President of the Collegiate Academy of the Texas Academy of Science, and Lambda Pi Chapter, all at Texas Southern University.

For the past two summers, Kelsey has had the opportunity to intern at NASA Johnson Space Center in Houston, Texas. Her first summer at JSC, she was assigned to the Human Factors Branch, Graphic Research and Analysis

Facility and worked beside Mr. James Maida, a Computer Scientist who specializes in Computer Aided Human Factors Analysis Modeling and Simulation. This past summer she was invited back to JSC to intern in the Human Adaptation and Countermeasures Division under Dr. Honglu Wu, Radiobiologist and Director of Radiation Biodosimetry Laboratory at JSC and Kamal Emami, Senior Research Scientist in the Department Radiation BioPhysics at Wyle Laboratories, Inc.

She is currently an undergraduate research assistant in the NASA University Research Center for Bio-nanotechnology and Environmental Research Undergraduate Collaborative Training Program. She is working in the Microbial Research Thrust under Dr.



*Nene Abogunde and Kelsey Parks (inset) loading samples into Fluid Processing Apparatus for microbe experiment at Kennedy Space Center, Florida. The samples were sent on board Atlantis (STS-129) to the International Space Station*

Rosenzweig. In the Microbial Thrust, microbes are being analyzed for their growth kinetics, morphology, and virulence due to factors of the space environment. Kelsey plans to graduate in May of 2010 with Bachelor of Science in Biology. Upon

graduation she plans to attend the Medical Scientist Training Program at the University Of Texas Southwestern Medical School in Dallas, TX, through which she will obtain an M.D. and a Ph.D and continue to conduct research in biomedicine.

# ALUMNI RAVES BY LAKEISHA D MELTON

I graduated from Texas Southern University in December 2006, with a major in Computer Science and a minor in Electronic Engineering Technology. My career began in March 2007 at the Fluor Corporation, a Fortune 500 Company in Sugar Land, Texas. I presently work as an international

software tester, trainer, and a support specialist for one of the estimating software products for major projects. This opportunity has allowed me to travel within the United States and internationally. I have been employed with the Fluor Corporation for 2 1/2 years. I am a member of the GAP Organization, (Graduates

Advancing to Professionalism) which is an organization at Fluor of over 600 new college graduates. I am the only graduate from TSU. I am presently trying to get human resources to recruit students from TSU. My internship in Washington State summer 2006, LSAMP, as well as the opportunity to tutor other computer

science students, provided me with the necessary experience and knowledge to enter the business world and be successful. Thank you TSU and my professors for believing in me! I encourage all students to choose a career path and pursue it to its fullest. Always remember, "You can make a difference".

# STUDENT ACCOMPLISHMENTS

Society Advancing Hispanics/Chicanos & Native Americans in Science Conference was held in Dallas, Texas, October 15-18, 2009. LSAMP scholars' Samantha Everett, Brandon Georgetown (physics and mathematics major), Mia Lander, Brittany Lewis, Joshua Wiley (mathematics major), Jeremy Miller, Matthew Roberts (computer science major), Jasmine Owens, Bobby Scott, David Taylor, Jasmine Theragood (chemistry major), Michael Smith (physics major), attended the conference and presented their research posters. There were over 300 universities/colleges, governmental agencies, and industry set up in the exhibit halls. Students were engaged in workshops, panel discussions, and oral presentations and interacting with graduate recruiters from various universities. Accompanying the students were Dr. Bobby Wilson, L. Lloyd Woods Distinguished Professor of Chemistry, Mr. Peter Thornton, Communications Instructor, and Ms. Michelle Tolbert, LSAMP Project Coordinator on the trip.

**Ms. Zuri Dale** 1st place winner in Environmental and Ecology Oral Presentations 2009 HBCU-UP National Research Conference

**Mr. Samuel Somuah**, a Computer Science sophomore student was awarded the CITGO Computer Science Department Scholarship of \$5000 for the academic year 2009 – 2010.

**Micheal Smith**, LSAMP scholar and sophomore physics major, attended and presented research at the prestigious Tenth Minority Access National Role Models Conference held September 11-13, 2009 in Washington, D.C. He presented his summer research project from the University of Massachusetts at Amherst in the Polymer Science and Engineering Department. Micheal presented a PowerPoint presentation in which he competed with undergraduate and graduate students. He won 3rd place and \$250.00.

**Samuel Ubanyionwu**, a NOAA scholar from Texas Southern University, was mentored by Dr. LaToya Myles and participated in a collaborative field project, the Mississippi Coastal Atmospheric Dispersion Study. In June 2009, Samuel measured atmospheric nitrogen and sulfur compounds at two sites just north of the Gulf of Mexico. Data from Samuel's field research have been incorporated into atmospheric dispersion models to identify potential emissions sources.

**Tang Vo** and Samuel Ubanyionwu attended the Purdue University 2009 Historically Black Institution Visitation Program, November 11 – 13. They met with Dr. Joseph Francisco, ACS President Elect and Purdue Professor.

Texas Space Grant Consortium awarded four LSAMP scholars the prestigious Columbia Crew Memorial Scholarship for fall 2009-spring 2010. Mia Lander (mathematics major), Micheal Smith (physics major), Kyle Thomas (chemistry major), and Samuel Ubanyionwu (chemistry major) received \$1,000 award each. Samuel Ubanyionwu received the award for the 3rd consecutive year. Congratulations to the scholars!

Graduate student Miss Qing (Stella) Zhu (Advisor: Fengxiang Qiao) presented the research progress of TxDOT 0-6127 "Bicycle and Pedestrian Friendly Crossings at Freeway Interchanges" to the US Transportation Secretary Ray LaHood and the Congresswoman Sheila Jackson Lee on March 13, 2009 when they visited TSU. Stella reported the progress on research background, objectives, identified facilities and treatments, crossing types, the on-going engineer survey and surveillance plan, the framework as well as the case studies to be conducted. The Secretary was very interested in the research on bicycle and pedestrian crossings, and appreciated Stella's excellent presentation.

Graduate student Rafi Shi (Advisor: Fengxiang Qiao) won the Award of Honor, the third place, at the Research Week of Texas Southern University, April, 2009.

## Ph. D. DISSERTATION

**Oyewole A** (Advisor: B.L. Wilson) Toxicological Evaluation of Selected Houston Area Aquatic Systems, Environmental Toxicology, 2009

**Ramadi M** (Advisor: B.L. Wilson) The Study of Nanomaterials and their Antimicrobial Activity, Environmental Toxicology, 2009.

## MS THESIS

**Joana Idakwo** (Advisor: Robert Ford) Analysis Of Selective Petrochemicals: A Case Study Of The Houston Texas Metropolitan Area, Chemistry/Environmental Toxicology, 2009.

**Hao Liu** (Advisor: Fengxiang Qiao) Intelligent Transportation Systems Data Compression Using Wavelet Decomposition, Department of Transportation Studies, 2009.

**Lijin Ma** (Advisor: Fengxiang Qiao) Fuzzy Logic Based Eligible Criteria for Texas Major Traffic Generators, Department of Transportation Studies, 2009.

**Lang Yang** (Advisor: Y. Qi) VEHICLE Infrastructure Integration (VII) Based Driver Warning System For Run-Off-Road Collision Prevention, Department of Transportation Studies, 2009.

**Hongxi Yu** (Advisor: Y. Qi) Guidelines for Selecting Left-Turn Signal Control Mode, Department of Transportation Studies, 2009.

**Yan Zeng** (Advisor: Fengxiang Qiao) Evaluating of Congestion Pricing Signage Through Simulation Method, Department of Transportation Studies, 2009.

# ACTIVE GRANTS

**Daniel I Bessis** (PI), NASA Subcontract from Center for Gravitational Wave Astronomy and Department of Physics and Astronomy. The University of Texas at Brownsville, 2009- 2011, \$ 250,000.

**Xuemin Chen** (PI), Collaborative Research: Developing Virtual and Remote Undergraduate Laboratory for Engineering Technology, NSF CCLI Type 1, Award No. DUE-0942778. Collaboration with Prairie View A&M University, 2010-2011, \$100,000.

**Xuemin Chen** (PI), Collaborative Research: Develop Next Generation Unified Framework for Remote Laboratory Experiments, NSF IEECI, Award No. EEC-0935008. Collaboration with University of Houston, 2009-2011, \$49676.

**Robert Ford** (PI), Establishing a Center for STEM Education and Outreach, TSU Title III, 2009-2010.

**Lila Ghemri** (PI), Center of Excellence for Command, Control and Interoperability, US Department of Homeland Security, 2009-2010, \$17,128.

**Khaled Kamel** (PI, PD), Computer Science Students Recruitment and Retention Enhancements, Texas Work Force Commission and the US Department of labor, 2007 – 2008, \$79,000.

**Wei W Li** (PI), SGER: Theoretical Foundations and Advanced Analysis in Real-Time, Hybrid, and Embedded Systems, NSF-CNS-0830011, USA, 2008-2009.

**Wei W Li** (PI), Triggered Strategies in Wireless Networks with Multiple Calls, Multiple Channel Services and Multiple-Level QoS Degradations, NSF

-CCF-0829769, 2008-2009.

**David Olowokere** (PI), Xuemin Chen, Shahyar Darayan and Lawrence Kehinde (Co-PIs), Targeted Infusion Grant: Development of Virtual and Remote Laboratory for Engineering Technology Undergraduate Students, NSF HBCU-UP, Award No. HRD-0928921, 2009-2011, \$149,941.

**Yi Qi** (PI), Use of Flashing Yellow Operations to Improve Safety at Signals with Protected-Permissive Left Turn (PPLT) Operations, TxDOT 0-6568 in collaboration with University of Texas at Austin, 2009-2011, \$251,301.

**Yi Qi** (PI), Development of Guidelines for Triple Left and Dual Right-Turn Lanes, TxDOT 0-6112, in collaboration with Texas Transportation Institute, 2008-2010, \$289,998.

**Yi Qi** (PI), Investigate Existing Non-Intrusive Inspection (NII) Technologies for Port Cargo Inspections, SWUTC, 2009-2010, \$20,000.

**Fengxiang Qiao** (PI), Causes and Patterns of Bicycle / Vehicle Conflicts at Freeway Interchanges, Southwest Region Transportation Research Center Project, 2009-2010, \$20,000

**Fengxiang Qiao** (PI), Bicycle & Pedestrian Friendly Crossings at Freeway Interchanges, Texas DOT research project, Number: 0-6127, 2008-2010, \$260,000, TSU Lead: \$200,000, UTA: \$60,000.

**Fengxiang Qiao** (PI), Driver Understanding of Congestion-Based Pricing Messages, Texas Department of Transportation research project, Number: 0-6173, 2008-2010, Total: \$328,641, TSU Lead: \$243,768,

TTI: \$84,873.

**Fengxiang Qiao** (PI), Dynamic Traffic Assignment Based Trailblazing Guide Signing for Major Traffic Generator, Southwest Region Transportation Research Center Project, 2008-2009, \$28,000.

**Alamelu Sundaresan** (PI), NASA Institute of Science and Technology Grant award, 2008-2011, \$ 150,000.

**Bobby Wilson** (PI), Chemical and Biological Assessment of Endocrine Disruptors in Waterways of Southeast Texas, NSF, 2004-2009, \$998,328 Bobby Wilson (Co-PI) and John Bear (PI) of the University of Houston, Alliances for Minority Participation, National Science Foundation, 2004-2009, 5,000,000.

**Bobby Wilson** (PI), Science and Technology Enhancement Program, NSF, 2006-2011, \$2,500,000.

**Bobby Wilson** (PI), Air Force Research Lab./Sensors Directorate, (AFRL/SN) HBCU/MI – Clarkson Aerospace Corporation: Materials and Manufacturing Research in Nano Technology and Sensors Technical Thrust Research, 2005-2010, \$947,926.

**Bobby Wilson** (PI), NASA/ Spelman College, Students Pursuing Academic and Career Excellence, NASA, 2007-2010, \$375,000.

**Bobby Wilson** (PI), TEA/ Energized for STEM Academy, ESTEM, 2008-2010, \$125,000.

**Lei Yu** (PI), An Evaluation of Mobile Source Greenhouse Gas Modeling Approaches for Traffic Management Assessment, SWUTC 161040, 2009-2010, \$62,500.

## INVITED TALKS

**Xuemin Chen**, Development of Virtual and Remote Laboratory, NSF HBCU-UP project workshop, Prairie View A&M University, TX, August 20, 2009.

**Kiran Chilakamarri**, Construction of 3-connected, self dual planar graphs SE Texas Discrete Math & Applications Workshop, Galveston, October 10, 2009.

**Oscar H Criner**, Shock and Nonlinear Oscillations in Economic and Financial Time Series," at the 19th Annual International Society for Chaos Theory in Psychology and Life Sciences Conference, Marquette University, Milwaukee, WI, 23-25 July 2009.

**Oscar H Criner**, Complexity, Sustainability, and the Digital World View," at Sustainability: An Interdisciplinary Symposium, Texas State University, San Marcos, TX. November 6, 2009.

**Alamelu Sundaresan**, Invited speaker to European Low Gravity Research Association and International Academy of Aerospace medicine, 2009.

**Daniel Vrinceanu**, Rydberg atom formation in ultracold plasmas: non-equilibrium dynamics of recombination" collaboration with H. R. Sadeghpour and T. Pohl. The International Conference on Photon and Electron Interactions, Kalamazoo MI, July 23, 2009.

**Daniel Vrinceanu**, Three-body recombination in ultracold plasmas: small energy transfer with large consequences, Joint Fall 2009 Meeting of the Texas Sections of the APS, AAPT, and SPS, Texas State University, San Marcos, October 22, 2009.