

# the EXPLORER Newsletter

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

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## EDITORIAL

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## CRCN STEM Enchantment III Summer Program

The Center for Research on Complex Networks sponsored the 2014 STEM Enchantment III summer program. The program introduced middle and high school students to programming on the desktop and on Android tablets. This four week program taught students the basic fundamentals of computer science through gaming using Microsoft Visual Basic for Applications (VBA) for desktop application development and the MIT App Inventor for creating applications for mobile Android tablets. The MIT App Inventor development environment is used to create games and apps on Android devices and is available to the students at home if they have

a PC and an Internet connection. Students will be able to continue learning the art of app development at home with the outreach program at TSU in the coming academic year through the Young Developers Project (YDP).

Students who finished the program were rewarded with a certificate of completion and a NeuTab 7 tablet for further development. During the fall semester, Dr. Oscar H. Criner will continue the outreach program to these students with a Saturday morning program two times a month and after school with the "Who Am I" program at Fondren Middle School. The outreach effort is to encourage young people to

prepare Apps and participate in the Congressional STEM Academic Competition, the House App Challenge. This competition is a nationwide event for high school students across the country allowing them to compete by creating and exhibiting their software applications. The Department of Computer Science, Mobil Applications Development Group, Drs. Lila Ghemri, Aladdin Sleem, and Oscar Criner will mentor the participants in the contest. Student participants came from the following schools: Fondren, Christie McAuliffe, Eastwood Academy, Albert Thomas, YES Prep, Hartman, Pin Oak, Lewis, Sam Jamison, and Smith Middle Schools and Bellaire High School.

## Dr. Bhaskar Receives NSF Research Initiation Award to Study Mercury Pollution in the East Tennessee Watersheds

The National Science Foundation (NSF) announced a Research Initiation Award (RIA) of \$199,999 over 2 years to Dr. Maruthi Sridhar Balaji Bhaskar of Department of Environmental and Interdisciplinary Sciences at TSU to support his proposed research on "Spatial and Temporal Modeling of Mercury Fate and Dynamics in Tennessee Watersheds." The goal of the project is to develop a comprehensive understanding of the landscape factors on mercury loading and distribution in the East Tennessee Watersheds of the Oak Ridge Reservation (ORR).

The team of graduate and undergraduate students from TSU, led by Dr. Bhaskar (PI) will collaborate with scientists at Oak Ridge National Lab (ORNL) to understand the trends of mercury contamination and bio-accumulation in the fish of East Tennessee.

The project will enhance the research experience of undergraduate and graduate students at TSU, provide financial support, train them in state-of-the-art geospatial techniques, and enhance collaboration and internship opportunities with national labs such as ORNL.



## National Science Foundation CAREER Award: Dr. Miao Pan



The National Science Foundation (NSF) recently announced a CAREER award of \$430,002.00 over five years to Texas Southern University in support of Dr. Miao Pan, an Assistant Professor in the Department of Computer Science, for his research proposal "CAREER: SpecMax: Spectrum Trading and Harvesting Designs for Multi-

Hop Communications in Cognitive Radio Networks."

The awards are the most prestigious offered by NSF's CAREER Program and provide up to 5 years of funding to junior faculty members who exemplify the role of teacher-scholars through outstanding research, excellent education, and the integration of education and research within the context of their organizations' missions. Dr. Pan is the first faculty member at TSU to have received the NSF CAREER Award. Dr. Miao Pan was awarded for his research on spectrum trading designs in cognitive radio networks, which is promising to relieve the spectrum tension due to wireless services' booming growth, improve spectrum utilization, and facilitate

spectrum trading with enormous economic benefits.

Dr. Pan's interdisciplinary approach brings together computer science, electrical engineering, statistics, and economics. The results of this project can advance the state-of-the-art in spectrum trading designs and enrich the scientific knowledge of network designs and network economics. As part of this project, Dr. Pan will provide research opportunities to both undergraduate and graduate students. Dr. Pan has also

been working as a principal investigator (PI) for another NSF supported project "EARS: Collaborative Research: Cognitive Mesh: Making Cellular Networks More Flexible" at TSU, and been working as a faculty investigator for NSF Center of Research Excellence in Science and Technology (CREST) at TSU. Dr. Pan's research spans over cognitive radio networking and communications, cyber security, and cyber-physical systems.

### 2014 TENURE AND PROMOTION

**Dr. Christopher J. Tymczak**, Department of Physics  
Promoted to Professor

**Dr. Xin Wei**, Department of Chemistry  
Promoted to Professor

**Dr. Jason A. Rosenzweig**, Department of Biology  
Tenured and Promoted to Associate Professor



## ITS China Delegation visits COST

The Intelligent Transportation Society (ITS) China delegation led by the

former Vice Minister of the Ministry of Science and Technology of China visited

the College of Science and Technology on Thursday, September 11, 2014. The 10

member delegation, including a number of CEOs and owners of big corporations, toured the laboratories of the COST.

The director of the Science and Technology division of the Consulate General of the People's Republic of China in Houston also accompanied the visitors.

The purpose of this visit was to learn about the academic and research programs at COST and identify collaborative and investment opportunities.

The delegation met with all department chairs, associate/assistant deans, as well as the staff from the TSU Confucius Institute during lunch.

## 2014 Department of Homeland Security Scientific Leadership Award

The Department of Homeland Security announced its 2014 Scientific Leadership Award to TSU. This highly competitive, grant is awarded to accredited Minority Serving Institutions for building their Homeland Security Science, Technology, Engineering and Mathematics capabilities, establishing related curricula

and courses of study, supporting the development of early-career faculty, and recruiting and mentoring students. The TSU proposal titled "Preparing Technically Savvy Homeland Security Professionals for Maritime Transportation Security" was selected for the award this year. The PI of the grant is Dr.

Yi Qi. Co-PIs include Dr. Miao Pan and Dr. Yunjiao Wang. This is a five year grant with a total funding of \$800,000. The funding for Phase I (FY 2015 and 2016) in the amount of \$300,000 has been approved and the funding for Phase 2 will be subject to satisfactory progress of Phase I.

It is the first time that TSU has won this award from DHS. It will broaden our existing B.S. level program in Maritime Transportation Management and Security, and enhance interdisciplinary collaborations between different departments in the College of Science and Technology.

## The Houston Louis Stokes Alliance Program Funded for Phase IV

The National Science Foundation (NSF) funded the Phase IV of the Houston Louis Stokes Alliance for Minority Participation (H-LSAMP). The program will be co-led by Dr. Bobby Wilson (Texas Southern University) and Dr. Stephen Seidman (Texas State University). The Alliance is

comprehensive, including the country's largest school districts, two community college systems, and several comprehensive/doctoral Historically Black College/Universities and Hispanic Serving Institutions.

The H-LSAMP Senior Alliance will fund new efforts in student transition,

support mechanisms for students taking non-traditional courses, the inclusion of social support mechanisms into STEM retention, and the institutionalization of best practices developed during earlier LSAMP funding.

The Houston LSAMP has been a highly successful

program. During the first five years of funding, the program nearly doubled the number of underrepresented minority students earning a degree in a STEM field. It maintained its level of production, and has emerged as a role model and mentor institution for other LSAMP programs at colleges and universities.



## Summer Maritime Academy

During summer 2014, forty students participated in the fifth cohort of the Summer Maritime Academy (SMA) at Texas Southern University. The purpose of the SMA was to introduce rising high school juniors, seniors, and recent high school graduates to the maritime industry and to

introduce them to the undergraduate program in Maritime Transportation Management and Security (MTMS) at TSU. The MTMS program, a partnership with the Port of Houston Authority (PHA) offers students a B.S. degree in Maritime Transportation Management

and Security and addresses three nationally recognized priorities- logistics/freight, homeland security, and environment in a single curriculum.

The non-residential SMA was held on the campus daily in the new Spearman Technology Building. The first day focused on a general maritime overview. Each day of the SMA focused on one of the nationally recognized priorities: logistics/freight distribution, homeland security, and environment. The week included lectures from local maritime industry leaders, and, for the first time, a leadership component led by former U.S. Customs and Border Protection (CBP) Houston Field Office Manager Jeff Baldwin, and Houston Community College-Southeast Workforce Dean, Dr. Johnella

Bradford. The students enjoyed field trips to the PHA and the U.S. Coast Guard Sector Houston facility at Ellington Field. The highlight of the week was a demonstration by U.S. CBP Officer David Patino and other CBP officers on the detection of contraband items. The week concluded with a closing ceremony honoring the 2014 Paul Cuffee Leadership Maritime Award (PCLMA) winner, Mr. Carl Davis. Each year the PCLMA is awarded to an individual or organization who advances minorities in the Maritime Industry in the Texas Gulf Coast region. Mr. Davis was awarded the PCLMA for his outstanding contributions and dedication to the Maritime program at Jack Yates High School.

## COST Summer Undergraduate Research Program

The College of Science and Technology Summer Undergraduate Research Program (SURP) sponsored 20 talented undergraduate students to promote participation in various research projects in STEM fields under the supervision of 19 faculty mentors. Through participation in this 9-week program (June 2- August 1), these 20 students from 9 academic departments, which is a significant increase compared to last summer (16 students from 5 departments), received hands-on research experience and had opportunities to access many state-of-the-art instruments such as gas chromatograph-mass spectrometer and multimode inverted

microscope. At the end of the 9-week period, all students gave excellent oral and poster presentations that dominated among all of TSU's summer research programs. Six SURP posters won first, second, or third places, accounting for more than 50% of the total awards. Through these presentations, students practiced their presentation skills, demonstrated their understanding of research projects, and promoted interaction between other students and faculty members.

Students also submitted manuscripts that will be published in the Proceedings of COST SURP 2014 in this fall. At the closing ceremony, student participants mentioned that this program provided a great

opportunity for them to obtain research experience through participation in major research projects.

They strongly encouraged other student fellows to participate in this program. They also mentioned that this program inspired them to plan to enter graduate programs, demonstrating that one of the goals of SURP was successfully accomplished.

COST SURP, which was coordinated by Drs. Hyun-Min Hwang and Yunjiao Wang, was very successful and Dean Lei Yu expressed that he is willing to support more students next summer, pending budget availability. Although it was only the second year, there is no doubt that SURP will be classed as another precious tradition of the COST.

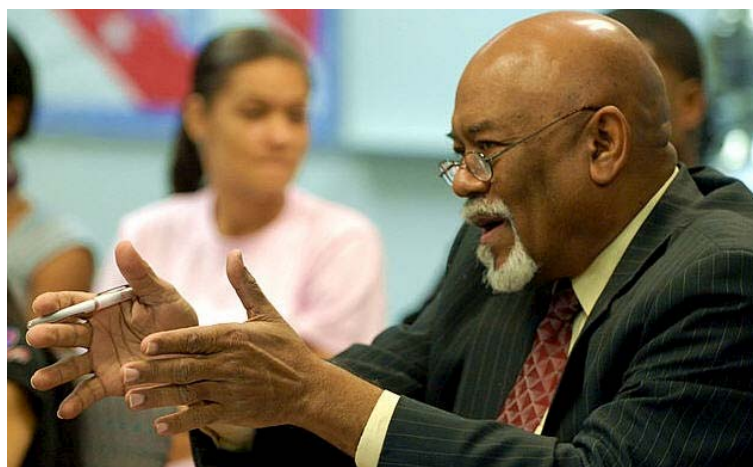


## Faculty Spotlight Oscar H Criner

Oscar H. Criner is Professor of Computer Science and Interim Associate Dean of the College of Science and Technology at Texas Southern University. He received his early education in the public schools of Texas and graduated from Phillis Wheatley Senior High School in Houston in 1956. He attended Howard University in Washington graduating with a B.S. in mathematics and a minor in physics. After graduation, he spent a year teaching physics at Grambling College and then returned to the graduate school at Howard. He received the Ph.D. degree in applied mathematics from the University of California at Berkeley in 1972. His study

and dissertation research areas were nonlinear partial differential equations and the multidimensional calculus of variations.

In 1962, he was an engineer for Lockheed Missiles and Space Company working on guidance systems for the Polaris Missile; later, he was an applied mathematician for United Research Services (URS) in Burlingame California, where he became an expert on the effects of nuclear weapons and began working on computational simulations of complex phenomena. He also worked for Sandia Corporation in Livermore California, where he used the first true supercomputer, the Control Data 6600, to solve initial-



boundary value problems of the vibrations of thin shells structures. By 1970, Dr. Criner was a principal in Mathematical Services Corporation, a company that constructed software and marketed specialized software and services in the printing, finance, survey research, and

health care industries. Dr. Criner's company designed and implemented the first computerized remote surveying system and operated the system to survey 5,000 families quarterly in the Seattle Income Maintenance Experiment. The system

*Continued on page 8*

## Research Spotlight Maruthi Sridhar Balaji Bhaskar



Understanding the human manipulation and exploitation of natural resources and its impact on the earth system is one of the greatest challenges for modern science. Dr. Bhaskar's research lab focuses on the use of remote sensing and Geographical Information System (GIS) to address these challenges using a multi-disciplinary approach involving the fields of biological, geological, environmental and health

sciences from a regional to global scale.

Dr. Bhaskar's research lab conducts both basic and applied research in geospatial sciences. Basic research involves conducting field and laboratory studies with hand held spectroradiometers and imaging spectroscopy to provide scientific basis for remote sensing applications. The basic research will help establish the links between the remote sensing data obtained and the physical and chemical characteristics of the biological and environmental features, and provide a rationale for interpreting the obtained data. Application and integration of the remote sensing data with other fields of study expands its utilities and makes it a

powerful tool for addressing complex scientific issues which are important for the decision making process. The research methodologies developed in the lab provide direction to the scientific communities and the government agencies in general.

Dr. Bhaskar's research involves identifying and quantifying the physical and chemical changes in the drainage basin and watersheds as a result of sewage sludge, dairy, and poultry manure applications on agricultural fields, heavy metal and nutrient runoff from point and non-point sources. These involve monitoring the nutrient and heavy metal accumulation in soils and plants through traditional

chemical analysis and to develop algorithms to map and quantify the areas of high chemical concentrations by using the satellite imagery. Several satellite algorithms were developed for assessing the soil quality in the drainage basins and to monitor the water quality in lakes. By mapping the various non-point pollutant sources, we identify the risks associated with changes in water and soil quality at both surface and subsurface levels in the event of runoff. Better management of pollutant sources through spatial mapping and modeling can result in preventing pollution of soil, air and water resources, and improving the overall health of people and the environment.

## Staff Spotlight Baqui Abdullah

Mr. Baqui Abdullah is currently the Network Administrator of the Department of Computer Science. He received his Bachelor's degree in Computer Science in 2004 from TSU. In 2004, Mr. Baqui was hired by the Department of Computer Science to manage its technical infrastructure. His service to TSU started before his graduation when he was hired in 1996 as a student assistant to manage the CS department Unix server. Mr. Baqui has also obtained an internationally

recognized validation of his technical knowledge by completing the CISCO Certified Network Associate (CCNA) and the CompTIA Network+ certificates in 2007.

Mr. Baqui's current responsibilities include managing 8 computer labs with 245 computer systems that are networked together in one domain/workgroup and serviced by 5 different servers. He is also responsible for the installation, configuration, and troubleshooting of all software applications and systems in the department. He serves as the

administrator of the Computer Science Department Web server. In addition to his support to CS major students, Mr. Baqui supports all the non-CS students who are enrolled in the computer science service courses. He creates and maintains user accounts for over 1000 students every semester so that they can log in to the Department's network and servers and perform their class activities.

In 2013, Mr. Baqui put substantial amount of effort to ensure a smooth transition of the department infrastructure



from the Nabrit Science building to the new Spearman Technology building. He worked closely with the building contractors to build the CS intranet in the new building and to have all the labs ready from the first day of the spring 2014 semester. Due to his outstanding service, Mr. Baqui was awarded the COST Distinguished Staff award in 2011.

## Student Spotlight Meron G Degefu



Meron G. Degefu was born in Ethiopia, which is known for 13 months of sunshine. She came to the United States of America almost three and half years ago. During her two years of college in Kansas, she was a member of one of the most honorable international organizations: Phi Theta Kappa Honor

Society. She is a certified tutor and she has traveled to many different places to volunteer her services. Meron is also a member of the leadership organization, AIESEC. She has received a personal letter from the President, Barack Obama. She graduated as the valedictorian of her class with a 4.0 GPA and an Associate of

Science degree.

Meron moved to Texas and joined Texas Southern University where she is currently majoring in Civil Engineering Technology. She is a member of the Honors College and is looking forward to joining the National Society of Black Engineers and the National Technical Association

## Alumni Raves Lisa Richardson

Lisa Richardson is a proud alumna of the TSU School of Technology, graduating in the class of 1991. Lisa's professional career began in the Houston Independent School District. She worked as an intern in the construction management division where she gained valuable insight and experience. She went on to work for Harris County Housing Authority as their first female inspector, the City of Houston Housing and

Community Development, and the Greater Houston Wastewater Program managed by the Brown & Root and Montgomery Watson Joint Venture team. Her career ultimately expanded to Atlanta, Georgia, to work on the Parson Brinkerhoff, Hardin, and Ozanne Joint Venture Team for the improvements of Hartsfield-Jackson International Airport in preparation for the 1996 Olympics under the leadership

of Ozanne Construction Company. After a major decision to make Atlanta, Georgia, her permanent home, the business spirit of the city allowed Lisa to gain her entrepreneurial wings by establishing L.R. Richards Construction. In her 17 years as President and CEO of L.R. Richards Construction, Lisa has built her company's solid reputation and her professional competency in the industry by delivering the best possible services with the highest



integrity. She enjoys volunteering in educational and wellness programs in her community. In order to achieve in life, Lisa strongly believes the path to success is continuous education. At any level; education, dedication, and hard work, unlocks the door to all possibilities.

# Student Accomplishments



## Maritime Senior Interning at the Port of Houston Authority

Marlin Ingram, Senior Maritime Transportation Management and Security major, is interning at the Port of Houston Authority (PHA) this summer. Marlin will work in the Department of Health, Safety, Security, and Emergency Management (HSSE). As an intern, Marlin will receive "real world" insight into maritime and security. He will also be exposed to the daily operations of other business partners at PHA.

Marlin's internship assignments include exposure to Maritime transportation security training as well as escort training, and the expectation is that he will eventually be able to provide instructor-led training to a group. He will be trained on building key and core access control systems, and will aid in installation of some of these appliances throughout the PHA. He will assist the internal security audit team in assessing current security practices, as described in the PHA facility security plan, referencing the security management system standard. Marlin will work with a PHA tenant partner as a deck hand aboard a sea-

going tug. Typically this encompasses 5 days on a boat in the Gulf of Mexico. He will also ride along with Port Police and proprietary security personnel during a "normal" workday.

Marlin will be assigned to two PHA marine firehouses, on separate days, and will be exposed to daily operations of the emergency response teams. In addition, he will receive basic incident command structure training, and will also participate as a PHA representative during a simulated port security exercise.

Capt. Marcus Woodring, a TSU Maritime Industry Advisory Board member and strong supporter of the Maritime program, will serve as Marlin's supervisor and mentor for the internship. Marlin is a dedicated Maritime student and serves as the Vice President of the Maritime Student Association, and is a member of the COST Dean's Student Advisory Council. He will graduate in December '14.



## TSU Student Interns with the FAA Headquarters, Washington, DC

TSU student Anthony Fathabadi, an Aviation Science Management major with a 3.64 grade point average, was selected for an internship with the Federal Aviation Administration (FAA) in Washington D.C. for the summer 2014. Anthony transferred to Texas Southern in Spring 2013 and has continuously excelled in his studies. He is currently working at FAA headquarters in the office of the Deputy Administrator for Flight Safety and reports to Ms. Margaret Gilligan, Associate Administrator for Aviation Safety. Mr. Fathabadi applied for the internship through The Washington Center (TWC) for internships and Academic Seminars, which is the largest academic internship program of its kind in the country.

The TWC internship program helps students bridge the gaps between college life and their professional future. Eight hundred contenders submitted an application to the TWC for the FAA internships;



only 25 were selected; and Anthony was one of them. Since its inception, more than 50,000 students have benefitted from numerous internship programs. Anthony, who is scheduled to graduate in the fall 2014 commencement, recently informed the department that his internship has been extended through December 2014. Mr. Fathabadi's performance, hard work, dedication, and passion for aviation have opened doors for his TSU colleagues to acquire prestigious internship opportunities through the Washington Center, in the future.

### FALL 2014 MID-TERM MADNESS

WEDNESDAY, OCTOBER 8, 2014  
TSU Science Center Atrium

FREE FOOD

5:00 - 10:00 PM

STUDY HELP

### MANDATORY FRESHMEN AND NEW TRANSFER STUDENT CLASS MEETING

### COST 101 Dates

September 17, 2014  
October 22, 2014  
November 19, 2014

TSU Science Center 158  
12:00 - 1:00 PM

For more information call us at:  
713-313-1872 or  
e-mail us at:  
coststudentservices@tsu.edu

Refreshments will be Served

# Scholarly and Creative Activities

## Publications

Handy CR, Vrinceanu D, Gupta R (2014). A moments' analysis of quasi-exactly solvable systems: a new perspective on the sextic potential  $g x^6 + b x^4 + m x^2 + \beta/x^2$ , J. Physics, A 47, 295203.

Handy CR, Vrinceanu D, Gupta R (2014). A Moments' Analysis of Quasi-Exactly Solvable Systems: A New Perspective on the Sextic Anharmonic and Bender-Dunne Potentials. Mathematical, Physics, arXiv.org, 1402.5868.

Maruthi Sridhar BB, Han FX, Vincent RK (2014). Remote sensing of nutrient concentrations of soils and crops in bio-solid amended soils. In Applied Manure and Nutrient

Chemistry for Sustainable Agriculture and Environment, He Z and Zhang H. (Eds.). Springer Press, NY.

Maruthi Sridhar BB, Witter JD, Wu C, Spongberg AL, Vincent RK (2014). Effect of bio-solid amendments on the metal and nutrient uptake and spectral characteristics of five vegetable plants. Water Air & Soil Pollution, 225: 1-14.

Player A, Oguamanam T, Okanmelu J, Burrell K, and Hollomon M (2014). Preliminary characterization of IL32 in basal-like/triple negative compared to other types of breast cell lines and tissues. BMC Res Notes. 2014 Aug 7;7:501.

## Meetings/Presentations

Harvey M, Pollard J, Wen Z, Song G. Measurement of the Neutron Ambient Dose Equivalent from the TrueBeam Linac Head and Varian 2100 Clinac. 56th Annual Meeting of The American Association of Physicists in Medicine, Austin, Texas, July 20-24, 2014.

Hillar M. Evolution and Historical Explanation: Contingency, Convergence, and Teleology, Ian Ramsey Center for Science and Religion. St. Anne College, University of Oxford, UK, July 17-19, 2014.

Hillar M. International Meeting of Society of Biblical Studies at Vienna, Austria, July 6-10, 2014.

Osakue EE and Smith D (2014), A 6S Experience in a Manufacturing Facility, ASEE (American Society for Engineering Education) National Conference, Indianapolis, June 15-18.

Vrinceanu D. Accurate quantum states for a 2D-dipole, Meeting of the Division of Atomic, Molecular, and Optical Physics of the American Physical Society, Madison, WI, June 2014.

Vrinceanu D. Proton and electron-hydrogen collisions for Rydberg n,l-changing transitions in the early Universe, Department of Physics and Astronomy, University of Kentucky, March 2014.

## Grants

Dr. Mark Harvey received a two-year grant from the Nuclear Regulatory Commission for \$200K in support of "Medical Health Physics Scholarship."

Dr. Carlos Handy received a two-year grant/sub award of \$ 169,892 from Office of Naval

Research through UT-Austin, focusing on Scholarships and Physics Outreach.

Dr. Maruthi Sridhar BB. (PI). Landscape level patterns of mercury contamination and bioaccumulation in East Fork Poplar Creek (EFPC) watershed, 2014-2015, \$ 15,000. US DOE.

## Faculty Spotlight: Oscar H Criner

*Continued from page 5*

used radio-telephones and portable computer terminals to connect with a mainframe in Cupertino, California from remote sites in Seattle, Washington. This technology is in your pocket, today, but was cutting edge in 1970.

Social issues had begun to dominate his thinking and activity and he was invited to join the Westside Community Mental Health Center, Inc. in San Francisco as Assistant Director for Operations. At Westside, he constructed management information systems (MIS) for the 40 social service agencies that comprised the center.

The Westside position and Dr. Criner's advocacy for health care in the minority community led to his being appointed to several health care organizations including the Board of Directors, Bay Area Comprehensive Health Planning Council, San Francisco; the Committee on Admissions of the University of California Medical School, San Francisco, California; and the Board of Directors, Alameda County Unit, American Cancer Society, Oakland, California. Finally, this activity led to his being invited to join the faculty of the Department of Black Studies at San Francisco State University. There, his research in economics and the scientific workforce led to his understanding of the barriers

that prevent African-Americans from entering scientific professions and motivated his decision to become an advocate for science education and to teach at a historically black college. After a search of computer science programs in colleges around the country, Dr. Criner found a perfect match, Texas Southern University, in his hometown, needed a person to head the computer science program. He became the first head of the Department of Computer Science at Texas Southern University in September 1976. He built a student body from 50 in 1976 to over 700 in 1984, when he left the position to become the Founding Dean of the College of Science and Technology.

He left the Deanship in 1986 and returned to industry on a faculty development leave. From 1987 to 1993 he served as a consultant on software quality and productivity for large software manufacturers, AT&T Bell Laboratories and Motorola. From 1989 to 1992, he also served as an MIS consultant for the Governor's Capital Improvement Program in St. Thomas, U.S.V.I. Dr. Criner teaches computer science, computational modeling, and environmental modeling. His current research interests are complex systems, modeling of the environment, complexity economics, and computational finance.

**Open House:**  
**Alumni and Partnership Luncheon**  
**Thursday November 6, 2014**

10:00 a.m. – 2:00 p.m. (Open Lab)  
11:30 a.m. – 1:00 p.m. (Lunch and Program)

**TSU Science Center Atrium**

RSVP: Ms. Charlotte Whaley  
Email: [whaley\\_cs@tsu.edu](mailto:whaley_cs@tsu.edu); Tel: 713 313 7009