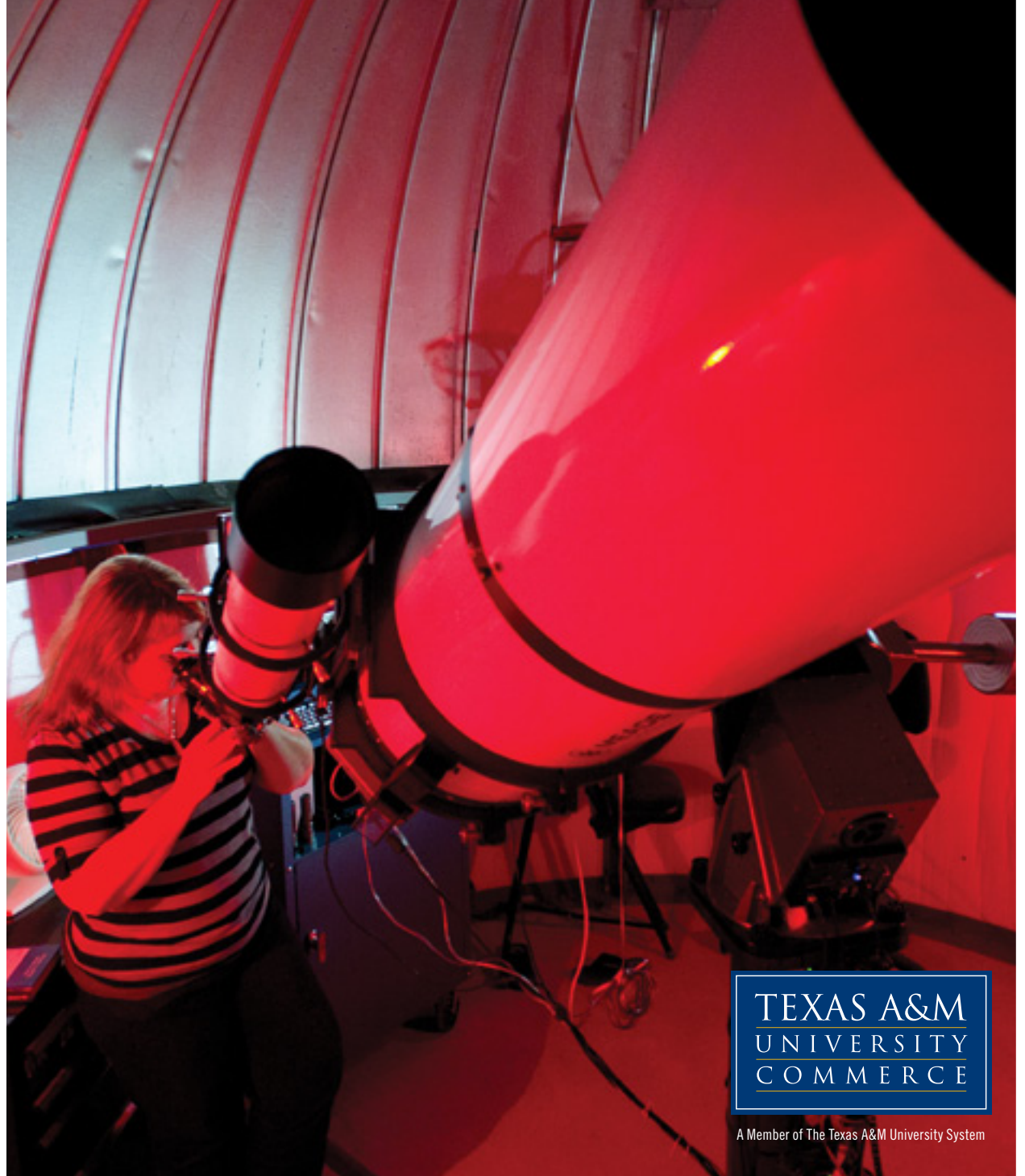


INNOVATE



TEXAS A&M
UNIVERSITY
COMMERCE

A Member of The Texas A&M University System

Introduction by Dr. Allan Headley

At A&M-Commerce, one of our guiding principles is to strengthen the nexus between teaching and research in ways that speak to the university's imperative both to create and disseminate knowledge. Through collaborative research efforts with public education and industry, the university is actively preparing tomorrow's workforce for the high-demand fields of science, technology, engineering and mathematics (STEM), while consequently supporting the economic well being of North-east Texas and our nation.

At the elementary and secondary levels, the university's STEM initiatives have given the region's K-12 teachers and students access to cutting-edge research and state-of-the-art instrumentation. Teachers who have participated in the STEM programs report improved teaching strategies and increased student achievement. Through recently awarded federal grants, including those from the National Science Foundation (NSF), the numbers of students who enter and pursue careers in STEM disciplines are increasing.



Dr. Allan Headley, dean of Graduate Studies and Research, Texas A&M University-Commerce

A&M-Commerce has recognized the important role community colleges play in the educational pipeline. As such, the university has various NSF-funded initiatives to engage community college students in meaningful research. Through these and other projects, a greater number of community college students have participated in innovative research activities on campus, and have gone on to pursue undergraduate and graduate degrees in STEM disciplines.

Research opportunities at A&M-Commerce extend to undergraduate students thanks to the recent establishment of the Center of Undergraduate Research and Creative Activities (CURCA), which coordinates and supports research opportunities in the STEM areas, education, the arts, and humanities. CURCA's main focus is increasing interest and participation in research among undergraduates, and is particularly important for first-generation and economically disadvantaged students, as well as those who have typically been underrepresented in careers and fields critically important to the nation's economic vitality.

Corporate partnerships like L-3 Communications and Integrated Systems and others, have provided our faculty with the funding to develop high-performance computing methods and capabilities. Such projects provide students with real-world research and educational options currently unavailable in the region. Other corporate outreach efforts have also been made to support economic development, and provide internships and other opportunities for students and faculty researchers.

The features in this newsletter are only a glimpse of the research and creative activities in progress at A&M-Commerce. To learn more about other scholarly work conducted at the university, I encourage you to visit our Web site where you will find a list of peer-reviewed publications, and more information on the scholarly achievements and international recognition A&M-Commerce faculty continue to bring to campus.

Allan Headley, Ph.D.
Dean of Graduate Studies and Research

Science, Technology, Engineering, and Mathematics (STEM) Research

The importance of STEM research has never been as critical as today, and A&M-Commerce is responding to the need with research in a variety of scientific fields including physics, computational science, chemistry, mathematics, engineering, biology, and agricultural sciences.

Current Projects

- Nuclear fusion
- Fission
- Reactions in the primordial universe
- Stellar structure
- Formation of elements in the cosmos
- Computational modeling

Community Partnerships

A&M-Commerce is partnering with Texas AgriLife Extension Service and the Hopkins County Agricultural Workers on the Beginning Hispanic Farmers and Ranchers (BBBHR) project, supported by a grant funded through the United States Department of Agriculture (USDA). Together, we're working to provide timely and relevant training to Hispanic farm workers and part-time farmers and ranchers who are interested in expanding their involvement in farm ownership and management. This project utilizes relevant sociological and instructional models for serving rural Hispanics involved in agriculture.



STEM Education Initiatives

In response to “The Gathering Storm” and other national research reports highlighting America’s critical need for scientists, engineers and mathematicians, research initiatives are underway with local K-12 schools and community colleges to better prepare tomorrow’s workforce. To find and engage future scientists, engineers and mathematicians, this educational “pipeline” provides an opportunity for innovative and imaginative ideas that engage students early and focus their future career goals on STEM education. Grants from the National Science Foundation and the Department of Education currently support innovative and motivating projects that identify K-12 students and teachers and provide opportunities for them to interact and learn from top scientists and mathematicians.

Current Project: Maximizing Motivation, Targeting Technology (M2T2) sponsored by the National Science Foundation, led by Dr. Gilbert Naizer This three-year research effort targets the uses of technology to motivate rural middle schools students encouraging them to pursue careers in the STEM workforce. M2T2 provides year-round programming following an intensive summer camp for 36 in rural Northeast Texas each year. Out-of-school time is maximized through a summer two week summer camp which brings teams of 9th and 10th grade students with math and/or science teachers from surrounding rural schools in collaborative learning activities with STEM professors from the university.

Community Impact:

- Rural high school students are encouraged to seek majors and careers in STEM disciplines
- Public school teachers’ teaching skills are enhanced
- Teachers are better equipped to encourage and guide students to pursue in coursework in high school and college in the STEM fields

FACULTY FOCUS

Dr. Bao-An Li is utilizing nuclear physics and astrophysics to help the scientific community better understand the origin of



elements and nature of matter under

extreme conditions, as well as the evolution of the Universe. Dr.

Bao-An Li’s research in this area is currently

funded by the National Science Foundation, NASA and the Texas Coordinating Board of Higher Education.

Dr. Carlos Bertulani is



currently collaborating with 56 theorists from nine

universities and seven national laboratories to

perform large scale computing studies of nuclear properties and nuclear reactions of interest to national security.

Educational Research and Institutional Development



The LISTO project, funded by the U.S. Department of Education, improves the ability of teachers to meet the needs of English Language Learners (ELL) and to implement a two-way immersion program in grades K-6 and a Sheltered Instruction Observation Protocol (SIOP) model in grades 7-10. Drs. Martha Foote and Chris Green have worked since 2007 to implement LISTO to better meet the needs of the growing population of ELL students in our region.

Community Development and Outreach



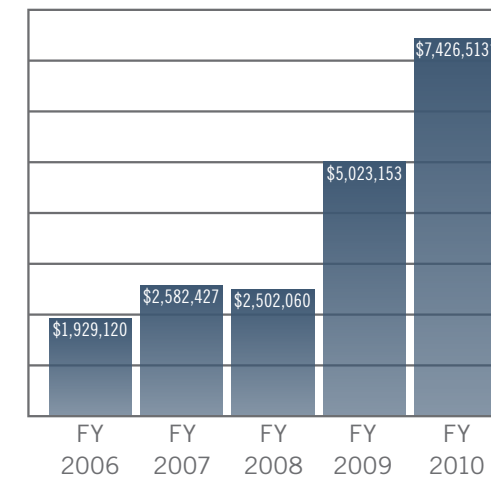
Research initiatives in the area of community development include mentoring children with incarcerated parents, mentoring incarcerated juvenile offenders, providing training and education on campus about violence against women (including stalking, sexual assault, and domestic violence), and hosting an annual conference to provide a college experience for high school students in foster care. These programs provide learning and research opportunities for both faculty and students and enable faculty from the social work department to partner with community organizations.



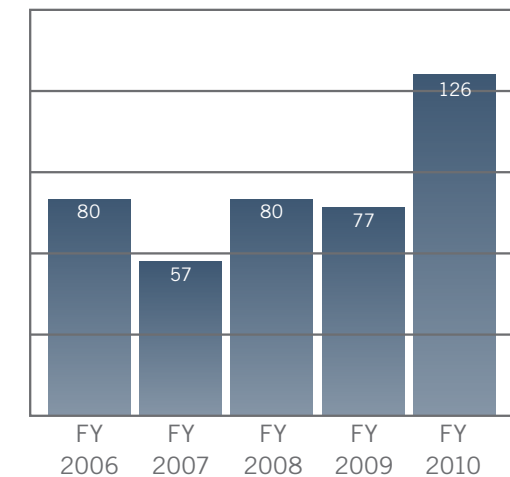
Research Funding

Research expenditures continue to increase owing to the cutting-edge research and various new initiatives by our faculty members. The total awards, including multi-year awards, for FY 10 has reached the highest ever for the university. Our faculty members continue to increase their research activities and there has been a 64% increase in the number of proposals submitted this year, compared to last year. A major accomplishment is that there has been a steady increase in federally funded projects and FY 2011 just over 50% of all extramural funds are from federal sources.

Extramural Funding Received Five Year Trend
Fiscal years 2006 – 2010

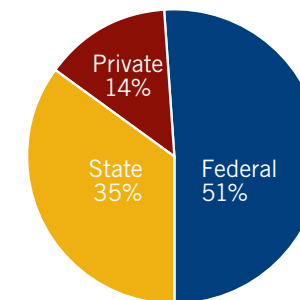


Extramural Funding Requests Five Year Trend
Fiscal Years 2006 – 2010



* Multi-year awards. Previous years are reported as annual awards.

Research Expenditures
by Funding Source
FY 2010





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Graduate Studies & Research

Texas A&M-Commerce
PO Box 3011
Commerce, TX 75429-3011
www.tamu-commerce.edu/gradschool
903.886.5163

