



## Angelo State University

CAMPUS REPORT

May 2005

### I. INTRODUCTION

This document presents a progress report of Angelo State University (ASU), 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 ASU - 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

ASU is located in San Angelo, Texas. Originally named Angelo State College, it was established as a junior college in 1928. Growing rapidly, it became an accredited senior college in 1965 and authorized a graduate program in 1970. ASU was designated as a member of the Texas State University System in 1975.

ASU is a regional comprehensive coeducational institution offering programs in the liberal and fine arts, sciences, education for the health professions, teacher education, and business administration, as well as courses of study designed to meet entrance requirements for various professional schools. The university encourages programs of faculty research, which add to the total body of knowledge, develop new and improved techniques of instruction, and maintain the competence of faculty

members. Partnerships with local, regional, and state agencies increase the university's role in public education, business, health, and information retrieval.

Based on the most recent IPEDS data from school year 2003-04, the overall enrollment decreased slightly from Fall 1998 (N=6,304) to Fall 2003 (N=6,043). 93% of the Fall 2003 student body was undergraduates. The ethnic make up was approximately 69.5% White, 21.8% Hispanic, 5.7% Black, and the remaining, Asian, Native American and non-resident alien. The university awarded 821 Baccalaureate degrees between July 1, 2003 and June 30, 2004, 187 in Business Management, Marketing, & Related Support, 106 in Multi/Interdisciplinary Studies, 91 in Parks, Recreation, Leisure and Fitness, 85 in Psychology, and 60 in Communications, Journalism, and Related Programs.

## 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 ASU 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	0	1	0	2	1	1	0	0	0	0
Science	3	5	5	7	11	2	1	1	3	4
Mathematics	6	6	7	6	7	1	2	6	12	13
Other	0	0	0	0	0	0	0	0	0	0
<b>Total</b>	<b>9</b>	<b>12</b>	<b>12</b>	<b>15</b>	<b>19</b>	<b>4</b>	<b>3</b>	<b>7</b>	<b>15</b>	<b>17</b>

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	0	0
Science	0	0	0	0	0	0	0	0	0	0
Mathematics	0	0	0	0	0	0	0	0	0	0
<b>Total</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>

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	0	1	0	0	0	0	0	2	1	35
Mathematics Teachers	0	0	0	0	0	0	0	2	13	22
Science Teachers	0	0	0	0	0	0	0	1	0	1
Mathematics/Science Teachers	0	0	0	0	0	0	0	0	0	20
Administrators	0	0	0	1	0	0	0	1	0	1
Other/Unknown	0	0	0	0	0	0	0	0	0	2
<b>Total</b>	<b>0</b>	<b>1</b>	<b>0</b>	<b>1</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>6</b>	<b>14</b>	<b>81</b>

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/TEsES 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	4	1	1	2%	13	0	0	3%	2	0	0	1%	9	0	0	2%	9	1	0	3%
Anglo/White	240	20	13	80%	273	17	8	78%	166	19	5	80%	272	23	11	81%	254	26	4	78%
Hispanic	53	4	2	17%	65	1	1	18%	39	1	4	19%	60	2	3	17%	62	7	1	19%
Native American	1	0	0	---	2	0	0	---	1	0	0	---	0	0	0	---	0	0	0	0%
Asian	1	2	0	1%	0	1	1	---	1	0	0	---	1	0	0	---	2	0	0	1%
Other/Not Reported	0	0	0	---	0	0	0	---	0	0	0	---	0	0	0	---	0	0	0	0%
<b>Total</b>	<b>299</b>	<b>27</b>	<b>16</b>	<b>342</b>	<b>353</b>	<b>19</b>	<b>10</b>	<b>382</b>	<b>209</b>	<b>20</b>	<b>9</b>	<b>238</b>	<b>342</b>	<b>25</b>	<b>14</b>	<b>381</b>	<b>327</b>	<b>34</b>	<b>5</b>	<b>366</b>

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	1	0	0	1%	2	0	1	2%	1	0	0	---	3	0	0	2%	5	0	0	4%
Native American	0	0	0	---	0	0	0	---	0	0	0	---	1	0	0	---	0	0	0	0%
Asian	1	0	0	1%	1	0	0	---	1	0	0	---	0	0	0	---	0	0	0	0%
Anglo/White	79	3	4	90%	82	8	3	81%	103	5	3	80%	114	3	1	83%	92	6	5	85%
Hispanic	8	0	0	8%	17	1	1	17%	25	1	0	19%	20	0	1	15%	13	0	0	11%
Other/Not Reported	0	0	0	---	0	0	0	---	0	0	0	---	0	0	0	---	0	0	0	0%
<b>Total</b>	<b>89</b>	<b>3</b>	<b>4</b>	<b>96</b>	<b>102</b>	<b>8</b>	<b>5</b>	<b>115</b>	<b>130</b>	<b>6</b>	<b>3</b>	<b>139</b>	<b>138</b>	<b>3</b>	<b>2</b>	<b>143</b>	<b>110</b>	<b>6</b>	<b>5</b>	<b>121</b>

Source: NSF Data Reports

<b>Major</b>	<b>2000</b>	<b>2001</b>	<b>2002</b>	<b>2003</b>	<b>2004</b>
Elementary Education	23	20	15	10	7
Mathematics	0	1	0	1	1
Science	0	0	0	3	4
Mathematics/Science	0	0	0	0	0
<b>Total</b>	<b>23</b>	<b>21</b>	<b>15</b>	<b>14</b>	<b>12</b>

Source: Campus Activities Reports

<b>Area</b>	<b>(9/99-8/00)</b>	<b>(9/00-8/01)</b>	<b>(9/01-8/02)</b>	<b>(9/02-8/03)</b>	<b>(9/03-8/04)</b>
Early Childhood Education	63	40	28	25	-
Elementary Comprehensive	129	126	133	178	
Professional Development (Elementary)	130	138	146	175	-
Generalist EC-4	-	-	-	37	132
Generalist 4-8	-	-	-		7
Pedagogy and Professional Responsibilities EC-4	-	-	-	2	120
Pedagogy and Professional Responsibilities 4-8	-	-	-	-	12
Pedagogy and Professional Responsibilities 8-12	-	-	-	4	100
Pedagogy and Professional Responsibilities EC-12	-	-	-	-	23
Mathematics (Secondary)	10	14	13	7	-
Mathematics 4-8	-	-	-	-	6
Mathematics 8-12	-	-	-	-	7
Science 4-8	-	-	-	-	3
Biology (Secondary)	2	11	6	11	-
Chemistry (Secondary)	1	2	1	5	-
Composite Science (Secondary)	-	1	-	1	
Life/Earth Science (Secondary)	10	4	3	5	-
Life Science 8-12	-	-	-	-	5
Physical Science (Secondary)	2	2	-	9	-
Physics (Secondary)	1	-	1	1	-

Source: SBEC Reports

### **III. CUMULATIVE IMPACT OF TXCETP ON YOUR 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 facilitated and engendered a great deal of course reform on the ASU campus. Despite an enrollment drop of more than 4% since the beginning of the collaborative, we have increased the enrollment in reformed courses at ASU by more than 40%. And that statistic doesn't even begin to tell the story.

**Mathematics Teacher Preparation:** All students preparing to be certified in either EC-4 or the 4-8 programs including mathematics must pass our Math 1341 and 1342 courses, courses which have been completely redesigned from the ground up as inquiry-based, hands-on, laboratory courses. Thus all students preparing to teach mathematics through the 8<sup>th</sup> grade have at least these two semesters of discovery-based, manipulative-rich mathematics classes, where not only do they learn how to use these methods, but see them modeled in the classroom. In addition, the 4-8 certification programs include several other courses – Math 3311 *Number Theory*, Math 2302/3310 *Problem Solving*, Math 3323 *Exploring Middle School Mathematics*, and the newly redesigned Math 4321 *Geometry* -- which are TxCETP reformed. Indeed, our entire 4-8 mathematics certification curriculum was designed, in collaboration with and significant support from TxCETP, to be an inquiry-based, TxCETP reformed curriculum. The secondary certification program has also been significantly influenced by TxCETP, not least through the continued development and refinement of the capstone Math 4322 *Survey of Mathematics* course.

**Science Teacher Preparation:** All students preparing to be certified in either EC-4 or the 4-8 programs must pass our Physical Science 3311 and 3312 *Physical Science Concepts I and II* courses, which are also reformed in no small part through the collaborative. Students preparing to be certified in secondary science must take Biology 1480 *Principles of Biology*, again a course significantly affected by TxCETP reforms.

**Other Students:** Our Mathematics 1332 *Introduction to Contemporary Mathematics*, a core mathematics course designed for liberal arts and other majors, is another course reformed by TxCETP. We have also been able to use this course for recruitment of future teachers through collaboration with the HOSTS (Helping One Student To Succeed) tutoring program, for which Math 1332 is used as a recruiting ground. With a significant number of faculty “TxCETP-touched,” there are many other classes, both in mathematics and in the sciences, which, although not yet “reformed,” nevertheless contain elements of inquiry, student-centered activity and assessment, and hands-on learning.

**TEKS and State Standards:** The 4-8 mathematics curriculum, together with the new courses developed to support it, was designed specifically with the TEKS and the state standards in mind. The capstone course for secondary mathematics certification is also focused on reviewing the state standards and making sure all students can competently teach to all the TEKS. Indeed, the ongoing review by the Director of Secondary Certification in the Mathematics Department has led to a number of curriculum changes and syllabus modifications.

**TxCETP-Sponsored Projects for Course Reform:** More than 20 faculty members have attended off-campus TxCETP-sponsored projects (TxCETP Forum, Inquiry Institute for Professors, etc.). More than 30 have been involved in TxCETP-sponsored projects and activities of one or more types. A similar number of faculty have attended workshops or conferences which, although not sponsored by TxCETP, were supported by TxCETP funds.

Course #	Course Title	Enrollment				
		2000	2001	2002	2003	2004
MATH 1341	Mathematics for Elementary Teachers I	186	194	129	122	121
MATH 1342	Mathematics for Elementary Teachers II	138	138	167	129	92
MATH 2302	Introduction to Problem Solving	-	-	-	17	29
MATH 3323	Exploring Middle School Mathematics	-	-	-	4	7
MATH 4322	A Survey of Mathematics with Applications	15	21	8	10	19
MATH 3311	Elementary Number Theory	63	47	44	13	11
PS 3311	Physical Science Concepts I	109	134	130	143	125
PS 3312	Physical Science Concepts II	85	68	125	119	124
MATH 1332	Introduction to Contemporary Math.	-	71	64	85	50
BIO1480	Principles of Biology	-	184	262	250	257
MATH 130B	Fundamentals of Mathematics II	-	-	39	-	-
<b>Total</b>		<b>596</b>	<b>958</b>	<b>968</b>	<b>892</b>	<b>835</b>

Source: NSF Data Reports

Vision Indicators	Percent of All Item Responses that were Always/Usually					
	Fall 2003		Spring 2004		Fall 2004	
	Student (n=196)	Instructor (n=12)	Student (n=191)	Instructor (n=11)	Student (n=210)	Instructor (n=11)
Course Design	78%	79%	79%	82%	72%	91%
Prior Knowledge	83%	80%	83%	75%	77%	71%
Instructional Strategies	82%	88%	84%	89%	77%	84%
Assessments	82%	75%	89%	75%	81%	82%
Problem Solving	81%	96%	81%	86%	78%	77%
Multiple Representations	87%	86%	88%	85%	83%	79%
Learning Environment	82%	86%	83%	67%	75%	70%
Books, Materials & Technology	83%	83%	82%	73%	72%	73%

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

## **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**

Angelo State has made great strides in recruitment efforts, in parallel to, if not exactly the result of, TxCETP. Facing declining populations in our traditional recruitment areas, we have made strong efforts to recruit more and better students for mathematics and the sciences, including science and mathematics teaching. With mathematics and science faculty taking an active role in recruiting, including personal letters, phone calls, and campus tours for interested students, we seem to be at least holding our own. For example, Fall 2004 showed more mathematics majors than we have had for six years.

An important aspect of our recruitment efforts has been in the area of scholarships. We have revised the Carr Academic Scholarship program to aid in recruiting. The Special Academic Scholarship program has brought over 100 new students to Angelo State, some with awards as high as \$9000 per year. TxCETP and Noyce Scholarships have also been a boon to mathematics and science teaching; as indicated in table 9, each of the past two years we have had 14 such scholars supported through the collaborative.

A second important part of recruitment is getting students already at the university interested in careers in mathematics and science education. Toward that end TxCETP has sponsored future teachers' clubs in both mathematics and in the sciences for the past three years. There are typically several students at each meeting who are not yet enrolled in a certification program, and at least anecdotally some students have reported that the support and community of things like the preservice teachers' clubs have contributed to their desire to join the teaching profession. Another way to get students "hooked" is through tutoring and volunteer programs like HOSTS ("Helping One Student To Succeed") or VIPS ("Volunteers In Public Schools"). Programs such as these are encouraged and supported in general freshman classes (including reformed classes such as Math 1332), where we have induced several students to enter a certification program by exposing them to the joy and satisfaction of helping students learn.

It is worth pointing out that Angelo State is somewhat unique in that there are no community colleges in the area offering academic programs; this limits our ability to collaborate with our colleagues in the two-year schools.

### **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 Scholars), 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

With the exception of goal 1, efforts in support of goal 3 have had the most impact of any on the Angelo State campus. For preservice teachers TxCETP has helped allow us: to award TxCETP, Noyce, and Level II scholarships (see table 9); to have preservice teacher clubs; to award travel funds for conferences and informal science partners such as the Fort Worth Museum; to offer TExES workshops to prepare students for their certification exams; to provide mentoring and tutoring opportunities; and to allow opportunities for networking and connections with inservice teachers and administrators. For novice teachers we have been able to offer through TxCETP: a rudimentary mentoring program, travel support, quality professional development in hands-on settings, and technology workshops to help with the digital divide. These have had a great and measurable impact on both the preservice and the novice teachers, as indicated by attendance at workshops, at preservice teacher clubs meetings, at conferences, and by exam scores.

In a somewhat more subtle way, TxCETP has enabled our faculty to be better teachers: more student-centered, using a wider variety of teaching methods, facilitating differing learning styles, giving students more exposure to inquiry-based learning experiences, and better equipped to use a variety of tools – physical, virtual, and pedagogical – to help our students learn more, and learn to teach better.

**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	1	0	0	1	2	0	0	2	2	0	0	2
Mathematics	10	0	0	10	8	1	1	10	6	1	1	8
Science	0	0	0	0	0	0	1	1	0	0	0	0
Mathematics/Science	0	0	0	0	1	0	0	1	4	0	0	4
<b>Total</b>	<b>11</b>	<b>0</b>	<b>0</b>	<b>11</b>	<b>11</b>	<b>1</b>	<b>2</b>	<b>14</b>	<b>12</b>	<b>1</b>	<b>1</b>	<b>14</b>

Source: TxCETP Scholarship Database

### 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**

Angelo State has had a strong working relationship with the Texas Rural Systemic Initiative (TRSI). For three years we had TRSI regional specialists housed on our campus, making both formal and informal collaboration easy. Among other projects: we have had joint presentations with TRSI math specialists; sponsored TRSI workshops on campus, providing equipment, meeting space, and auxiliary support; had the TRSI specialists speak to our preservice teachers' clubs; and used TRSI connections for networking. The *Concho Valley Math & Science Conference*, sponsored by ASU's College of Sciences and organized in the Department of Mathematics, was well-supported by TRSI representatives, both locally and from Canyon. Even events such as the regional technology conferences sponsored by the School of Education included presentations by TxCETP faculty in addition to TRSI presenters. And our relationship with TRSI did not end when the project did: upon termination of the TRSI project Angelo State was able to obtain a large quantity of manipulatives, lab equipment, and other materials from the rural systemic initiative for use in our SEDL lending library.

Our relationship with the TEA is also growing. In conjunction with the School of Education and the five other TSUS universities, Angelo State is a part of a Mathematics – English Language Learner (MELL) grant funded by TEA through the System. This project necessarily involves consultation and integration of processes and deliverables from ASU with various offices of the TEA. We see collaboration with the TEA only growing as these connections mature.

## **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**

Much of the course reform undertaken at Angelo State has already been institutionalized. For example, the middle school mathematics curriculum was designed, implemented, and is being taught from a reformed perspective. To a somewhat smaller extent, the secondary mathematics certification curriculum has institutionalized reform, in the addition of classes and the revision of syllabi. In the sciences, revised curriculum and standard syllabi have established the reforms in the advanced physical sciences and principles of biology courses. New faculty hires in the College of Sciences know the expectations for these classes, and indeed the growing expectation that more classes should be affected, if not entirely "reformed."

Of course, the real mark of institutionalization is in rewards and budgets, and in this area it is clear that reform has taken root at Angelo State. Several TxCETP faculty have received promotion and/or tenure during the course of the grant, so it is clear that course reform activities are valued by the university. Indeed, ASU's campus leader has recently been promoted to head of his department. Budgets and faculty positions, too, have been affected, with vacancy announcements stressing math ed or science ed experience, and search committees seeking candidates with experience in and motivation

toward inquiry. These developments show without a doubt that the course reforms aided and abetted by TxCETP have become institutionalized, and will only expand with time.

### **PLANS FOR SUSTAINING RECRUITMENT OF STUDENTS INTO STEM TEACHING**

At Angelo State recruitment is likely to remain a significant priority for the foreseeable future. A reorganization of the Office of Admissions, the creation of a new Dean of Enrollment Management, and increased attention by administrators from the Office of the President on down all show that recruitment is an ongoing priority. Recruitment tools such as the Special Academic Scholarships and the revised Carr Academic Scholarship are institutionalized, as are the increased involvement of academic departments in the recruiting effort. Although general recruiting efforts, all of these developments are also of benefit to recruiting students into mathematics and science teaching.

Other, more specific efforts targeting recruitment of students into math and science teaching careers are also well established. Partnerships with the HOSTS and VIPS programs, for example will continue to expose many students not in a certification program to the joy and satisfaction of teaching. Our preservice teachers' clubs are now registered campus organizations, and so will continue to be an avenue for students to find support and information. Science days, "magic shows," planetarium tours, and other events are designed to encourage students to consider mathematics and science teaching as a career. In short, recruitment of students, and in particular recruitment of students into math and science teaching, has become institutionalized at Angelo State.

### **PLANS FOR SUSTAINING PRESERVICE AND NOVICE TEACHER SUPPORT**

Perhaps the most important way in which we can sustain support for preservice and novice teachers is the easiest, via connections: connections with San Angelo ISD, connections with school principals, connections with teachers in the field, and connections with our own students. These connections have, in many ways, come into existence due to TxCETP, have been nurtured through TxCETP, but now are mature and robust enough to stand on their own. Connections with our students, for example, are strengthened through the interactive and reformed courses we now teach, through the preservice teachers' clubs which are now registered student organizations, and through the conference and workshop attendance for which we are now getting some university support. Connections with teachers in the field have been and will continue to be enhanced through joint workshops, conference attendance, ongoing followup, and quality professional development provided by our faculty. Connections with SAISD administrators have become so firmly established that now they are phoning our academic departments inquiring about seminars or training opportunities.

Other, more concrete developments are also important. New funding opportunities, such as the TSUS MELL initiative funded through the TEA, will allow our faculty to continue to develop and supply high-quality professional development opportunities for novice and preservice teachers alike. The commitment by ASU's administration to support increased student travel will allow our preservice teachers to continue to sustain conference attendance. Established now as registered campus organizations, our preservice teachers' clubs will remain as resources of information and connections for our future teachers. The ability to continue to support both preservice and novice teachers seems to be well established at Angelo State.

## **PLANS FOR SUSTAINING SYSTEMIC REFORM CONNECTIONS**

Although the TRSI has ended, we maintain connections with some of the staff and specialists who were involved. We also have an ongoing relationship with the Southwest Educational Development Laboratory (SEDL), housing a SEDL materials lending library. Our relationship with the TEA is growing, with a new TEA-sponsored Mathematics for English Language Learners (MELL) project in hand, with extensions both likely and sought.

## **PLANS FOR SUSTAINING OTHER TxCETP-RELATED ACCOMPLISHMENTS**

Three TxCETP-related accomplishments, although mentioned peripherally above, are both worth noting and planning to sustain. The first is an improved and improving, ongoing dialogue with the School of Education. Between seeking new funding opportunities, establishing new certification programs, discussing new minors focusing on mathematics or science education, and introducing new pedagogy into our classrooms, we have found some common grounds for discussion with the School of Education. TxCETP has both helped bring this relationship, or lack thereof, into the forefront, and also provided the means and opportunity to help mend it. Although we have a long way to go, one of the signal accomplishments of the collaborative on the ASU campus has been improving the relations between the School of Education and the academic departments in the College of Sciences. This improved relationship will be sustained, not least by felicitous retirements and careful hiring of new faculty. It will also be sustained simply because it must. With 4-8 certification programs necessarily housed in the School of Education, but also necessarily including significant input from the academic departments, cooperation and dialogue will be maintained. As an example of this new cooperation, the School of Education and the Mathematics Department are dually responsible for ASU's portion of the TSUS-MELL project. I am convinced that the dialogue and collaboration between the School of Education and the College of Sciences will increase and even grow stronger.

A second accomplishment attributable to TxCETP is an improving relationship with San Angelo ISD. TxCETP's support of workshops, of quality professional development, of travel support for novice teachers, of mentoring programs, of preservice teachers' clubs – all of these have helped to break down some of the barriers which have long existed between SAISD and ASU. Again, I am convinced these barriers will continue to fall simply because they must. Also again, key retirements or promotions have contributed, and will continue to contribute, to the improving atmosphere. And as good relationships are built and trust established, more cooperation and sharing, in both directions, is likely to follow.

Finally, an important accomplishment attributable to TxCETP is a changed attitude among faculty on campus about reforming their classes. The impact of TxCETP is far greater than counting the students enrolled in reformed classes, or adding up student surveys received, or totaling beneficiaries in the faculty ranks. For while not all faculty (yet!) buy in to the TxCETP vision, it is a vision with which most of them now have at least some sympathy. It is a vision that infuses itself into many more classes than those changed enough to count as reformed. It is a vision that affects many more students than those who fill out a student survey. And so it is a vision that impacts our campus, and hence our future, in ways which may be difficult to count, but are not difficult to observe. This vision is also here to stay: it has become institutionalized in the ways we prepare our budgets (annual set-asides in departmental maintenance and operations for manipulatives and expendables in our laboratory math classes, for example), in the way we hire new faculty, in the way tenure and promotion committees evaluate academic work and service, and, most importantly, in the way our faculty see their role in and out of the classroom.