

Fall 2000

An NSF -Funded Opportunity for Pre-Service Science Teachers

Lillian Mayberry
University of Texas at El Paso

Jack Bristol
University of Texas at El Paso

Follow this and additional works at: <http://digitalcommons.unl.edu/nhcjournal>



Part of the [Higher Education Administration Commons](#)

Mayberry, Lillian and Bristol, Jack, "An NSF -Funded Opportunity for Pre-Service Science Teachers" (2000). *Journal of the National Collegiate Honors Council --Online Archive*. 191.
<http://digitalcommons.unl.edu/nhcjournal/191>

This Article is brought to you for free and open access by the National Collegiate Honors Council at DigitalCommons@University of Nebraska - Lincoln. It has been accepted for inclusion in Journal of the National Collegiate Honors Council --Online Archive by an authorized administrator of DigitalCommons@University of Nebraska - Lincoln.

An NSF-Funded Opportunity for Pre-Service Science Teachers

LILLIAN F. MAYBERRY

JACK BRISTOL

UNIVERSITY OF TEXAS AT EL PASO

During the fall semester of 1995, a unique partnership opportunity was presented to the Colleges of Science and Education at the University of Texas at El Paso (UTEP). A National Science Foundation Request for Proposals was received from the Division of Undergraduate Education (DUE). It required Colleges of Arts and Sciences and Education to form collaboratives involving the improvement in the preparation of K-12 science and mathematics teachers: A Collaborative for Excellence in Teacher Preparation (CETP). Although unknown at the time, this would result in Honors education opportunities for students seeking teacher certification.

The Deans of the Colleges of Science (Jack Bristol) and Education (Arturo Pacheco) wrote a successful five year, five million dollar proposal (El Paso CETP, DUE NSF-9453612), recruited one math and two science educators in the College of Science, and formed a very successful partnership known locally as the Partnership for Excellence in Teacher Education (PETE). This program has resulted in a major revision in the requirements leading to K-12 certification in mathematics and science and provides significant stipends to students with a 3.0 or better GPA who wish to pursue certification.

One of the numerous components of the PETE grant includes field experiences (experiential learning) for the pre-service participants. Two courses used by students in this capacity are Desert Ecology and Marine Biology (taught by Honors Director, Lillian Mayberry); these are senior-level elective courses. Each of the courses involves an intense one-week field experience at either the 37,000 acre Indio Mountains Research Station (IRMS) owned by

AN NSF-FUNDED OPPORTUNITY

UTEP or the Intercultural Center for the Study of Deserts and Oceans (CEDO) on the Gulf of California in Sonora, Mexico, which has been utilized by the University for the past 16 years. PETE pays the field fees associated with the courses.

Students seeking elementary certification and those majoring in science or mathematics and seeking certification at the secondary level have enrolled and used their projects/experiences to develop modules for use in teaching. (Texas requires a major in the discipline for secondary certification.) Those PETE students who qualify for the Honors Program receive honors credit on a contract basis. One group of students conducted a study of tide differentials in relation to the position of the moon and developed a cooperative learning teaching module to be used at the secondary level to explain how the moon affects the tide movements on earth. At the end of the semester, they were required to make a public presentation using the module they developed.

At the IMRS, another group examined arthropod diversity under fallen Yucca logs. A PETE student in this group developed a teaching unit on arthropods for elementary students in grades 3-4. The module was written so students would learn about the arthropods' structure and about some of their habits. Basic taxonomy and characteristics were included and some examples studied were spiders, beetles, grasshoppers, butterflies, houseflies, centipedes, and lobsters. To make the unit cross-curricular, and at the same time more interactive, the students were to help write a story about an arthropod. As a model, the class read Eric Carle's *The Very Hungry Caterpillar*. The unit was designed to be completed in four days with a quiz on the third day and a collaborative writing activity on the final day.

Students in these field courses receive multiple benefits. Not only can they earn Honors credit for development of teaching modules that they can use in a classroom setting, but they participate in an experiential and cooperative learning activity as well. Other opportunities for students to earn Honors credit while participating in the PETE Program have included developing teaching modules based on their experiences while interning at the El Paso Zoo, The Centennial Museum on the University campus (a museum of cultural and natural history that has supported pre- and in-service K-12

MAYBERRY AND BRISTOL

teacher workshops) and the Franklin Mountains State Park (the largest urban park in the United States).

At a large public institution such as UTEP, where Honors courses *per se* are mostly limited to general requirements like English, history, political science, etc., capitalizing on the opportunities provided by the PETE Program has allowed Honors students seeking teacher certification to participate fully in the Honors Program and, through contracting, earn required credits towards the University Honors Degree or Certificate.

The authors may be contacted at:

Department of Biological Sciences
University of Texas at El Paso
El Paso, TX 79968-0519