

## SWT GEOGRAPHY: FROM THE TEXAS HILL COUNTRY TO INTERNATIONAL RECOGNITION

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Over the past three decades, the Department of Geography at Southwest Texas State University (SWT) has become a nationally recognized center for undergraduate and graduate teaching, research, and professional service to the discipline of geography. Geography at SWT has expanded steadily since the establishment of the department in 1965, and the dramatic growth of the department has paralleled Central Texas as one of the most dynamic areas in the United States.

The purpose of this paper is to trace the history of geography at SWT. Following discussion of the institutional context, we examine the history of geography teaching and research at SWT. The history is divided into four periods: the period from the founding of the university in 1899 until the mid-1960s before the formal organization of the Department of Geography and Planning; the early years of an independent Department of Geography and Planning between the mid-1960s and the late 1970s; the years of growth and development between the mid-1970s and the early 1990s; and the last decade, which represents a period of continued rapid growth, maturation, and international recognition at both undergraduate and graduate levels. In the concluding section, we envision SWT Geography as it enters into the first decade of the twenty-first century.

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**The Institutional Context**

How did geography come to flourish at SWT? At first glance, SWT would seem to be an unlikely candidate to boast a nationally respected geography department. The four other departments of geography within the Southwestern Division of the Association of American Geographers (SWAAG) that currently offer Ph.D. degrees—Louisiana State University (Mathewson and Shoemaker 1997), the University of Texas at Austin (Knapp 1998), the University of Oklahoma (Wallach 1999), and Texas A&M University (Hugill and Kimber 2000)—are all flagship research universities with long histories of doctoral education across many disciplines. In contrast, SWT's origins are far more humble.

In 1899, the Texas legislature issued a charter to establish the Southwest Texas State Normal School on eleven acres of land donated to the state by the city of San Marcos, located thirty miles southwest of Austin and fifty miles northeast of San Antonio, on the Balcones Escarpment with the Blackland Prairie to the east and the Edwards Plateau to the west (Figure 1). Across the United States in the late nineteenth and early twentieth centuries, normal schools like SWT “offered rudimentary training in teaching techniques and subject areas to several generations of school teachers” (Brown and Nelson 1999, 26). The school opened in 1903 with 303 students and 17 faculty members, only seven of whom were college graduates. The curriculum included two years of high school work and one year of college courses. In fact, a quarter of a century later, in the late 1920s when future President Lyndon Johnson was a student at the university, only one of the 56 members of the SWT faculty held a doctoral degree (Caro 1982).

SWT's second-tier status as an educational institution was reinforced by its location. Normal schools in the early twentieth century were responsible primarily for serving their local communities. Although the Blackland Prairie to the east of San Marcos was a prosperous cotton-producing region, the service area associated with SWT, including the Texas Hill Country, includes areas that in the early twentieth century were among the poorest, most isolated rural regions of the United States. The region is subject to drought, and unreliable precipitation coupled with poor soils,



**Figure 1.** Old Main in the Early Years.

limestone topography, and rocky terrain makes commercial agriculture difficult, if not impossible.

These conditions supported rural population densities much lower than in eastern and northern Texas. Because of the region's poverty and sparse population, much of the rural farm and ranch country to the west of San Marcos lacked electricity and running water until these basic services were established under the auspices of the Rural Electrification Administration during the New Deal years of the late 1930s (Caro 1982). Although the cities of Austin, San Marcos, and San Antonio, as well as some rural portions of the service area, contained substantial populations of African Americans and Hispanics, the university, like other public institutions in the state and throughout the South, remained segregated until 1963 (Brown and Nelson 1999, 133). Thus SWT's student body in the early twentieth century was completely white and predominantly local and rural.

Gradually, the normal school in San Marcos evolved into a multi-purpose university. The evolution of SWT from a normal school to a research university is reflected in its successive name changes. In the 1920s, SWT became known as the Southwest Texas State Normal College, to indicate that it had been authorized by the Texas Legislature to offer

bachelor's degrees. Later, it became Southwest Texas State Teachers' College and, then, Southwest Texas State College. In 1969, the Texas legislature approved the change from a college to a university and the institution adopted its present name.

The evolution of the university has mirrored the growth and development of its service area and is reflected in fundamental changes in the composition of the student body. No longer isolated, the region is one of the fastest growing areas of the United States. The Austin-San Marcos Metropolitan Statistical Area reported the second fastest rate of growth among all metropolitan areas in the United States during the 1990s. The local region still provides SWT with a majority of its students, although most now come from urban and suburban backgrounds. In the 2000-2001 academic year, about 63% of the more than 22,000 SWT students came from the Austin-San Antonio Corridor, with about 15% from metropolitan Houston, and 9% from the Dallas-Fort Worth area (Office of Institutional Research 2001). Ten percent came from other parts of Texas, with the remaining 3% from other states or outside the US. Thus the student body of SWT today, although it remains oriented to Central Texas, is far more urban, cosmopolitan, and diverse than in the early days of the university. The number of minority students has also increased substantially. In 2000-2001, about 18% of the students were Hispanic, and about 5.5% were African American (Office of Institutional Research 2001).

### **The Early Years of Geography at SWT**

Students enrolling in the normal school's first class in 1903 were required to take geography along with history, civics, education, music, physiology, botany, mathematics, English, and zoology (Brown and Nelson 1999, 28-29). Geography has been part of the university's curriculum ever since. However, the first geography courses at SWT were courses about geographic pedagogy, in which prospective teachers were instructed how to teach geography in the public schools. Systematic courses in physical and regional geography were not added to the curriculum until after World War I.

In the early twentieth century, teaching was considered a respectable

occupation for women who were discouraged, if not forbidden, from entering professions such as law, medicine, and business. It is not surprising that both the faculty and student body of normal schools such as SWT contained relatively higher percentages of women in the early 1900s than was the case with other colleges and universities. For example, ten of SWT's initial 17 faculty members were women, and women comprised a majority of the faculty until 1912 (Brown and Nelson 1999, 93). Women played an often overlooked but important role in the teaching of geography throughout the country in the early twentieth century (Pittser 2000). Often poorly paid and taken for granted by their professional colleagues, women teaching in normal schools played a crucial role in encouraging students to learn geography and laid the groundwork for future development of the discipline at their institutions.

One of these women was Elizabeth Sterry, "the" geography teacher at SWT during the period before and after World War II (Figure 2). In fact, she was the only full-time geography instructor at the university for nearly thirty years, until Richard Boehm and Eugene Dycus were hired in the early 1960s. Like many SWT faculty members across campus in these early years, Sterry's background was in public education. She was born in 1899 and, after teaching in the public schools of Tennessee for several years, received both a Bachelor of Arts degree in 1927 and a Master of Arts degree in 1932 from George Peabody College in Nashville. She joined the SWT faculty upon receipt of her bachelor's degree in 1927, and she remained an active member of the faculty until her death in 1966.

Sterry, who eventually became an associate professor, emphasized field experience and believed in the educational value of field trips. For many years, she led tours and field trips around the United States and in Canada, Mexico, and Europe. Complementing her devotion to teaching, Sterry was extremely active in teaching organizations across the state and nation including the National Council for Geographic Education, the Southwestern Social Science Association, the Texas Association of College Teachers, and the Texas State Teachers' Association. During World War II, Sterry contributed to the Allied war effort by teaching map reading to hundreds



Figure 2. Elizabeth Sterry.

of Air Force students who attended navigational school at the Camp Gary air training center (now the Gary Job Corps Training Center) in San Marcos.

#### **Establishment of the Department of Geography and Planning**

Expansion of the university in the 1950s and early 1960s not only resulted in the hiring of more geography faculty, but it also brought about a reorganization of the academic structure of the institution. Previously, SWT had been organized into divisions, with geography taught as part of the Division of Social Sciences. In the 1960s, however, university officials recognized that the divisional structure was outmoded. The university was reorganized into schools, with each school consisting of freestanding academic departments. Geography became part of the School (now College)

of Liberal Arts, and the Department of Geography and Planning was formally established as a unit within the school in 1965.

Allen Hellman, a native of Michigan who held a Ph.D. in Geography from the University of Michigan, brought a solid record of teaching and planning experience with him to the university when he joined the faculty and became the first chair of the Department of Geography and Planning (Figure 3). Hellman, who was the first SWT Geography faculty member to hold a doctoral degree, established what he termed a three-pronged approach to undergraduate instruction in geography, which included environmental studies, cartography and photogrammetry, and urban and regional planning. Along with geographic education, which was developed during Sterry's tenure, Hellman's three prongs formed the foundation of the department's contributions to the discipline ever since.

During the 1960s and 1970s, demand for trained urban and regional planners increased dramatically. Hellman recognized that geographers' knowledge and technical skills were very valuable to the planning profession, and that geographers had the expertise to evaluate and facilitate programs that benefited communities, cities, and regions. He hired James Harrison (Ph.D., Oklahoma) and Robert Larsen (Ph.D., Wisconsin-Madison), both of whom had extensive experience in the teaching and practice of urban and regional planning. Several others, including Jane Harrison, Pete Neal, Tom Warden, Cherie Edwards, George Roberts, Wade Meade, and Barrett McDougal were also members of the department's faculty during the 1960s and early 1970s. In the mid to late 1970s, the faculty also included Rex Peterson, Marjorie Ellis, and Lane Hartsock.

Hellman was also a pioneer in the development of instruction in cartography, photogrammetry, and remote sensing and encouraged his students to achieve technical expertise in these areas. The bachelor's degree program, with a concentration in cartography and photogrammetry, "was structured to take advantage of the regional expertise and job markets in federal and state civil service and commercial mapping establishments" (Fitzsimons 1991, p. 176). He "wanted students to use their cartographic skills not only to gain employment, but also to solve data inventory and



Figure 3. Department Chairs Allen Hellman, Lawrence Estaville, and Richard Boehm.

retrieval problems common in urban and regional planning” (p. 176). In emphasizing not only technical knowledge but also application and links to geographic theory, Hellman laid the original foundation for the department’s current nationally recognized emphasis on geographic information science.

### **Department Growth and Development**

In 1977, Hellman stepped down as chair of the department and returned to the faculty, and Richard Boehm succeeded him as chair (Figure 3). Boehm, a native of St. Louis, had served as an instructor and assistant professor at SWT during the 1960s while working on his doctorate at the University of Texas at Austin. He returned to teach at his undergraduate alma mater, the University of Missouri, for six years (including a year as department chair) before moving back to San Marcos as department chair.

Boehm’s years as chair were marked by remarkable growth in the number of SWT students enrolled in geography courses and majoring in geography. The success of Boehm’s leadership represents a unique story in the history of American geography during a period of national economic reces-



sion, and at a time when many well-established geography programs including Chicago, Michigan, and Columbia were scaled back or closed altogether. Boehm's return to SWT coincided with one of Texas' major economic booms. The national economy in the late 1970s was in recession, in part because of very high prices for petroleum and petroleum products associated with production limits imposed by the Organization of Petroleum Exporting Countries. As a major energy-producing state, however, Texas was spared the effects of the recession, and high oil prices brought rapid population growth and unprecedented prosperity to the state.

Under Boehm's leadership, the Department of Geography and Planning seized upon the state's prosperity and propelled itself to national recognition. Boehm successfully merged Hellman's three-pronged approach with his own expertise in geographic education that the university had emphasized since Sterry's years. So successful were the initiatives established during the early years of Boehm's administration that the department was able to take advantage of the statewide recession associated with the collapse of the state's energy economy in the mid-1980s to cement its reputation for high-quality undergraduate teaching, launch its first graduate program, and promote expansion of the faculty, thus setting the department on the road to becoming one of the largest departments of geography in the United States.

At the time of Boehm's arrival in 1977, there were five full-time faculty members in Geography and Planning. Fifteen years later in 1992, Geography and Planning had tripled the number of its full-time faculty to 15. This increase was directly attributable to Boehm's highly successful strategy of increasing enrollments as sharply as possible during the 1980s and into the early 1990s. Boehm's consistent emphasis on high-quality undergraduate teaching, applied geography, and geographic education were the keys to success. In 1978, Boehm persuaded Byron Augustin (D.A., Northern Colorado), then teaching at Northwest Missouri State University, to join the SWT faculty. "Doc" Augustin had already established a reputation for outstanding undergraduate teaching and enhanced this reputation at SWT, teaching large sections of introductory world geography

and regional courses on Latin America and the Middle East and earning every university honor associated with outstanding classroom teaching (Figure 4). James Petersen (Ph.D., Utah) in geomorphology and geographic education and Sent Visser (Ph.D., Ohio State) in economic geography and agricultural theory also strengthened the SWT faculty in the late 1970s and early 1980s. Both have been mainstays of the department ever since, with Visser retiring in 2001. Petersen also taught geology courses until the university moved geology out of the department and into the School of Science in the late 1980s.

Several others who joined the faculty in the 1980s also remain active members of the department. They include Dennis Fitzsimons (Ph.D., Kansas) in cartography and cartographic education, Susan Macey (Ph.D., Illinois) in energy, hazards, medical geography, and geographic information systems (GIS), and Fred Day (Ph.D., Ohio State) in population geography and South and East Asia. Others who served the faculty in the 1980s but are no longer associated with the university include Donald Brandes (Ph.D., Florida) in cartography, Richard Averack (Ph.D., Western Ontario) in cartography, Bruce Davis (Ph.D., UCLA) in GIS, Ted Goudge (Ed.D., Oklahoma State) in cultural geography, Gary Hausladen (Ph.D., Syracuse) in cultural geography, Peter Johnson (Ph.D., Oregon) in regional planning and cultural geography, William Gordon (Ph.D., Texas A&M) in urban and regional planning, Darrell Napton (Ph.D., Minnesota) in cultural, urban, and population geography, and Ryan Rudnicki (Ph.D., Pennsylvania State University) in GIS.

During the 1980s, the number of undergraduate majors grew to more than 400, making it the largest undergraduate program in the country. A variety of strategies including outstanding freshman-level teaching by Augustin and others, emphasis on the value of geography training in the job market, field trips, and social events were used to encourage students to major in geography. Boehm also worked diligently to require that all students in the university take a social science course, and insisted that world geography be one of the choices available to students. The program became recognized not only for its numbers, but also for its quality. A



Figure 4. Byron Augustin

study published in a 1981 issue of the *Journal of Geography* as “The Overlooked Departments of Geography” ranked SWT’s program as the best undergraduate program in the U.S. (de Souza et al. 1981). A similar survey a decade later also rated SWT’s Geography program as the nation’s best undergraduate program (Norris 1992).

Continued growth along with increased national recognition of the department in the 1980s allowed Boehm to leverage several new faculty positions from the university administration. In the early 1990s, the department was able to attract five geographers who would become mainstays of the department in the late 1990s and into the first years of the twenty-first century. These include Denise Blanchard (Ph.D., Colorado) in natural and environmental hazards and economic geography, Brock Brown (Ph.D., Oklahoma) in cultural ecology and geographic education, Richard Earl (Ph.D., Arizona State) in water resources and environmental

management, James Kimmel (Ph.D., Texas at Austin) in environmental management and nature and heritage tourism, and John Tiefenbacher (Ph.D., Rutgers) in environmental management and hazards.

Not only did Boehm depend on high-quality teaching as an important means of building the department, but he also played a pivotal role in establishing SWT as a leading center for teaching and research in geographic education. Boehm's numerous contributions and leadership in the geographic education realm include the establishment of the Texas Alliance for Geographic Education (TAGE) along with several state and national curricular reforms. In the early 1980s, several national tests and surveys revealed that United States citizens lacked basic geographic knowledge and skills deemed necessary in a globalizing world. As part of a movement toward geographic literacy, the Educate America Act of 1989 identified geography as one of five core subjects to be taught in schools across the U.S. In response to growing evidence of geographic ignorance and in light of the new education act, the National Geographic Society established Geographic Alliances in each state. The goal of the alliances is to provide each state's K-12 geography teachers with mentoring and innovative teaching techniques and lesson plans. Befitting SWT's historical development as a normal school, the Texas Alliance was established at SWT. By the time Boehm concluded his 17 years as department chair in 1994, TAGE had become the largest geographic alliance in the country and one of the most flourishing.

Under the leadership of Boehm and James Kracht of Texas A&M University, TAGE began to serve as an integral part of Texas' K-12 geographic education program as well as a looking glass toward higher education in geography. TAGE, with a current membership of more than 6,000 teachers, continues to host workshops and conferences several times a year, emphasizing the blending of classroom applications with geographic content. In addition to conferences and workshops, the alliance has reached over 1,400 educators through nearly 50 geography institutes. Moreover, Texas Alliance educators played a key role in changing the state's social studies curriculum, which now requires one year of world geography in high school.

In addition to its efforts to promote improved teaching of geography at the K-12 level, the alliance has also influenced higher education geography programs throughout the state and nation. The efforts pioneered by TAGE were underscored in Boehm's pivotal role in developing national standards for geographic education published in 1994 in *Geography for Life*, which continues today to change the landscape of geographic education across the United States (Boehm et al. 1994). Indeed, at its 2002 annual meeting in Los Angeles, the Association of American Geographers (AAG) will recognize Dick Boehm's outstanding career achievements with its Gilbert M. Grosvenor Award in Geographic Education, one of the association's highest honors.

For the first eighty years of the university's history, geography was taught at the undergraduate level. In the 1970s, some graduate courses were offered to graduate students in degree programs in other departments. In 1983, however, the university was granted permission to offer the Master of Applied Geography (MAG) degree. The department designed the MAG program to educate geographers to use their skills and knowledge to solve real-world problems with geographic dimensions, particularly those in Central Texas. The MAG contained three foci, including resource/environmental studies, land area development and management, and cartography and photogrammetry (which became cartography and geographic information systems in 1997 and will become geographic information science in 2002). A fourth general option enabled students to design their own specializations within applied geography, including a track specifically designed for those interested in geographic education.

At first, most MAG students were working professionals. Having had extensive off-campus teaching experience in the university's occupational education program, many geography faculty members were aware of the need for an applied geography graduate degree. This need was reinforced by Larsen's extensive contacts in state agencies in Austin. The innovative evening program soon attracted numerous professionals from Austin and San Antonio who wanted to gain vertical mobility in their positions or change professions, and it became a model for other applied geography

programs across the United States. Boehm, Visser, Harrison, Larsen, and other Geography and Planning faculty used their extensive knowledge of applied geography to identify employment opportunities for students and graduates. Although the program was strongly oriented to the work force, the department made strong efforts to ensure intellectual rigor. Visser established and frequently taught required courses in quantitative methods and research design, establishing a precedent; courses in research and quantitative methods continue to be required of all graduate students, both master's and Ph.D.

MAG students as well as undergraduate majors were encouraged, and at first MAG students were required, to enhance their employment prospects through internships. The department's internship program was established by Harrison and later directed by Napton, Blanchard, Sally Caldwell, and the current director, Mark Carter, who earned his B.A. and MAG degrees in the Department in the early 1990s. It soon became recognized as one of the largest and most successful geography internship programs in the nation, and it helped to ensure high employment placement rates for the department's graduates—a tradition that continues today. Graduate as well as undergraduate alumni became successful in government service, teaching, and the private sector throughout Texas. As more and more alumni entered the workforce and moved into positions of greater responsibility, their activities became instrumental in establishing internships and placing graduating students, thereby solidifying the department's reputation for high-quality applied geography across the state and nation.

### **Maternity and Recognition**

After 17 extraordinary years as department chair, Boehm returned to full-time teaching and research in the summer of 1994. Following a national search, Lawrence Estaville, chair of the Department of Geography at Fresno State University, became SWT Geography's third department chair (Figure 3). Estaville (born Estavillo, a Latino surname) is a native of Louisiana. He earned a Ph.D. at the University of Oklahoma, and taught at

Wisconsin-Oshkosh, Clemson, and Fresno State before accepting the chair at SWT. Since his appointment, Estaville has led the department through a remarkable period of growth and maturation. The department has built upon its strengths achieved through its work under the leadership of Sterry, Hellman, and Boehm in earlier periods and in doing so has substantially enhanced its national reputation in many ways and has developed increasingly stronger international linkages.

SWT Geography's maturation period of the 1990s coincided with a maturation of the Texas economy, as well as of the university itself. Historically, the Texas economy was dependent on agriculture, oil and gas, and other natural resources. The state's dependence on these primary-sector products caused it to experience periodic booms and busts typical of resource-dependent economies. The most notorious boom-bust cycle in recent Texas history occurred in the 1970s and 1980s associated with oil price fluctuations. During the 1980s and 1990s, however, the Texas economy began to free itself from its traditional dependence on agriculture and natural resources. The state began to achieve recognition for leadership in a variety of other fields, including high-technology industries whose leading center in the state became Austin. In 1993, Congress approved the North American Free Trade Agreement (NAFTA). Enactment of NAFTA brought even more people and more money into Texas, especially along the "I-35 Corridor" connecting Austin and San Antonio through San Marcos. The growing pains associated with these developments also have resulted in a number of significant economic, social, environmental problems, and SWT Geography faculty, students, and alumni have used their expertise to place themselves at the forefront in helping to solve these problems.

Estaville's arrival also coincided with a period in which the university was beginning to undergo significant maturation. During the 1970s and 1980s, SWT developed a reputation as a "party school," associated in the minds of many members of the general public as an institution with minimum academic standards, low expectations, and frivolous behavior on the part of less than serious students. Eliminating this "party school" reputation would become a high priority of the university administration. In

1989, Dr. Jerome Supple became the university's eighth president. Most of the university's previous presidents had been local educators or political appointees. In contrast, Supple had a distinguished career in university administration in the State University of New York (SUNY) System before coming to SWT.

When he arrived, Supple was determined to downplay the university's unfortunate "party school" reputation, upgrade educational standards, and bring national recognition for research and teaching to the university. He identified geography as an area of growth potential, and provided the department with critical resources that were used to enhance its already strong reputation during the 1990s. In turn, the department's unparalleled expansion and solid maturation proved crucial to the success of Supple's efforts to enhance the university's reputation. The noteworthy achievements of Estaville's administration of the department in the second half of the 1990s included the establishment of two Ph.D. programs in an extraordinary short period of time, improvement of the MAG program and creation of a new Master of Science program, renewed commitment to undergraduate programs, an almost doubling of full-time faculty from 16 to 29, an increase in support staff from 1 to 4, dramatic expansion and upgrading of facilities and laboratories, establishment of important new research initiatives and research centers, and a highly amplified commitment to the department's alumni.

Although the university was not authorized to grant doctoral degrees prior to the 1990s, Supple recognized that doctoral programs would be critical to achieving his goal of national recognition for the university. Geography, with its already strong reputation for undergraduate and master's education, would be a logical choice to establish the university's first doctoral programs. In 1994, Supple hired Estaville to lead the efforts in establishing a Ph.D. program in Geography. Dr. Robert Gratz, Vice President for Academic Affairs, and Dr. Jack Gravitt, Dean of the School (now College) of Liberal Arts, provided invaluable guidance and unwavering support for the development of a Ph.D. program in Geography. Teams of consultants, including AAG Executive Director Ronald Abler, former AAG



president Melvin Marcus, and future AAG presidents Susan Cutter and Duane Nellis visited SWT and gave strong support to the Department's efforts to create doctoral programs. In July 1996, the Texas Higher Education Coordinating Board approved Ph.D. programs in environmental geography and geographic education, and the first five doctoral students were admitted in the fall of that year. Four years later, in May 2000, Lisa DeChano and Todd Votteler became SWT's first Ph.D. graduates, certainly a momentous milestone in the university's history. In December 2000, Xinnong Zhou became SWT's first international student to achieve the Ph.D. Jeffrey Lash and Gregory Reed graduated in August 2001, thus becoming the first two geographic education graduates, and Ronald Hagelman and Paul Sutton were awarded doctorates in December 2001. All of the university's Ph.D. graduates are employed in high-level, teaching or research-oriented positions in academia, government, or the private sector.

While the doctoral programs were being established, concern was raised that establishing Ph.D. programs would deflect resources and energy from the long-recognized, high-quality undergraduate and master's programs. Wisely, Estaville insisted that the quality of these programs must be further strengthened in conjunction with the establishment of the doctoral programs. In order to achieve this goal, hiring of faculty members with nationally recognized expertise for research and experience in graduate education would be a top priority. Accordingly, the department was able to attract several nationally recognized geographers with extensive experience in graduate research and teaching. These new faculty included Ronald Eyton (Ph.D., Illinois) in remote sensing and computer cartography, Fred Shelley (Ph.D., Iowa) in political geography and environmental policy, Anthony De Souza (Ph.D., Reading) in geographic education and economic geography, Craig Colten (Ph.D., Syracuse) in hazards and water policy, David Butler (Ph.D., Kansas) in geomorphology, natural hazards and biogeography, Susan Hardwick (Ph.D., UC-Davis) in geographic education and cultural geography, David Stea (Ph.D., Stanford) in spatial cognition and environmental psychology, and George Malanson (Ph.D., UCLA) in ecological modeling and biogeography. SWT Geography also

recruited new, young, dynamic faculty members including Ben Zhan (Ph.D., SUNY Buffalo) in GIS and spatial modeling and optimization, Julie Tuason (Ph.D., Rutgers) in geographic education and parks and protected areas, Richard Dixon (Ph.D., Texas A&M) in climatology and oceanography, Pamela Showalter (Ph.D., Colorado) in hazards and remote sensing, Deborah Bryan (Ph.D., Ohio State) in GIS and location analysis, Michael Solem (Ph.D., Colorado) in geographic education and educational technologies, Yongmei Lu (Ph.D., SUNY Buffalo) in GIS and urban and regional analysis, and Mark Fonstad (Ph.D., Arizona State) in water resources and GIS. Most recently, the Department hired Sharolyn Anderson (Ph.D., Arizona State) in GIS and remote sensing, Joanna Crowe (Ph.D., Johns Hopkins) in water resources and hydrological modeling, and Mark Horner (Ph.D., Ohio State) in transportation and urban planning, all three of whom will join SWT Geography in fall 2002. By giving priority to hiring people with expertise in the theory and application of geographic information science, Estaville established a nationally recognized group of experts in GIScience that now has grown to 10 faculty members. Bryan, who earned her B.A. in Geography at SWT in 1990, and Dixon, who earned his MAG degree in 1992, became the first SWT undergraduate and graduate Geography alumni respectively to return to the department as members of the faculty.

The two doctoral emphases, environmental geography and geographic education, along with geographic information science, formed the core to the department's research and teaching emphases during the 1990s. The initiatives in geographic education established during Boehm's leadership of the department were expanded upon in the 1990s. In 1998, with support from a large grant from the Fund for the Improvement of Post-Secondary Education, Susan Hardwick and Brock Brown established the "Step Up to Geography" distance learning program that initially focused on Latino teachers in the Lower Rio Grande Valley of Texas. Emphasizing high-quality instruction and a continued commitment to improving the quality of geography teaching in grades K-12, the "Step Up to Geography" program also became the seedbed for a MAG degree with a special-

ization in geographic education that enables teachers and others at a distance to pursue the degree. Today, Brown, current director of the “Step Up to Geography” program, and Michael Solem are the department leaders in providing geography distance education.

In addition to TAGE and “Step Up to Geography,” the department established in 1997 the Gilbert M. Grosvenor Center for Geographic Education, named in honor of the contributions of Gilbert Grosvenor of the National Geographic Society (Figure 5). The purpose of the Grosvenor Center is to encourage research and to improve the quality of geographic education nationwide. Accordingly, center-sponsored research into how people learn geography has influenced changes in public policy, elevating the importance of geography in societies throughout the world. The center sponsors, coordinates, and facilitates research efforts in teaching methods, student and public learning of geography, curriculum, assessment, spatial cognition, and the uses of technology. The center sponsored international research conferences on geographic education in San Marcos in 1997, 1999, and 2001. In 1999, the center launched a new professional journal, *Research in Geographic Education*. This journal emphasizes geographic education issues at the university level rather than on K-12 education. This shift in focus from primarily a teaching orientation to a research concentration parallels the growth within the department as the transition was made from undergraduate and graduate applied work only to theoretical, graduate research studies as well. The center also sponsors the annual Grosvenor Lecture series that brings to SWT Geography internationally recognized individuals to give public presentations. The first four Grosvenor Lectures have been presented by Grosvenor himself, former U.S. Secretary of State James Baker, *National Geographic Magazine* editor William Allen, and U.S. Senator Kay Bailey Hutchinson. In 1997, Estaville was successful in receiving a \$1 million grant from the Houston Endowment to establish the Jesse H. Jones Distinguished Chair in Geographic Education. After a national search, Boehm was selected as the first holder of this prestigious position, which was the first permanent endowed chair in SWT’s history.



Figure 5. Gilbert Grosvenor and Richard Boehm.

Moreover, in the realm of geographic education, the department established a spatial learning laboratory in 1998. Through the laboratory and with aid from a tri-national National Science Foundation grant, researchers led by Stea have produced major findings on pre-school children's ability to understand, read, and use maps (Blaut et al. 2002). In October 2001, the department's Texas Atlas Project, under the leadership of Estaville, Augustin, and Ph.D. student Lynn Resler, published the *School Atlas of Texas*, the first of its kind, which is aimed at filling an important educational need for the school children of Texas (Estaville et al. 2001).

Under Estaville's leadership, the department has established other research centers and has undertaken several important initiatives. In 1998, the department established the James and Marilyn Lovell Center for Environmental Geography and Hazards Research, with David Butler as director (Figure 6). In 2001, Denise Blanchard-Boehm and John Tiefenbacher

became associate directors. The Lovell Center, named in honor of the famed Apollo 13 astronaut and his wife, has served as a clearinghouse for environmental geography research. Many research initiatives, including studies of environmental change in Glacier National Park by Butler and Malanson and their students, studies of climate change by Dixon, and investigations of natural and technological hazards by several researchers, including Tiefenbacher, Colten, Blanchard-Boehm, and Larsen have taken place under the auspices of the Center. Like the Grosvenor Center, the Lovell Center sponsors an annual lecture series by distinguished public figures. Captain Lovell, astronaut Sally Ride, the first American woman in space, and Jack Dangermond, founder and president of ESRI, have given the first three Lovell Lectures. Apollo 16 astronaut Charles Duke, one of only twelve humans to have walked on the moon, will give the fourth Lovell Lecture in February 2002. The center has also initiated an occasional paper series on topics in environmental geography with the first paper published by Pamela Showalter and Matthew Ramspott in 1999. Additionally, the center sponsors paper sessions at regional and national meetings, and these serve as the basis for special issues of national journals including *Physical Geography*.

SWT Geography faculty also led in the establishment of three university interdisciplinary research centers. In 1996, the Freshwater Research and Policy Center was established through the leadership of Estaville and Joe Moore, a nationally known expert on water resources policy who became SWT's first Distinguished Professor and the center's director. In 1997, Jim Kimmel led in the establishment of the Center for Nature and Heritage Tourism with an accompanying undergraduate minor program, in part recognizing the increasing importance of tourism in the Texas economy. In 2000, the Center for Texas-Mexico Applied Research was founded through the efforts of Estaville and Stea, who serves as the Center's director with John Tiefenbacher as one of the associate directors.

Under the leadership of Estaville, Moore, and Earl, the Texas Watch program, a \$600,000 annual U.S. Environmental Protection Agency pass-through contract, was brought to the department in 1999 via the Texas Natural Resource Conservation Commission. Eric Mendelman became



Figure 6. David Butler with astronaut James Lovell and Marilyn Lovell.

the first coordinator of the SWT Geography Texas Watch program, which coordinates the activities of a statewide network of volunteer water quality monitors and organizations. The Texas Watch program underscores the deep commitment that the department made during the 1990s to be at the forefront of understanding water resources issues and helping to solve the many related problems in Texas.

The Texas Watch program highlights the decade of the 1990s as an indicator of a substantial increase in SWT Geography grant and contract activity. In the early 1990s, the department averaged about \$500,000 in grants and contracts each year; by 2001, the average was more than \$2

million annually, and the department's goal of reaching \$4 million per year by 2005 was in sight. Boehm, Estaville, Stea, and Larsen have all secured more than \$1 million in grants/contracts in their careers, and Kimmel and Zhan are poised to reach this mark in the near future.

This large increase in grant and contract activities contributed substantially in bringing new technologies and equipment into the department, supporting large numbers of graduate students, and spinning off many publications from the research activities. More than \$1.5 million worth of state-of-the-art research equipment was purchased from grants and contracts during the past five years. From fall 1995 to spring 2000, the department's grants and contracts provided almost \$350,000 of support for graduate research assistants. New equipment and superb graduate assistant support enhanced the already increasing rate of publication by members of the department. In the same period, SWT Geography faculty published 47 books, 67 book chapters and 171 refereed papers and gave more than 400 scholarly presentations.

The department has worked diligently to establish the Ph.D. program at SWT while enhancing the already high reputation of the department's master's and undergraduate programs. Under the leadership of Fred Shelley, graduate program coordinator (Figure 7), the MAG program experienced a dramatic improvement in quality in the last half of the 1990s when admission standards were upgraded and the curriculum was streamlined. In fact, the average Graduate Record Examination (GRE) combined verbal-quantitative score of incoming master's students has risen more than 200 points to 1,150 since 1995. Most important, the meaning of "applied geography" was broadened to include problem-solving skills at a higher conceptual level. Increasingly more graduates of the program began to move beyond local, middle-level management positions, and many took teaching, consulting, and other higher-level positions. Graduation and retention rates improved substantially, with the average number of graduates per year increasing from 14 between 1990 and 1995 to more than 40 between 1995 and 2001. The Texas Higher Education Coordinating Board approved a Master of Science in 2000, and the program

began in the fall of the same year. This M.S. program allows high-quality master's students to take Ph.D. courses and develop deeper theoretical understanding and research expertise than has been the case with the non-traditional MAG program. The first students will graduate from the M.S. program in May 2002.

The undergraduate program underwent similar quality improvements. As with the master's program, the department's goal was to improve standards and quality without sacrificing access and quantity. Under the leadership of Brock Brown as undergraduate program coordinator (Figure 7), in 1999 the department instituted a pre-major program. In order to be accepted as a geography major, an undergraduate now must complete at least 45 hours of coursework, including three geography core courses, with an above-average grade point average. The implementation of the pre-major program has had a considerable impact on the quality of the department's undergraduate students. The department continues to attract a large number of majors, but the average test scores, grade-point averages, and other measures of quality for geography majors have increased considerably since the implementation of the pre-major requirement.

In academic year 2000-2001, the department established two four-course certificate programs, one in GIS and the other in water resources policy. These undergraduate programs allow any undergraduate, graduate, or nondegree-seeking student to obtain certification of expertise in these areas upon completion of appropriate coursework. In August 2001, the first class of 12 students graduated from the GIS Certificate Program, and all either entered graduate school or began work in professional positions emphasizing GIS. The department anticipates that both of these certificates will be in high demand, given the continued importance of GIS and water resources policy to the local, state, and national economies. In anticipation of this increased demand, the department is currently placing the GIS Certificate Program's four-course sequence online for distance learners beginning in fall 2002.

In 1998, the department formally changed its name from the Department of Geography and Planning to the Department of Geography. This





Figure 7. Fred Shelley and Brock Brown.

change mirrored the increasing integration of the department into national initiatives in geography. As well, the change implied recognition of the value and importance of geography education to the planning profession. Numerous alumni of the department work in planning agencies and planning-related positions across Texas and around the country. In recognition of his outstanding contributions to planning education, in 2000 the Texas Chapter of the American Planning Association honored longtime faculty member Robert Larsen with its Distinguished Achievement Award (Figure 8). This well-deserved award not only recognizes Larsen's contributions to planning education but also symbolizes the fact that persons with high-quality geography training have long achieved exceptional success in the planning profession.

The Estaville years have been marked by maturing relationships between the department and its current and past students. Special efforts

have been made to reach out to alumni and families of current and past students. In April 1995, the department held its first Alumni Reunion and Student Celebration, inaugurating what has become an important annual departmental tradition, with more than 600 people attending the seventh event in April 2001. Over the last five years, faculty and alumni have donated 27 scholarships to the department in honor of family members, colleagues, and loved ones. These scholarships as well as those from friends of the department and a variety of awards are presented annually at the Alumni Reunion and Student Celebration, a day also filled with workshops, exhibits, tours, barbeque, and Texas music!

Both students and alumni continue to enjoy the many rewards of the department's field experiences. Byron Augustin's classic Yucatan Summer Semester that is renowned throughout Texas (Figure 9) was joined in 1997 by the first Switzerland Semester, which Boehm, Estaville, and Augustin created the year before in collaboration with Franklin College in Lugano, Switzerland and which has expanded to include much of Italy and, most recently, a stop in Paris. These field excursions and others to the American West, Mexico, and Germany have been a part of conferences sponsored by the department or its Grosvenor Center and led by such faculty members as Kimmel, Earl, Petersen and Stea. Petersen has twice led the SWT-Hannover University student exchange program to Germany and will do so again in 2002. In 2000, Stea and Tiefenbacher undertook a summer field study in Guanajuato, Mexico. In 2001, Stea and Petersen coordinated a combination field class and post-Grosvenor Center conference excursion into Coahuila, Nuevo Leon, and Tamaulipas, Mexico. Additionally, Dixon will lead a field class to Yellowstone National Park in the near future.

Student organizations are playing an increasingly important role in departmental activities. For many years, the department has maintained an active chapter of Gamma Theta Upsilon (GTU), the national geography honor society. The Student Planning Organization (SPO) has been energetic in promoting the needs of students interested in the planning profession. In 1995, the department's graduate students established the Graduate Student Forum. The activities of the forum paved the way for

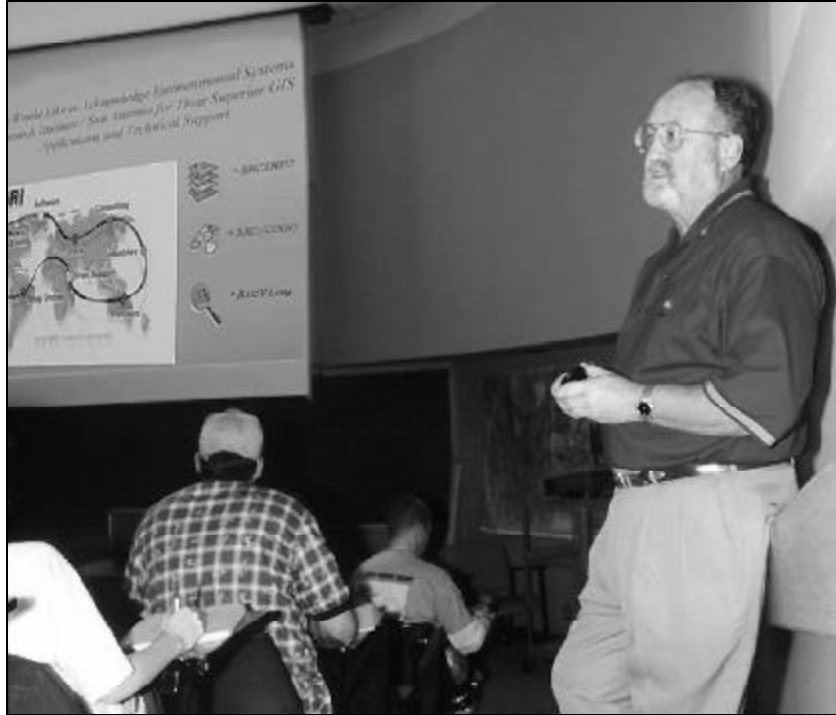


Figure 8. Robert Larsen.

formal representation in departmental governance by doctoral, master's, and undergraduate student representatives, two of whom regularly participate in faculty meetings.

In 1998, the department established a chapter of the National Association of Environmental Professionals (NAEP). NAEP has been especially vigorous in promoting environmental awareness on the SWT campus, most notably by spearheading an effort to establish a university-wide student fee for environmental projects. The following year, several students and professors took the initiative in forming Supporting Women in Geography (SWIG). The purpose of this group is to promote participation of women in the discipline and to empower women who are pursuing academic and professional careers in geography. The AAG has recognized the contribu-



Figure 9: Students on Yucatan Field Trip.

tions of SWIG at SWT and other universities in promoting a hospitable climate for women in geography, thereby enhancing SWT's increasing national reputation as a department with strong support for women and minority students.

Moreover, the upgraded quality and maturation of the master's and doctoral programs have also had the effect of creating a much more cosmopolitan geography student body; more than half of the fifty states and more than 20 countries are represented by the department's current graduate students and recent graduate alumni. And with Stea's leadership, SWT Geography is currently working diligently to strengthen its linkages with

Mexico, both in teaching and research. The Center for Texas-Mexico Applied Research has emphasized work on bi-national environmental research programs (with a border emphasis) that originally involved SWT and the Universidad Autonoma de Tamaulipas but is expanding to include other Mexican institutions. As part of such an amplified international collaboration, the department has recently hosted visiting scholars from Spain, India, and South Korea.

The department has been blessed over the years with excellent office staff, including Virginia Harden, Betty Williams, and Eileen Trainor. Beginning in 1995, the number of department staff members began to grow until today it is comprised of four full-time professionals: Angelika Lester, department office manager; Daniel Hemenway, computer systems analyst; Joan Pasquali, advising services; and Sandra Foglia, who supervises the main office and its several student assistants (Figure 10). Moreover, Judy Behrens is the office manager for the Grosvenor Center, and Terry Wendland is the senior grant secretary for the Texas Watch Program. With the department's continued expansion of its doctoral programs, it is expected that three other full-time staff positions will be added in 2002: a graduate advisor-recruiter, another computer systems analyst, and a departmental grants and contracts administrator. Of course, without excellent support staff, the department's many past accomplishments would not have come to fruition and its future goals will not be reached.

Whereas prior to the 1980s most of the department's service activities were local, by the 1990s the department's scope was national, attracting the attention of national geography organizations, notably the AAG and the NCGE. The department became increasingly integrated into and provided higher levels of leadership to major national geography organizations. The SWT faculty now includes 11 persons who have been honored with the NCGE Distinguished Teaching Achievement Award, the largest group to have won this prestigious award: Augustin, Boehm, Brown, Butler, Day, Estaville, Fitzsimons, Kimmel, Larsen, Petersen, and Shelley. Among the other outstanding SWT Geography teachers in the 1990s were Eyton, Earl, and Sally Caldwell.

Geography faculty members have also received increasing international recognition for the quality and quantity of their research efforts. Butler was honored in 1999 by the Geomorphology Specialty Group of the AAG with the G. K. Gilbert Award for outstanding research, notably his book on animals as geomorphic agents (Butler 1995). Stea received the Environmental Design Research Association's lifetime Distinguished Achievement Award—the highest of honors from this association. These two national awards typify the 48 major awards and honors, including 7 major teaching awards, earned by the faculty between 1995 and 2000.

Recognition also extended to national and regional professional organizations. Petersen served as president of the NCGE in 1999-2000, following in the footsteps of Boehm who was president of the organization in 1983. In 1996, Day served as president of SWAAG. Visser (1994-1997) and Shelley (2000-2003) represented SWAAG as members of the AAG Council, and SWAAG elected Tiefenbacher as its treasurer for 2002-2003. In 1996, Estaville and Tiefenbacher led in the establishment of the *Southwestern Geographer*, SWAAG's scholarly journal. Tiefenbacher and Julie Tuason were the journal's first co-editors, and Tiefenbacher remains editor of the journal, which is now in its fifth year of publication. In the spring of



Figure 10: Current Department Office Staff: Daniel Hemenway, Angelika Lester, Joan Pasquali, and Sandra Foglia.

2001, the AAG Council selected Fitzsimons to be the cartography editor for both the *Annals* and the *Professional Geographer*.

SWT Geography faculty have also been exceptionally active as leaders of AAG specialty groups, for example: Butler in the Geomorphology and Mountain Geography Specialty Groups; Estaville in the Ethnic Geography Specialty Group; Macey in four specialty groups—Geographic Information Science, Aging, Energy and Environment, and Medical Geography; Shelley in the Political Geography Specialty Group; and Tiefenbacher in the Hazards Specialty Group. From these leadership positions in AAG specialty groups have come one of the largest groups of authors and co-authors for the forthcoming AAG anthology about the state of the discipline titled *Geography in America at the Dawn of the 21<sup>st</sup> Century* (Gaile and Willmott 2002).

Moreover, SWT Geography faculty have been leaders in organizing and implementing professional conferences, for instance, and as previously mentioned, the 1999 SWAAG annual meeting and Boehm's four geographic education conferences. Several other conference leaderships include: Brown organizing six National Geographic Society's academies on leadership and urban geography from 1994 to 1999; Butler serving as co-chair of the 2001 Binghamton Geomorphology Symposium on mountain geomorphology; Fitzsimons' local arrangements work for the 1996 North American Cartographic Information Society; Larsen's leadership for 11 annual national solid waste management conferences from 1986 to 1996; Petersen serving as the 1995 NCGE annual meeting chair, co-organizer of the 1999 Binghamton Geomorphology Symposium that focused on teaching geomorphology, and geography organizer for the World 2000 Conference on the Teaching of World History and World Geography; Shelley's organizational leadership for the Political Geography Specialty Group's annual pre-conference in 1997; Stea's organizational efforts for the U.S.-Mexican Research Planning Conference in 2001; Tiefenbacher's leadership in organizing the Hazards Specialty Group's 1997 Pre-AAG Conference; and Zhan's local arrangements work in 1996 for a conference on "Formal Models of Common Sense Geographic Worlds."

Students also achieved recognition at the national level. Two students, Julie Henry and Nancy Middlebrook, were elected to the national board of directors of GTU. Several others have served on the boards of directors of AAG and NCGE specialty groups. In addition, SWT Geography students won 27 major awards from 1995 to 2000.

### **Into the 21st Century**

The Estaville years have indeed been whirlwind, almost breathtaking, but there is much to be done in the future to ensure SWT Geography's legacy as a truly outstanding department. Over the past hundred years, Geography at SWT has transformed from a single course on geographic pedagogy to the nation's largest geography department, a dynamic, Ph.D.-granting unit that continues to achieve national recognition for its achievements in research, teaching, and university, community, and disciplinary service. This steady growth and increased recognition is the result of far-sighted and determined leadership by the department's chairs in cooperation with the SWT administration, excellent work and deep commitment on the part of the faculty and staff, strong support from alumni, and a sense of cooperation and partnership with nationally competitive and highly motivated undergraduate and graduate students.

As the 21<sup>st</sup> century begins, the department and its leaders in close cooperation with Dr. Ann Marie Ellis, the exceptionally supportive new Dean of the College of Liberal Arts, are envisioning and acting upon further initiatives to improve the quality of its research, teaching, and service activities. Most of these initiatives link the department's longstanding concentrations in environmental geography, geographic education, and geographic information science (GIScience). Having received university and board of regents' approvals in fall 2001, the department now awaits approval of its proposed Ph.D. program in GIScience from the Texas Higher Education Coordinating Board. If approved, the new Ph.D. program will accept its first students in fall 2002. This proposed Ph.D. program in GIScience is emblematic of SWT Geography's future in this important area.

In spring 2001, for example, the department, led by the tireless efforts



of Ben Zhan, gained membership into the University Consortium for Geographic Information Science (UCGIS), the prestigious international organization that promotes and supports the development of theoretical and applied geographic information science. In 2001, Estaville negotiated an agreement among SWT Geography, its Grosvenor Center, Sun Microsystems, ESRI, and the National Geographic Society's Geography Education Outreach Program that brings more than \$1 million worth of new, cutting-edge research and teaching computer laboratories, servers, and networks into the department (Figure 11). This nationally important partnership, titled the Sun Center of Excellence in Web-based Geographic Information Science Education, will develop Web-based curricular material for middle school and high school geography classes throughout the nation. This collaboration is reinforced by a recent large grant to Boehm and Zhan from the Texas Workforce Commission to establish a program in geographic information technology training for the youth of Texas.

In developing these and other research, teaching, and service initiatives, the department has been well attuned to demographic, cultural, and economic changes that have occurred in Central Texas and throughout the country. The department is nationally recognized for its leadership in encouraging women faculty and students. In its early years, a large majority of students within the university were women, reflecting its history as a normal school. Between the 1960s and 1980s, however, the percentage of female students in the department dropped considerably, but the ratio of women to men increased again in the 1990s. For example, only 25% of the 80 people who graduated with the degree of Master of Applied Geography before 1995 were women. Since that time, 45% of the program's graduates have been female. Moreover, of the 10 entering Ph.D. students in 2001, 6 were women. The full-time faculty includes seven women, the largest group of women faculty members in any American geography department, and they help to mentor the department's increasing number of women students.

The department, which currently includes one Hispanic and two Asian faculty members, has also strengthened its commitment and is making



Figure 11. One of Two Sun Microsystems Thin-client Teaching Labs.

increasing progress toward more opportunities for members of underrepresented ethnic minority groups. The “Step Up to Geography” distance learning program has emphasized outreach to Latino teachers in South Texas and other underserved areas of the state. In 2001, the National Geographic Society’s Educational Foundation and the U.S. Department of Education provided the department with funding for a Geography Academy program, in which high school teachers and their outstanding minority students will spend time in the department learning about modern geography, its powerful geo-technologies, and potential rewarding professional careers. It is anticipated that these programs will enhance the department’s efforts to recruit larger numbers of Hispanic, African-American, and Asian undergraduate and graduate students in the years ahead. Indeed, the future looks very bright for all of SWT Geography’s 500 undergraduate majors, 150 master’s students, and 30 Ph.D. students.

The department’s longstanding interests in applied geography, community service, planning, and geographic information science and technology have also put SWT Geography in a strong position to contribute to

solving major local and regional problems. Central and South Texas have experienced dramatic population growth in the past two decades, with further rapid growth anticipated. Although this growth has contributed greatly to the region's recent prosperity, growth has nevertheless been associated with critical social, economic, and environmental problems including urban sprawl, traffic congestion, vulnerability to drought, air and water pollution, and threats to endangered species. Geographic perspectives provide important insights into these and other problems, and the department continues to take a leadership role in helping local, state, national, and international officials resolve them. As well, hundreds of SWT graduates at the bachelor's, master's, and doctoral levels are active professionally within a wide variety of public agencies, nonprofit organizations, and private firms, using their geographic knowledge and skills to develop and implement creative solutions to serious problems and contributing to making a better life for all Americans, particularly for those in Texas.

The Department of Geography at SWT is an innovative and dynamic department whose past and current successes reflect careful attention to its long history and its position within the rapidly growing communities of Central Texas and the nation. In the future, further growth, development, maturation, and recognition, perhaps even becoming a named school of geography, is expected as SWT Geography continues to maintain its positions on the frontiers of research and at the forefront of public service, and its unwavering commitment to its students and alumni. Let us invite you to watch SWT Geography's vision unfold by visiting every so often our award-winning Web site at [www.geo.swt.edu](http://www.geo.swt.edu).

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