



# Texas Woman's University

---

CAMPUS REPORT

May 2005

## I. INTRODUCTION

This document presents a progress report of Texas Woman's University (TWU), 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 TWU - 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 Woman's University is located in Denton, Texas, and offers outstanding education in liberal arts, sciences and professional studies. TWU graduates the largest number of health care providers annually in the state of Texas, and graduates the most nurses with doctoral degrees in the nation. TWU's graduate programs in occupational and physical therapy have been ranked among the nation's best, and its occupational therapy Ph.D. program is the only one of its kind in the nation at a public university. Originally a women's institution, men have been admitted to its programs for almost 30 years.

The mission of TWU includes encouraging students to develop intellectual, humanitarian and leadership skills; providing minority students, primarily women, an academic and social environment

for learning, involvement and leadership development; providing educational programs to meet the needs of adult students, especially women; serving as a resource and depository for information about women and their contributions to history; and providing service to the wider community through health and educational clinics, continuing education programs, and basic and applied research in education, food science, health sciences, and nutrition.

Based on the most recent IPEDS data from school year 2003-04, the overall enrollment has increased 4% from Fall 1998 (N=9,352) to Fall 2003 (N=9,709). 55% of the Fall 2003 student body were undergraduates. The ethnic make up was approximately 58% White, 22% Black, 11% Hispanic, and the remaining Asian, Native American and non-resident alien. The university awarded 944 Baccalaureate degrees between July 1, 2003 and June 30, 2004, 472 of these in Health Professions and Related Clinical Sciences, 96 in Multi/Interdisciplinary Studies, 66 in Business Management, Marketing, & Related Sciences, 43 in Visual and Performing Arts, and 43 in Parks, Recreation, Leisure and Fitness Studies.

North Central Texas College, Dallas County Community Colleges, Collin County Community College, Richland College, and Tarrant County Community College are two-year feeder colleges. TWU is in the process of establishing articulation agreements with some of the community colleges.

## 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 TWU since the year 2000:

<b>Table 1a: Campus Participation by Calendar Year</b>										
	<b>Implementation</b>					<b>Beneficiaries</b>				
	<b>2000</b>	<b>2001</b>	<b>2002</b>	<b>2003</b>	<b>2004</b>	<b>2000</b>	<b>2001</b>	<b>2002</b>	<b>2003</b>	<b>2004</b>
College of Education	0	1	0	1	1	0	0	0	0	0
Science	3	3	3	2	0	0	0	0	2	2
Mathematics	2	2	3	1	3	0	0	0	3	1
Other	0	0	0	0	0	0	0	0	0	0
<b>Total</b>	<b>5</b>	<b>6</b>	<b>6</b>	<b>4</b>	<b>4</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>5</b>	<b>3</b>

Source: NSF Data Reports

<b>Table 1b: Community College Participation</b>										
	<b>Implementation</b>					<b>Beneficiaries</b>				
	<b>2000</b>	<b>2001</b>	<b>2002</b>	<b>2003</b>	<b>2004</b>	<b>2000</b>	<b>2001</b>	<b>2002</b>	<b>2003</b>	<b>2004</b>
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
Other	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	0	0	0	0	0	0	26	120	120
Mathematics Teachers	0	0	0	0	0	0	0	25	44	44
Science Teachers	0	0	0	0	0	0	0	0	10	10
Administrators	0	0	1	2	2	0	0	0	0	0
Other/Unknown	0	0	1	0	0	0	0	0	0	0
<b>Total</b>	<b>0</b>	<b>0</b>	<b>2</b>	<b>2</b>	<b>2</b>	<b>0</b>	<b>0</b>	<b>51</b>	<b>174</b>	<b>174</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	29	0	0	7%	43	4	0	12%	29	2	0	8%	48	6	1	12%	54	6	1	11%
Anglo/White	212	0	0	54%	253	4	4	65%	253	10	5	68%	286	15	5	67%	344	25	3	70%
Hispanic	69	4	0	19%	72	1	1	18%	71	2	2	19%	76	1	1	17%	76	2	1	15%
Native American	3	0	0	1%	4	0	1	1%	3	0	1	1%	5	1	0	1%	7	0	0	1%
Native Hawaiian/Pacific	2	0	0	.5%	0	0	0	---	0	0	0	---	0	0	0	---	0	0	0	0%
Asian	0	0	0	---	10	2	0	3%	12	1	0	3%	9	0	0	2%	4	0	0	1%
Other/Not Reported	51	0	20	18%	2	0	1	1%	0	0	1	---	3	0	0	1%	8	0	0	2%
<b>Total</b>	<b>366</b>	<b>4</b>	<b>20</b>	<b>390</b>	<b>384</b>	<b>11</b>	<b>7</b>	<b>402</b>	<b>368</b>	<b>15</b>	<b>9</b>	<b>392</b>	<b>427</b>	<b>23</b>	<b>7</b>	<b>457</b>	<b>493</b>	<b>33</b>	<b>5</b>	<b>531</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	18	0	0	10%	7	0	1	5%	3	0	0	2%	11	0	0	---	6	4	0	8%
Native American	5	0	0	3%	1	0	0	.5%	1	0	0	1%	0	0	0	14%	1	0	0	1%
Native Hawaiian/Pacific	0	0	0	---	1	1	0	1%	1	0	0	1%	0	0	0	---	0	0	0	0%
Asian	0	0	0	---	0	0	0	---	0	0	0	---	3	0	0	4%	2	1	0	2%
Anglo/White	118	0	0	66%	107	1	0	72%	83	0	0	69%	48	4	1	65%	79	7	1	68%
Hispanic	27	0	0	15%	30	0	1	21%	23	0	0	19%	14	0	0	17%	26	0	0	20%
Other/Not Reported	0	2	8	6%	0	1	0	.5%	0	7	3	8%	0	0	0	---	1	0	0	1%
<b>Total</b>	<b>168</b>	<b>2</b>	<b>8</b>	<b>178</b>	<b>146</b>	<b>3</b>	<b>2</b>	<b>151</b>	<b>111</b>	<b>7</b>	<b>3</b>	<b>121</b>	<b>76</b>	<b>4</b>	<b>1</b>	<b>81</b>	<b>115</b>	<b>12</b>	<b>1</b>	<b>128</b>

Source: NSF Data Reports

**Table 5: Post-Baccalaureate Students Certified by Major and Calendar Year**

Major	2000	2001	2002	2003	2004
Elementary Education	5	5	4	12	75
Middle School Generalist					12
Mathematics	4	4	5	7	10
Science	5	4	9	10	4
Mathematics/Science	0	0	0	0	0
<b>Total</b>	<b>14</b>	<b>13</b>	<b>18</b>	<b>29</b>	<b>101</b>

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	31	33	29	17	-
Elementary Comprehensive	132	125	208	99	-
Professional Development (Elementary)	217	213	240	151	-
Generalist EC-4	-	-	-	54	158
Generalist 4-8	-	-	-	3	26
Pedagogy and Professional Responsibilities EC-4	-	-	-	50	148
Pedagogy and Professional Responsibilities 4-8	-	-	-	16	41
Pedagogy and Professional Responsibilities 8-12	-	-	-	11	50
Pedagogy and Professional Responsibilities EC-12	-	-	-	9	26
Mathematics (Secondary)	3	3	7	6	-
Mathematics 4-8	-	-	-	2	11
Mathematics 8-12	-	-	-	12	21
Science 8-12	-	-	-	2	5
Biology (Secondary)	-	6	8	2	-
Chemistry (Secondary)	-	-	1	-	-
Composite Science (Secondary)	3	3	7	2	-
Life/Earth Science (Secondary)	-	1	-	-	-
Life Science 8-12	-	-	-	-	2
Physical Science (Secondary)	-	-	-	1	-
Physical Science 8-12	-	-	-	-	2
Physics (Secondary)	-	-	-	-	-
Psychology (Secondary)	-	1	-	-	-
Sociology (Secondary)	-	-	-	1	-

Source: SBEC Reports

### 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 the 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)

## **CUMULATIVE IMPACT OF TxCETP ON COURSE REFORM**

TWU has developed two mathematics courses (MATH 1523 and MATH 1533) and revised two mathematics courses (MATH 1603 and MATH 1613) to reflect the EC-4 and 4-8 certifications respectively. These courses were the focus of Campus Projects during the 2002-03 academic year. Years 4 and 5 were spent reflecting on the 4 courses and developing test items comparable to the state teacher examination for students in the four courses. These courses as well as the other mathematics and science course have been taught using an inquiry approach

Three other courses (MATH 4103, MATH 5103, and SCI 3003) were also reviewed during Years 4 and 5. MATH 4103 and MATH 5103 (Elementary Problem Solving) are geared toward the K-8 mathematics curriculum. MATH 4103 is required of all 4-8 majors. MATH 5103 attracts students pursuing 4-8 certification in mathematics, M.S. Mathematics Teaching, and Master of Arts in Teaching (EC-4, 4-8). MATH 4103 and 5103 were revised to reflect problem solving activities in the TEXTEAMS curricula -- Pre-K and Kindergarten; Grades 1 and 2; Grades 3-5; and Rethinking Middle School Mathematics: A Problem Solving Approach.

SCI 3003 is a required course for K-4 and some 4-8 majors. We initially started with the idea of cross-linking the Science and Mathematics courses for the early childhood certification, but EC-4 students needed a Science upper-level prefix. The identification of the course content and strategies was a TxCETP project during Summer 2002 and Fall 2002. The course was previously taught by a science faculty, however during Spring 2003 and Fall 2003, a mathematics and science faculty member team taught the course using a SCI prefix. The University administration supported this arrangement. A meeting of the faculty involved, the Dean of the College of Arts and Science, and the Chairs of the Departments of Chemistry & Physics and Mathematics & Computer Science was held during June 2003 to discuss the logistics of offering the course. Discussion continues as the course content is being reviewed to make it more in line with the K-8 curricula for mathematics, science, and technology, and the teacher preparation objectives.

TxCETP funds have enabled faculty to travel to state and national mathematics/science education conferences to disseminate course development and modules. In addition, funds have also supported the professional development of faculty to attend TEXTEAMS training. TEXTEAMS materials are designed to help classroom teachers understand and implement the Texas Essential Knowledge and Skills (TEKS.).

**Table 7: Reformed Courses and Student Enrollment by Calendar Year**

Course #	Course Title	Enrollment				
		2000	2001	2002	2003	2004
BIOL 1111	Principles of Biology I Laboratory	23	-	-	-	-
BIOL 1113	Principles of Biology I	23	-	-	-	-
BIOL 1121	Principles of Biology II Laboratory	25	-	-	-	-
BIOL 1123	Principles of Biology II	25	-	-	-	-
MATH 1023	Introduction to Mathematics	-	78	-	-	-
MATH 1523	Mathematics Concepts I	-	39	58	72	162
MATH 1533	Mathematics Concepts II	-	-	124	133	163
MATH 1603	Fundamentals of Elementary Math I	-	18	17	13	46
MATH 1613	Fundamentals of Elementary Mathematics II	-	25	14	12	41
MATH 4003*	Mathematical Concepts in the Educational Setting	18	30	17	18	32
MATH 4103	Elementary Problem Solving	-	-	26	23	26
SCI1113	General Physical Science	25	56	117	124	63
SCI1123	General Life Science	23	-	-	-	-
SCI3003*	Science, Mathematics, & Technology	-	59	117	130	114
<b>Total</b>		<b>162</b>	<b>305</b>	<b>490</b>	<b>525</b>	<b>647</b>

\*Capstone course

Source: NSF Data Reports

**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=118)	Instructor (n=8)	Student (n=173)	Instructor (n=8)	Student (n=124)	Instructor (n=8)
Course Design	73%	100%	74%	94%	77%	100%
Prior Knowledge	77%	95%	75%	80%	82%	78%
Instructional Strategies	80%	94%	74%	78%	82%	81%
Assessments	78%	100%	78%	75%	86%	88%
Problem Solving	74%	100%	72%	63%	84%	94%
Multiple Representations	78%	100%	82%	79%	86%	100%
Learning Environment	73%	100%	73%	75%	84%	100%
Books, Materials & Technology	65%	75%	64%	75%	77%	100%

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 the 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**

TWU offers Access to CarEers in the Sciences (ACES) that is a residential camp for 6<sup>th</sup> to 11<sup>th</sup> grade female students. During 2003 and 2004 TxCETP funds were used to offer scholarships to seven students who demonstrated an interest in pursuing careers in mathematics/science teaching and needed financial assistance to attend the camp. Funds have also been allocated for 2005 to support another seven students.

The Office of Admissions developed "New Recruiting Initiatives". Science and mathematics faculty and students have been involved in the University's recruitment exercises. The university also sponsored 3<sup>rd</sup> Thursday lunches where faculty members from the various departments have lunch with lower-level students or transfer students. Departments have used this as a venue to encourage students who might not have otherwise thought of pursuing mathematics or science education as a career.

During its initial stages, TxCETP recruitment exercises were supported by other grants. TWU had a \$500k PT3 grant, Preparing Tomorrow Teachers to Use Technology. The goal of the grant was to increase the quantity of technology-proficient preservice teachers who will use technology to support teaching and learning and to create and maintain dialogue between professors from diverse disciplines. Another grant that supported TxCETP was a NIH grant called Bridges, which was funded to bridge the gap between Community College and 4 year institutions.

The University does not have a student organization specifically geared toward students pursuing science or mathematics education. However these students integrate with the student organizations that target science, mathematics, or education individually.

TxCETP has sponsored meetings at the Fort Worth Museum where faculty were exposed to inquiry based learning activities for the mathematics and science classrooms. The Museum, which is about an hour's drive from TWU, offers Saturday Educator Programs throughout the year for pre-service and in-service educators. TWU students, some of whom are not mathematics/science majors, attend these sessions, develop a lesson based on their experience, and share this lesson in a course for pre-service educators.

### **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

Preservice and novice teachers have enhanced their mathematics/science background by attending professional conferences. After the conference, preservice educators shared ideas from the conference with other pre-service educators.

Preservice educators have also been encouraged to attend Saturday Educator Enrichment programs sponsored by the Fort Worth Museum of Science and Technology. On their return to campus, they presented problem solving/inquiry activities from the session to their peers.

To meet the needs of the new state standards, two mathematics courses were developed for K-4 preservice educators and two were revised for 4-8 mathematics preservice educators. .

The Science, Mathematics, and Technology course for K-4 and 4-8 pre-service educators has been revised and will be team taught by faculty members from the Department of Mathematics & Computer Science and the Department of Chemistry & Physics.

Preservice and novice teachers have been encouraged to pursue mathematics teaching by being offered TxCETP and departmental scholarships that specifically target prospective mathematics/science teachers. The number of scholarship recipients grew over the years.

Student teachers and novice teachers are provided with pertinent activities they can use in their classrooms, and they can borrow teaching supplies for use during their lessons. Math and science faculty are resources for teachers, and assist school districts in securing grants related to teacher enhancement.

Mathematics faculty members, in conjunction with a local school district, conducted workshops for K-12 in-service educators. In addition, during 2003-04, TxCETP sponsored District-wide teacher enhancement in mathematics and science.

**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	0	0	0	0	1	0	0	1	0	0	0	0
Mathematics	1	0	0	1	4	0	0	4	7	2	1	10
Science	0	0	0	0	0	0	0	0	0	0	0	0
Mathematics/Science	0	0	0	0	0	0	0	0	1	0	0	1
<b>Total</b>	<b>1</b>	<b>0</b>	<b>0</b>	<b>1</b>	<b>5</b>	<b>0</b>	<b>0</b>	<b>5</b>	<b>8</b>	<b>2</b>	<b>1</b>	<b>11</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**

TWU faculty have been involved with mathematics and science curriculum development in Texas at the state level, e.g. TEXTEAMS Institutes and SBEC curricular issues.

Science/mathematics faculty members also hold posts in state and national science/mathematics education professional organizations.

As a result of changes in the State Certification, the College of Arts & Science and the College of Professional Education have worked together in developing and approving degree plans for pre-service educators. Faculty in the College of Arts & Science are members of the Teacher Education Council and also teach the science/mathematics methods courses and supervise student teachers.

## **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**

Faculty will continue to revisit programs and courses in order to stay current with the trends in science and mathematics education. Reformed course have been established in the Departments. They are included on the Rotating Schedule that determines which semester courses will be offered. Reformed courses are also requirements on the degree plans for students pursuing degrees leading to teacher education.

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

Mathematics and science students including preservice teachers are eligible apply for various scholarships offered by the Departments. One of the scholarships in the Department of Mathematics and Computer Science is specifically geared toward mathematics preservice teachers.

TWU will continue to offer ACES camps during the summer. The camps provide an opportunity for 6<sup>th</sup> to 11<sup>th</sup> grade female students to be exposed to the campus and its resources.

Departments will continue to work with the Admissions Office in recruitment exercises both on- and off-campus.

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

Mathematics and science faculty will continue to mentor and supervise student teachers and novice teachers who are enrolled in a one-year internship. In addition, preservice and novice teachers can confer with faculty on issues related to mathematics/science education outside of lecture.

Preservice and novice teachers will be provided with pertinent activities that they can use during their practicum, student teaching, or internship.

Mathematics and science faculty will pursue teacher enhancement grants related to preservice and novice teachers.

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

TWU President has been encouraging Departments and faculty to establish partnerships with K-12 schools/districts. Mathematics and science faculty will continue to pursue K-16 Partnerships.

Faculty members will continue to participate on state mathematics and science curriculum development committees. Course material developed as a result of the project will serve as tools for faculty members after TxCETP's award has expired.

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

Faculty will seek sponsorship to participate in professional development and conferences related to science/mathematics education.