

TITLE: On-line Certification Program at Texas A&M University

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ABSTRACT

Potential Significance — This paper is presented to teacher education faculty who are examining alternative approaches for increasing the pool of highly qualified secondary level science teachers. A description of identifying four universities with life science graduate programs who are willing to participate in a program that enables graduates with advanced degrees an opportunity to enter secondary science classrooms in a large urban school district as teachers by completing an on-line lesson sequence, a preliminary field experience and a full year paid internship.

Content & Context

In May 2002, the Texas A&M University — Alternative Certification Program (TAMU-ACP) gained approval from the State Board of Educator Certification to offer a teacher certification program for Life Science, 8-12. The program was developed using the new standards for the PPR 8-12 and Life Science (8-12). TAMU-ACP proposes to offer a quality, affordable on-line alternative teacher certification program that will address the needs of individuals interested in non-traditional routes to the teaching profession as well as the needs of the participating school districts in their continuing efforts to recruit, train, and retain highly qualified individuals. This delivery plan will provide for a more flexible approach for students to enhance their current program of study with on-line modules running concurrently with their program.

Statement of Problem

The 2001 Texas teacher demand study (TAMUS, 2001) reports Texas school districts had an anticipated need of approximately 40,000 teachers. Teaching-field specializations of great need include secondary mathematics with 3,434 teachers and secondary science with 2,286 teachers. On the positive side, 97% of the teachers needed were employed by school districts this year. However, about 30% of the secondary science hires were less-than-fully certified (TAMUS, 2001). The results of this study affirm that a growing teacher shortage of fully certified teachers is met by school districts hiring teachers "on permits" at the beginning of the school year. One conclusion from these statistics is that

teacher preparation entities across the state must step up their efforts to prepare more teachers. Responding to this need, the Continuing Education Division in the College of Education at TEXAS A&M University is developing an Alternative Certification Program (ACP).

Advancing Knowledge and Understanding in Preparing Natural Science Teachers.

Recent reports document the need for fundamental restructuring of teacher preparation and professional development. Recruiting recent graduates from science curricula at Texas A&M University for the Alternative Certification Program to become secondary teachers is a key recruiting approach for this program. In addition, a potential solution consists of directing the energy and talent of graduate students and postdoctoral scientists to reinvigorate science education in schools (Alberts, 1999). This will require creating new, more accessible pathways for science professionals to enter teaching careers. A recent study found that while 36% of doctoral-level mathematics and science graduate student/postdoctoral fellows surveyed had considered secondary school teaching in their career decision-making, only 0.8% of science and mathematics Ph.D.s currently work in K-12 education. Reasons for not pursuing teaching careers include perceptions about the difficulty of obtaining teacher certification (NRC, 2000).

Curriculum — the Power of Technology the curriculum consists of 31 on-line lessons with major topics identified for Pedagogy and Professional Responsibilities in grades 8-12. On-line lessons will begin as early as November 2002. Interns will also be paired and complete a 40-clock hour supervised teaching field experience in a secondary school. Paired teams will progress through observation and shared teaching experiences under the guidance of project faculty and ISD staff. Participants who receive favorable recommendations after the initial field experience will be hired as entry-level teachers. During the one-year paid internship, interns will have a TxBESS trained paid mentor, who will guide, observe and provide constructive feedback to the intern. After the interns' first year of teaching, they will have the option of extending the mentoring relationships for up to two years during their employment.

Collaboration and Commitment the Texas A&M University — Alternative Certification Program (TAMU-ACP) was developed by a partnership among Baylor College of Medicine, Rice University, the University of Houston, and Houston Independent School District. Texas A&M University on-campus partners include the Colleges of Veterinary Medicine, Agriculture & Life Sciences, Science and Geosciences. TAMU-ACP has formed an active Operations and Content Review Panel (OCRP) to ensure participation and cooperation between the memberships. The panel has helped to develop the program, review applicant qualifications for admission, assist in policy development for compliance with the State Board for Educator Certification Standards and state law, and examine program performance evaluation data. A curriculum team consisting of teachers and administrators from the school districts as well as identified faculty from partnering universities was established to write the Pedagogy and Professional Responsibilities, 8-12 and the content area curriculum for the Life Sciences, 8-12. Prospective candidates will be recruited from two pools of candidates. Graduate students in science departments at the participating Universities will be the primary group

recruited through communication channels available within each organization. In addition, recent Texas A&M University graduates and students who have nearly completed a baccalaureate degree (within 1 semester) in biomedical science (College of Veterinary Medicine), wildlife and fisheries science (College of Agriculture and Life Sciences), geology, oceanography, meteorology (College of Geosciences), and physics, chemistry, biology (College of Science) will be contacted about an opportunity to participate in the ACP program.

Conclusions It is estimated that 10 to 20 individuals will be recruited from this group of science majors into life science (grades 8-12) teaching positions during year 1. Collectively, between 30 and 40 life science (grades 8-12) teachers will enter teaching through the *TAMU-ACP* program each year yielding 150 to 200 science teachers across five years.