Texas Collaborative for Excellence in Teacher Preparation

TxCETP

Texas A&M University — Commerce

CAMPUS REPORT May 2005

I. INTRODUCTION

This document presents a progress report of the Texas A&M University – Commerce (TAMUC), with a focus on the cumulative impact of TxCETP and plans for sustaining accomplishments. The report is organized by TxCETP goals, which cover these areas:

1. Course reform
2. Recruitment of students to STEM teaching
3. Preservice teacher and novice teacher support
4. Systemic reform connections

Because of the inherent overlap between Goal 2: Recruitment, and Goal 3: Preservice teacher and novice teacher support, the reader may find individual campus differences in which goal the strategies and activities are placed to accomplish these goals.

The following data sources have been used to show evidence of the extent to which these goals have been achieved:

- NSF reporting system
- State Board of Educator Certifications
- Student and faculty course surveys
- Campus Team Leader reports/interviews
- Campus Strategic Plan
- NSF Scholar application narratives

To provide a context for interpreting the TxCETP progress data, the next section includes some background information on TAMUC - a brief campus description, faculty and K-12 teacher involvement in TxCETP, and student participation in the teacher education program.

II. BACKGROUND INFORMATION

1. CAMPUS DESCRIPTION

Texas A&M University-Commerce is the second largest university in the Texas A&M University System and is known as a top producer of public school teachers and other educational professionals in Texas. The university was founded in 1889 as East Texas Normal College. It became a state institution in 1917 and joined the A&M System in 1996. With the main campus location in northeast Texas, about a 60-minute drive from Dallas/Fort Worth, and branch campuses in Mesquite and downtown Dallas, the university plays a key role in the A&M System's growing presence in North Texas.

The mission is simply stated: TAMU-Commerce nurtures and educates for success through access to academic research, and service programs of high quality.

Based on the most recent IPEDS data from school year 2003-04, the overall enrollment in Fall of 2003 was 8,391, and 63.3% of the students were undergraduates. The ethnic make-up of the undergraduates was approximately 71.9% White, 18.2% Black, and 5.9% Hispanic. The university awarded 1,096 Baccalaureate degrees between July 1, 2003 and June 30, 2004; 323 of these in Multi/Interdisciplinary Studies, 171 in Business Management, 63 in Visual and Performing Arts, 58 Agriculture Operations and Related Sciences, and 55 in Psychology.

2. PARTICIPATION IN TxCETP BY CALENDAR YEAR

The following tables show the number of faculty and K-12 educators involved in TxCETP implementation and benefiting from these reform efforts by TAMUC since the year 2000:

Table 1a: Campus Participation by Calendar Year

	Implementation					Beneficiaries				
	2000	**2001**	**2002**	**2003**	**2004**	**2000**	**2001**	**2002**	**2003**	**2004**
College of Education	2	2	2	4	2	0	0	1	0	2
Science	2	4	4	6	7	3	2	3	3	2
Mathematics	1	3	8	9	4	5	5	2	2	1
Other	0	0	0	0	0	0	0	0	0	0
Total	**5**	**9**	**14**	**19**	**13**	**8**	**7**	**6**	**5**	**5**

Source: NSF Data Reports

Table 1b: Community College Participation

	Implementation					Beneficiaries				
	2000	**2001**	**2002**	**2003**	**2004**	**2000**	**2001**	**2002**	**2003**	**2004**
College of Education	0	0	0	0	0	0	0	0	1	0
Science	0	0	0	0	1	2	4	3	0	2
Mathematics	0	0	0	0	2	0	2	3	2	10
Other	0	0	0	0	0	0	0	0	0	0
Total	**0**	**0**	**0**	**0**	**3**	**2**	**6**	**6**	**3**	**12**

Source: Campus Activities Reports

Table 2: K-12 Participation by Calendar Year

	Implementation					Beneficiaries				
	2000	**2001**	**2002**	**2003**	**2004**	**2000**	**2001**	**2002**	**2003**	**2004**
Elementary Teachers	14	0	0	1	0	30	50	70	85	80
Mathematics Teachers	0	1	1	0	2	2	3	5	7	8
Science Teachers	0	5	2	3	2	2	4	13	4	10
Mathematics/ Science Teachers	0	0	0	0	0	0	0	0	0	2
Administrators	2	0	0	0	1	0	0	0	0	0
Total	**16**	**6**	**3**	**4**	**5**	**34**	**57**	**88**	**96**	**100**

Source: NSF Data Reports

3. STUDENT PARTICIPATION IN TEACHER PREPARATION PROGRAM – ENROLLMENT, GRADUATION, AND CERTIFICATION

The next four tables provide the following information:

- Juniors and seniors enrolled in teacher preparation program by major and ethnicity
- Bachelor degrees from the teacher preparation program by major
- Post-Baccalaureate certification students from the teacher preparation program by major
- Initial ExCET/TExES Test Takers by Area and Academic Year

The key for the column headers is as follows: E = Elementary Education, M=Mathematics, S=Science.

Table 3: Juniors & Seniors Preparing to be Teachers by Ethnicity and Major

Ethnicity	Fall 2000				Fall 2001				Fall 2002				Fall 2003				Fall 2004			
	E	M	S	Total	E	M	S	Total	E	M	S	Total	E	M	S	Total	E	M	S	Total
African American/Black	30	4	1	7%	33	2	1	7%	45	1	1	8%	81	1	0	10%	101	3	0	12%
Anglo/White	394	30	15	88%	462	8	11	86%	491	15	4	85%	615	17	1	82%	669	16	1	79%
Hispanic	23	0	0	4%	34	0	0	6%	36	0	0	6%	46	0	0	6%	52	1	0	6%
Native American	3	0	0	1%	4	0	0	1%	4	0	0	1%	8	0	0	1%	16	0	0	2%
Asian	0	0	0	---	0	0	0	---	0	0	0	---	7	0	0	1%	0	1	0	0%
Other/Not Reported	0	0	0	---	2	0	0	.5%	2	0	0	.5%	3	0	0	---	4	0	0	1%
Total	**450**	**34**	**16**	**500**	**535**	**10**	**12**	**557**	**578**	**16**	**5**	**599**	**760**	**18**	**1**	**779**	**842**	**21**	**1**	**864**

Source: NSF Data Reports

Table 4: Baccalaureate Degrees Awarded to Students Preparing to be Teachers by Major and Calendar Year

Ethnicity	2000				2001				2002				2003				2004			
	E	M	S	Total	E	M	S	Total	E	M	S	Total	E	M	S	Total	E	M	S	Total
African American/Black	9	0	0	4%	11	0	0	6%	12	0	0	5%	15	2	0	9%	17	0	0	5%
Native American	0	0	0	---	0	0	0	---	3	0	0	1%	1	0	0	---	2	0	0	1%
Native Hawaiian/ Pacific Islander	0	0	0	---	0	0	0	---	1	0	0	.5%	0	0	0	---	2	0	0	1%
Asian	1	0	0	.5%	0	0	0	---	0	0	0	---	0	0	0	---	0	0	0	0%
Anglo/White	206	7	4	92%	146	6	8	89%	197	5	3	89%	156	3	2	82%	258	6	4	86%
Hispanic	8	0	0	3%	8	0	0	4%	9	0	0	4%	17	0	0	9%	19	0	0	6%
Other/Not Reported	0	0	0	---	0	0	1	.5%	0	0	0	---	0	0	0	---	**2**	**0**	**0**	1%
Total	**224**	**7**	**4**	**235**	**165**	**6**	**9**	**180**	**222**	**5**	**3**	**230**	**189**	**5**	**2**	**196**	**300**	**6**	**4**	**310**

Source: NSF Data Reports

Table 5: Post-Baccalaureate Students Certified by Major and Calendar Year					
Major	**2000**	**2001**	**2002**	**2003**	**2004**
Elementary Education	33	30	30	114	110
Mathematics	12	9	6	28	23
Science	12	16	10	23	27
Mathematics/Science	0	0	0	0	2
Total	**57**	**55**	**46**	**165**	**162**

Source: Campus Activities Reports

Table 6: Number of Initial ExCET/TExES Test Takers by Area and Academic Year					
Area	**(9/99-8/00)**	**(9/00-8/01)**	**(9/01-8/02)**	**(9/02-8/03)**	**(9/03-8/04)**
Early Childhood Education	33	56	40	39	-
Elementary Comprehensive	217	239	315	116	-
Professional Development (Elementary)	213	214	338	137	-
Generalist EC-4	-	-	-	312	538
Generalist 4-8	-	-	-	-	7
Pedagogy and Professional Responsibilities EC-4	-	-	-	128	388
Pedagogy and Professional Responsibilities 4-8	-	-	-	12	73
Pedagogy and Professional Responsibilities 8-12	-	-	-	45	221
Pedagogy and Professional Responsibilities EC-12	-	-	-	5	93
Mathematics (Secondary)	15	10	17	20	-
Mathematics 4-8	-	-	-	29	41
Mathematics 8-12	-	-	-	5	35
Mathematics/Science 4-8	-	-	-	4	8
Science 4-8	-	-	-	24	22
Science 8-12	-	-	-	7	12
Biology (Secondary)	-	7	13	19	-
Chemistry (Secondary)	-	3	1	4	-
Composite Science (Secondary)	-	4	2	5	-
Earth Science (Secondary)	-	2	-	2	-
Life/Earth Science (Secondary)	2	1	1	4	-
Life Science 8-12	-	-	-	3	10
Physical Science (Secondary)	-	1	-	1	-
Physical Science 8-12	-	-	-	1	4
Physics (Secondary)	-	1	-	-	-
Psychology (Secondary)	1	1	2	2	-
Sociology (Secondary)	-	1	1	-	-

III. CUMULATIVE IMPACT OF TXCETP ON THIS CAMPUS

GOAL 1: COURSE REFORM

This section of the report describes the cumulative impact made to date in the area of Course Reform to systemically improve STEM teacher preparation. Specifically how TxCETP has impacted this campus in the TxCETP wide objectives:

- Expand course reform from Biology to Chemistry, Physics, Earth Sciences, and courses taken by elementary, math/science preservice teachers and potentially to all students enrolled in these courses.
- Integrate Texas Essential Knowledge and Skills (TEKS) and the state standards for teacher certification into mathematics and science courses.
- Introduce course reform to faculty through the use of various TxCETP-sponsored projects (e.g., Multi-Initiative Dissemination Chemistry Workshops, Inquiry for Professors, TxCETP Forum)

In addition, other impacts on this campus as a result of involvement in the TxCETP initiative are reported.

CUMULATIVE IMPACT OF TXCETP ON COURSE REFORM

TxCETP has been influential in reforming or creating numerous courses in our teacher education programs. Faculty in Mathematics; Biology, Earth & Environmental Sciences; Physics; Chemistry; as well as College of Education faculty have attended professional meetings and professional development opportunities and implemented some of the reform-based ideas into other courses. Many or these do not meet the criteria of a TxCETP reformed course, but changes have been made to improve courses based on these opportunities.

In addition, a TAMU Commerce faculty member taught a class for community college mathematics faculty related to reform-based instruction in remedial mathematics classes. In several cases, community college faculty and/or new university adjuncts observed TAMUC courses in order to be consistent with the implementation of reform methods in their sections or appropriate community college courses.

New courses from the table below are: IS 352, IS 451, MATH 352, MATH 361, MATH 362, MATH 380, ISCI # (a course in Chemistry methods for High School teachers that was developed, but not yet taught). The remaining courses in the table were revised.

The number of students impacted in these courses has increased dramatically over the early years of TxCETP as the courses were developed and added to programs. The decrease in Math 350 & 351 for 2004 is due to the fact that the Higher Education Coordinating Board has required that these courses can now be transferred from community colleges.

Table 7: Reformed Courses and Student Enrollment by Calendar Year						
Course #	**Course Title**	**Enrollment**				
		2000	**2001**	**2002**	**2003**	**2004**
ELED 437	Integrated Learning: Science in Field-Based Settings	-	37	66	132	105
ELED 558	Science Curriculum – Grades 1-8	-	8	14	57	44
IS 352	Science Inquiry II	-	-	37	70	217
IS 451	Science: Past and Future	-	11	25	-	24
ISCI 152	Integrated Science II	17	-	-	-	-
ISCI 351	Inquiry: Knowledge and Skills of Science	72	158	303	325	329
ISCI #	Teaching Physical Science for Secondary Teachers	-	-	-	-	-
MATH 350	Topics in Math for Elementary Teachers I	29	162	356	352	314
MATH 351	Topics in Math for Elementary Teachers II	-	212	303	343	327
MATH 352	Topics in Mathematics for Elementary Teachers III	-	-	-	6	160
MATH 361	Mathematical Modeling of Science I	-	14	23	20	45
MATH 362	Mathematical Modeling of Science II	-	-	13	16	12
MATH 372	Mathematical Structures and Applications	-	9	19	46	49
MATH 380	History of Math for Middle Level Teaching	-	-	17	23	27
MATH 460	Technology and Topics in Mathematics for Secondary Teachers	-	-	-	-	-
Total		**118**	**611**	**1,176**	**1,390**	**1,653**

Source: NSF Data Reports

GOAL 2: RECRUITMENT OF PRESERVICE TEACHERS

This section of the report describes the cumulative impact made to date in the area of Recruitment of more undergraduate students to STEM teaching. Specifically how this campus has been impacted by the TxCETP wide objectives:

- Use introductory courses and summer experiences to target freshmen and sophomore mathematics and science undergraduates for preservice teacher recruitment and retention.
- Use alternative certification and post-baccalaureate pathways for junior and senior mathematics and science majors who become interested in teaching careers.
- Recruit high school students from local districts, from the Texas and South Texas Rural Systemic Initiatives (TRSI and STRSI) districts, and from Regents' Initiative (TX A&M System Schools only) partner school districts to teaching careers.
- Recruit community college students with declared interest in STEM teaching careers, and facilitate their transfer to TxCETP campuses.

CUMULATIVE IMPACT OF TXCETP ON RECRUITMENT

The Alternative Certification (post-bac) program has grown dramatically in the past several years, as seen in Table 5 from years 2002 – 2003. One major area of growth has been in our middle level mathematics and science program. The growth is partially due to the fact that both of these programs have a large number of the required content courses specifically designed for middle level teachers and separate middle level education courses. Students report this as a major strength of the middle level program and are advocates in recruiting. Community college recruiting efforts continue through

the Regents Initiative sponsored recruiter/advisor at Eastfield College. This program has shown such success that TAMUC is funding this position at another community college.

While recruitment efforts have increased and enrollment trends in teacher education are positive, this effort has been limited by strained University resources and faculty shortages that do not allow us to expand course offerings. We have limited some recruiting efforts since we would not have courses available for them.

A large percentage of TxCETP level II funding has been used to support student travel to professional meetings such as NSTA, NCTM, CAST, CAMT, NASA, Texas Middle School Association, and Texas Computer Education Association. This support has been influential in recruiting some students to mathematics and science teaching from within our early childhood program and mathematics and science majors.

GOAL 3: SUPPORT FOR PRESERVICE AND NOVICE TEACHERS

This section of the report describes the cumulative impact made to date in the area of Support for Preservice and Novice Teachers to increase retention and quality. Specifically how TxCETP has impacted this campus in the TxCETP wide objectives:

- Disseminate reformed courses for preservice mathematics and science students. Include emphasis to tie to Informal Science partners (e.g., Fort Worth Museum, Texas Parks and Wildlife, Texas State Aquarium)
- Use student chapters of NCTM, NSTA, scholarships (TxCETP and Noyce Scolars), and travel awards to conferences to support preservice mathematics and science teachers.
- Assist with placement, induction and sustained professional development to novice mathematics and science teachers.

CUMULATIVE IMPACT OF TXCETP ON SUPPORT FOR PRESERVICE AND NOVICE TEACHERS

Part of this paragraph appears above as well, but applies to both areas. A large percentage of TxCETP level II funding has been used to support student travel to professional meetings such as NSTA, NCTM, CAST, CAMT, Texas Middle School Association, and Texas Computer Education Association. This support has been influential in recruiting some students to mathematics and science teaching from within our early childhood program and mathematics and science majors. Students who attend these conferences are clearly impacted by the attendance and eagerly share things they have learned with peers and their mentor teachers in field placements. The TxCETP faculty at Commerce believe this student support has been one of the most influential and positive aspects available to our students.

We have created a student chapter of NSTA in order to provide additional support to preservice teachers as well as some graduate student members. Mathematics clubs are also available as well as a very active Collegiate Middle School Association Chapter.

TxCETP faculty have also been involved in Teacher Quality professional development grants which provide ongoing support to pre and inservice teachers in the region.

Table 8: Student and Faculty Course Survey Results by TxCETP Vision Indicators						
Vision Indicators	**Percent of All Item Responses that were Always/Usually**					
	Fall 2003		**Spring 2004**		**Fall 2004**	
	Student (n=360)	Instructor (n=19)	Student (n=211)	Instructor (n=11)	Student (n=224)	Instructor (n=11)
Course Design	82%	91%	82%	100%	82%	100%
Prior Knowledge	85%	89%	85%	84%	84%	86%
Instructional Strategies	85%	93%	81%	98%	85%	96%
Assessments	86%	84%	85%	94%	87%	91%
Problem Solving	87%	82%	81%	82%	86%	82%
Multiple Representations	87%	86%	84%	94%	92%	91%
Learning Environment	82%	92%	83%	100%	82%	97%
Books, Materials & Technology	70%	77%	74%	55%	78%	73%

Source: Fall, 2003 Course Surveys; Spring, 2004 Course Surveys; Fall, 2004 Course Surveys

Table 9: TxCETP Scholars (L1), Student Awards (L2) and Noyce Scholars by Major												
Majors	**2002**				**2003**				**2004**			
	L1	L2	Noyce	Total	L1	L2	Noyce	Total	L1	L2	Noyce	Total
Elementary	4	0	0	4	0	0	0	0	0	0	0	0
Mathematics	5	9	2	16	5	5	4	14	7	2	2	11
Science	4	0	0	4	1	0	1	2	1	0	1	2
Mathematics/Science	3	2	0	5	5	2	0	7	5	0	0	5
Total	**16**	**11**	**2**	**29**	**11**	**7**	**5**	**23**	**13**	**2**	**3**	**18**

GOAL 4: MAKING SYSTEMIC REFORM CONNECTIONS

This section of the report describes the cumulative impact made to date in the area of Strengthening Systemic Reform Connections to maximize alignment and impact. Specifically how this campus has been impacted by the TxCETP wide objectives:

- Collaborate with STRIS/TRSI by involving mathematics and science specialists, and Teacher Partners in mentoring, lesson modeling, observations, workshops, etc. with TxCETP preservice and novice teachers.
- Collaborate with Texas Education Agency (TEA), State Board for Educator Certification (SBEC), and others to construct the new Texas Examinations of Educator Standards (TExES) to reflect standards-based instruction.
- Collaborate with Regents' Initiative (A&M Systems Schools) to coordinate activities with mathematics and science Academy members, campus recruiters, and data collection resources.

CUMULATIVE IMPACT OF TXCETP ON MAKING SYSTEMIC REFORM CONNECTIONS

TAMUC faculty have been actively involved with SBEC in development of standards, etc. for TeXES exams at the initial certification level as well as the Master Teacher level. The University has an extensive network of partnerships with public schools in the area through our field-based education programs that provide opportunities for strengthening mathematics and science teaching at all levels.

The University has embraced the Regents Initiative and faculty have benefited through involvement in the Academy. In addition, the Community College recruitment through this program has consistently led the system in recruitment efforts.

IV. STRATEGIES TO INSTITUTIONALIZE ACCOMPLISHMENTS

This section of the report describes plans for sustaining TxCETP accomplishments on this campus for each of the four goals: Course Reform, Recruitment of Students to STEM Teaching, Preservice Teacher and Novice Teacher Support and Systemic Reform Connections. In addition, plans to sustain other accomplishments on this campus as a result of involvement in the TxCETP initiative are reported.

PLANS FOR SUSTAINING COURSE REFORM

We have a cohort of faculty that have been involved in TxCETP courses. In some departments, these faculty teach all or a large majority of the courses for preservice teachers. As new instructors teach the courses, the current faculty assist them in understanding the syllabus and expected outcomes of the course. The existing collaborative understanding between the College of Education and the College of Arts and Sciences provides opportunities for faculty within the programs to work together to insure that the courses continue to be taught utilizing "reform" content and pedagogy. In addition, ongoing review of TExES exam results provides the opportunity to discuss course elements where appropriate.

PLANS FOR SUSTAINING RECRUITMENT OF STUDENTS INTO STEM TEACHING

The university has a long history of excellence and commitment to teacher education. Faculty and all levels of administration recognize this history and mission of the university and are committed to maintaining the legacy. The university takes pride in being one of the largest producers of teachers in the state and continues efforts to recruit into all areas of teaching with special attention to high need areas.

In addition to normal recruitment efforts, the University has several method additional methods of recruiting. Active recruitment will continue through our community college recruiters supported by the university as well as through the Alternative Certification program. The University administration has begun to project the idea that all faculty and staff are involved in recruitment and retention. This idea will ultimately lead to enhanced recruitment efforts.

In the fall the University should completing construction of a new state of the art science building. New buildings are always beneficial in recruiting and this potential is already being utilized. Additionally, the building has a planetarium, which will be helpful in recruiting by bring school and community groups as well as the general public to campus. The building and associated programs will have a major part in increasing visibility of the university in the region.

PLANS FOR SUSTAINING PRESERVICE AND NOVICE TEACHER SUPPORT

The administration has been approached regarding the possibility of continuing some level of funding in support of student travel to professional meetings. The initial reaction was positive although no commitments are yet in place. The student organizations will continue to grow and expand opportunities for students. The university network of public school partnerships will allow continued opportunities for support of novice teachers in these districts.

The course reform efforts will continue through efforts of the dedicated faculty. Additionally, department heads in mathematics and sciences are supportive of teacher education and continue to encourage efforts in this area. Faculty continue to examine TExES results and collaborate on ideas for maintaining and increasing our high passing rates. Periodic re-examination of curriculum and related to these exams is conducted collaboratively.

Continued support from the Teacher Quality grant program is expected in order to sustain some of the efforts in support of preservice and novice teachers. In addition, the University is active in Regents II activities as well as other initiatives.

PLANS FOR SUSTAINING SYSTEMIC REFORM CONNECTIONS

As this is perceived as valuable service by the university, faculty connections with various agencies and networks will continue. Faculty are currently active in state, regional and national organizations which provide opportunities for connections with various reform efforts.

PLANS FOR SUSTAINING OTHER TXCETP-RELATED ACCOMPLISHMENTS

The collaborations between mathematic, science and education departments and faculty has been a strength of this effort at TAMUC. Faculty & departments have established effective working relationships that will continue as the university maintains its commitment to teacher education.