College of Science, Engineering, and Agriculture
Preliminary Strategic Plan, October 2012

The College of Science, Engineering, and Agriculture (CoSEA) was created in 2011 from a fissioning of the former College of Arts and Sciences into two distinct academic units. CoSEA was founded with 15 baccalaureate degree programs and 7 master's level graduate degree programs administered under seven departments: Agricultural Sciences, Biological and Environmental Sciences, Chemistry, Computer Sciences and Information Systems, Engineering & Technology, Mathematics, and Physics and Astronomy.

The first official act of the new college was to adopt the mission statement "**Innovation and Discovery**" which is the foundation of all we do. We are dedicated to innovative teaching and learning techniques for both majors and non-majors, and to discovering new knowledge through the STEAM (Science, Technology, Engineering, Agriculture, and Mathematics) disciplines. Our basic shared belief is that we can apply STEAM approaches and techniques to the discovery and development of new and tangible products, theories, and applications that benefit humankind and add to human knowledge. Our research philosophy ties directly back in to our learning environments as we strive to create the next generation of STEAM-literate citizens. Our college philosophy is based on a service-oriented attitude to our students, our university colleagues and peers, to the taxpayers of Texas, and to the United States, and to the world as a whole. We are keenly aware that innovation and discovery are the cornerstones of success in our emerging and competitive global civilization.

It is our intent and practice to achieve the goals of our mission by building the administrative foundations of CoSEA on the bedrock of continual self-assessment. A culture of assessment is thus the basis of all we do. We strive for 100% transparency, integrity, and accountability. We support our students, we support our staff, and we support the professional excellence of our faculty. We maintain a continuous focus on compliance and accreditation with respect to the SACS-COC, ABET, and the THECB.

College Goals

The college has established near, intermediate and long-term goals based on vertically-aligned mission-driven objectives. Chief among these are establishment of program-level and college level procedures and practices for administrative support including tenure and promotion, probationary and annual reviews, curriculum development, four-year course scheduling rotations, and fiscal oversight.

In addition to these hard goals, we have identified several soft but important structural goals including (a) continuous assessment of student learning, career preparation, and timely and accurate advising. For our faculty, we are committed to continuous professional development, and establishment of fiscally-sound course scheduling rubrics which directly address student success. For our university

community, we pledge to set an example in service, collegiality, compliance, engagement, and assessment.

Measurable Goals

1. Mission: Establish the remainder of the vertically-aligned programmatic mission and goals statements for each degree within the college — Because CoSEA is a new college, our mission statement (Innovation and Discovery) is also new. Some the college's departments and programs have created and aligned their mission statements with the college mission, but not all. In FY13 we will complete this objective.

2. Transparency and Communications: CoSEA will establish a faculty resources website for open storage and access to college documents. Faculty and staff list-serves will be created and distributed. Boilerplate text supporting extramural grant generation will be maintained and distributed. Historical data on CoSEA student demographics and success rates will be published. Budgetary items including HEF and Instructional Enhancement will be openly distributed with routine input from faculty and department heads solicited and incorporated.

3. Performance: CoSEA currently produces ≈24% of all TAMUC formula funding with ≈18% of the headcount faculty. While laudable, the college is currently operating beyond design capacity. According to the 2011 Dowling Report, CoSEA is 18 FTEs short of the faculty needed to effectively deliver our programs. As a result, the ability to increase productivity is severely limited. We will aggressively pursue an efficiency-based budgetary model which will allow CoSEA to contribute even more effectively to the mission and success of Texas A&M University-Commerce.

4. Professional Development: CoSEA will create on-line teaching orientation coursework for Graduate Assistants and Adjunct faculty. Presently, such training does not exist. As a result, new graduate teaching assistants and adjuncts receive little, if any, training. Our goal is to develop a course that will assist them in succeeding as teachers. Topics to be included are student learning styles, the syllabus, how to access rolls, grading, professional best practices, TAMUC procedures, handling problem students, setting the classroom tone, and ordering reading and support materials.

5. Integrated Budget Management: CoSEA will create and publish four-year course schedule rotations directly pointed at increasing student access, retention, and success. In addition, we will establish multi-year budgets for equipment maintenance, replacement, and deferred maintenance. Budget requests for new positions (both faculty and staff) will be tied to institutional goals and supported with efficiency-based metrics.

6. Globalization: CoSEA has been particularly successful with recruiting and graduating STEM majors from international settings. However, recent enrollment trends have been negatively impacted by changes in U.S. immigration policy and by increased

competition for out-of-state and foreign students. We will aggressively pursue incentive funding to increase TAMUC's competitive position for recruiting these students. Target populations include students from South Korea, India, China, and Saudi Arabia.

7. Core Curriculum: Participate in developing criteria for establishing the new undergraduate curriculum core — The THECB has enacted new standards for university core curricula that are competency based and cover a new set of "Foundational Component Areas." These are to be in place starting in 2014. Our college goal is to take an active role in helping the university develop the new core curriculum in compliance with these new standards.

8. Access: Develop Computer Science and Environmental Science degree programs at Navarro College. CoSEA is in an excellent position to offer partnering off-site degree programs. Preliminary discussions and student needs surveys have established CSCI and ENVS are the highest-demand needs in the south-Metroplex area.

9. On-Line Presence: Expand our on-line and off-site presence — The Department of Biological and Environmental Science has obtained full approval to offer an MS degree program in biological sciences fully on-line. The most prominent market for this program are in-service teachers. Inquiries into this program have been coming in at a steady rate. It is a goal of the department and of the college to expand the number of students enrolled in this program. Further, with the establishment of the new university facility in Rockwall, it is a goal of the college to begin offering several courses there every semester.

10. Student Success: Student advising resources will be pushed onto mobile devices — Currently, CoSEA has one page that identifies faculty advisors and lists their contact information. Information related to degree plans is housed within the online catalog, which cannot be accessed by mobile devices because of operating specifications associated with mobile devices. CoSEA's *Office of Academic Advising & Student Success* (A2S2) will expand online advising resources. The goal is to have degree plan information, cost calculators & contact information for all programs fully online and formatted for greater ease of accessibility.

11. Undergraduate Research: The existing Chemistry REU (Research Experience for Undergraduates) program, focusing on community college students in the northeast Texas areas, will be supported and expanded. NSF funding to support the program started in 2006. Drs. Jang and Headley submitted a new REU proposal to NSF in September 2012 to request funding to continue the program beyond 2013. If funded, the recruiting will start in Fall 2013 for the summer program in 2014. Physics students will become actively involved in research through our membership in the Southeastern Association for Research in Astronomy (SARA). This consortium of 11 member universities operates 2 research-grade telescopes (Kitt Peak for the northern hemisphere, and Cerro Tololo for the southern hemisphere). These remotely-operated devices will be available to TAMU-C for over 50 nights per year. Students participating

in SARA research projects will be encouraged to participate as co-authors on publications that will appear in the peer-reviewed literature.

12. Statewide Leadership: The CoSEA Physcs and Astronomy program will assume a leadership role in the Texas Physics Consortium (TPC). This multi-campus collaborative has been created in response to THECB requests for faster, better, cheaper delivery of STEM degrees in traditionally under-represented areas of the state. Consortium members include: Texas A&M University-Commerce, Midwestern State University, Prairie View A&M University, Tarleton State University, Texas A&M University-Corpus Christi, Texas A&M University-Kingsville, Texas Southern University, and West Texas A&M University. The goals of the Consortium are to (1) provide a joint Physics baccalaureate degree at a minimal cost to the State of Texas using distributed resources, (2) increase the number of Physics and other STEM graduates from under-represented groups, (3) supply high quality upper-division courses in physics and closely-related disciplines, (4) provide research opportunities for undergraduate majors and minors in physics and closely related disciplines, (5) create the administrative infrastructure necessary to enable the TPC to function as a "distributed academic program," and (6) provide a functioning model of a distributed academic program for adoption elsewhere.

13. Low-Producing Programs: The brunt of the impact from the THECB low-producing programs rule has fallen on STEM disciplines. New and even more stringent criteria will magnify this impact in the next few biennia. Programs most in need to increased recruitment and student success are agribusiness, environmental science, wildlife & conservation science, chemistry, physics, and the master's degree programs in chemistry, mathematics, and physics. CoSEA will respond by increasing student access and by refocusing our target populations to teacher candidates, particularly at the graduate level.

13. Community Engagement in Agriculture: Northeast Texas remains a primarily rural and agricultural area. Traditional college routes do not exist for many first-generation students. For those who do venture into higher education, agriculture is one of the more popular avenues and a well-known area of excellence for TAMUC. CoSEA will expand our public footprint in this regional niche through outreach and education in food production and marketing, equine and animal science, and agribusiness. We will actively participate in efforts to fund and re-establish ag-oriented team activities, including rodeo, equine, or equestrian.