FY 2001

Higher Education
Hispanic-Serving Institutions
Education Grants Program

Description of Funded Projects

Higher Education Programs
Science and Education Resources Development
Cooperative State Research, Education, and
Extension Service
U.S. Department of Agriculture
Washington, D.C.

Proposal Number: 2001-03182 Lead Institution: University of Puerto Rico - Mayaguez

Grant Number: 2001-38422-11020 Award Amount: $ 148,445
Lead Project Director: Dr. Raul E. Macchiavelli Project Duration: 2 years

Agriculture and natural resources also benefit from knowledge of the language and methods of biometry. Since recruiting a biometrician five years ago, the Department has been able to begin to expand its offerings in the area of biometry. We have identified three areas related to biometry that need strengthening in order to continue to attract and retain outstanding students in the agricultural sciences: (1) exposure of undergraduate students to biometrical concepts and computing, (2) preparation of faculty for application of biometrical reasoning to their area of discipline, and (3) biometrical computing facilities. Our undergraduate students typically have little exposure to research and "real-world" experiences. Thus, they see little need to enroll in courses that could help them obtain proficiency in biometrical reasoning and interpretation. Many faculty in the agricultural and related biological sciences, both at Mayaguez and other institutions in Puerto Rico, have either little or no training in biometry, or received their training before the wide-spread use of personal computers.

Therefore, our specific objectives are to (1) Improve the quality of biometrical training for undergraduate and graduate students in agriculture, (2) Increase the number of college teachers incorporating statistical thinking in their courses and research and (3) Establish a computing laboratory for classroom instruction, research projects, and workshops. Over the two years of the project 10 outstanding CAS undergraduates (5 each year) will enroll in a series of courses related to biometry and be involved in original research with a mentor that will allow them hands-on experience in applying biometrical concepts. College teachers (in agriculture and related biological sciences) from UPR-Mayaguez and from other institutions on the island) will be invited to participate in two-day workshops aimed at enhancing their capabilities in applying biometrical concepts in their discipline and improving biometrical computing skills. Two workshops will be offered each year, with room for a total of 60 participants over two years.

Finally, a biometrical computer laboratory will be established that will allow the first two objectives to be carried out and to provide for future needs of the biometry program in the department in the area of undergraduate and graduate teaching and research. The new materials created for the undergraduate course and the workshops will be made available on a web page.

Proposal Number: 2001-03193 Lead Institution: Texas A&M University - Kingsville
Grant Number: 2001-38422-10944 Award Amount: $ 299,730

Lead Project Director: Dr. Bhimanagouda S. Patil Project Duration: 3 years

Collaborative Initiative to Attract Underrepresented Students to Agricultural and Food Science Careers. The overall goals of this program are to attract and support the underrepresented Hispanic students from the lower Rio Grande Valley and other south Texas communities through a comprehensive, multifaceted and culturally relevant educational program. Our focus is to attract students by arranging faculty-student-industry conferences and teaching four courses through Compressed Video Technology (CVT) and Web-based technology (asynchronous). The courses offered will enable Hispanic youth to consider careers that deal with protection and conservation of the environment within the scope of agriculture, fiber and natural resources management. The specific objectives of this project are: 1) to attract 250 underrepresented students to build awareness of careers in FAS, to take courses and assist in their transfer to TAMUK, 2) to provide hands-on research experiences for 24 students through targeted activities with the selected faculty mentors, 3) to strengthen faculty teaching skills in distance education and Web-based technology, 4) to prepare curricular materials for CVT and web-based courses in subtropical and tropical horticulture as well as biochemistry, 5) to collaboratively develop the course materials in conventional printed form and supporting/reference material on CD-ROM, 6) to offer courses, revise and finalize the course content using conventional, distance education, and Web-based technologies, and 7), to offer a study tour and to demonstrate current advances in subtropical and tropical horticulture.

The enrollment of Hispanic students at TAMUK, UTPA, STCC, and TSTC ranges from 70-95%. This project will develop: 1) a model for recruiting and retaining students through courses to be adapted by other HSI's, 2) a unique educational approach for the interdisciplinary courses which will maximize program quality and eliminate duplication of efforts, and 3) unique educational videotapes, CD ROM, and a home page on biotechnology, cultivation and health benefits of fruit crops.

The project will use both formative and summative evaluation methodologies. We will assess the project's achievements and roadblocks at regular intervals throughout the funding period. At the end of each year and at the project's conclusion we will measure the degree to which each objective has been met. By that time, the courses will be institutionalized and the summer scholarships will be funded through industry contributions.

Dissemination plans include: 1) Web-based technology to provide ongoing support for classroom instruction, to provide information to the public, to promote visibility of the project among peer-professional and to develop an information exchange site for the project collaborators, 2) Syllabi, course schedules, slide sets, and lecture notes will be placed on the web site for student downloading and utilization, and 3) presentations and publications including 2004 Hispanic Association of Colleges and Universities Conference and other professional society meetings and workshops.

Proposal Number: 2001-03187 Lead Institution: New Mexico State University
Grant Number: 2001-38422-10945 Award Amount: $ 147,406

Lead Project Director: Dr. Marisa M. Wall Project Duration: 3 years

The Oasis Food Guild - A Student-Managed Project for Community Supported Agriculture in Arid Lands. The Oasis Food Guild provides an environment for student experiential earning in sustainable agriculture in an arid climate by establishing and operating a student-managed diversified, fresh vegetable and herb garden. This project will complement course-based undergraduate and graduate programs, in Horticulture, Agronomy, Agricultural Economics, and Agricultural Business. Students will have an on-farm opportunity to implement the practical and theoretical knowledge learned in classes.

Through the Oasis Food Guild, students will learn to integrate crop production methods with sound business decisions and environmental stewardship. Students will gain experience in the entire cropping cycle, from financial business planning, to soil preparation and plant propagation, irrigation and fertility management, harvesting, post-harvest handling, and marketing. Students participating in the Oasis Food Guild will develop skills in team management, communication, and community outreach. Further goals are to develop faculty research projects associated with the garden; to link instructional labs from a wide range of agricultural courses to the garden; to make the project self-sustaining; and to promote the project within the state and region as a model for teaching sustainable production in an arid climate. Student recruitment and retention will be improved because the project will attract more Hispanic students to the fields of horticulture, agronomy and agricultural business and will inspire our current students to complete their degrees. Minority students returning to rural communities will have new skills for economic development.

Through the Oasis Food Guild, students will gain a better understanding of intensive horticultural production and post-harvest handling, consumer behavior and marketing, the link between field problems and researchable question, and the need to work closely and effectively with experts from various disciplines. Students will make the connection between classroom knowledge and the implementation of that knowledge through experiential learning and community outreach. Project results will be shared through a web site, press releases, TV and radio broadcasts, publication, field days, and presentations at professional meetings.

Proposal Number: 2001-03487 Lead Institution: University of the Incarnate Word
Grant Number: 2001-38422-11179 Award Amount $ 149,730

Lead Project Director: Dr. Joseph C. Bonilla Project Duration: 2 years

Career Opportunities in Community Development: Food & Apparel Recovery. Despite the incredible bounty of agricultural production in the United States, one of our most serious health problems is hunger. In the past year, there has been an average 17% jump in the demand for emergency food (U.S. Conference of Mayor survey, December, 2000). San Antonio alone had a 11% increase in requests for emergency food. Because of this growth, non-profit agencies and programs such as the San Antonio Food Bank, Christian Assistance Ministries, and others are an increasingly important part of the growing non-profit sector of our community.

As noted in USDA's "Citizen's Guide to Food Recovery," up to one-fifth of food in the U.S. goes to waste annually, with an estimated 130 lbs. of food per person ending up in landfills. The annual value of this lost food is estimated at around $31 billion, and 49 million people could have been fed by those lost resources. Food recovery, therefore, is perhaps the most creative, efficient way to help reduce hunger in America. It supplements Federal food assistance programs by making better use of a food source that already exists. USDA is working with groups such as Foodchain and Second Harvest to lead a national effort to coordinate public and private projects to rescue the millions of pounds of healthful, uneaten food in this country that would otherwise have been thrown away every year even as millions of Americans go hungry. Locally, University of the incarnate Word will make a difference, too, by preparing students to enter the non-profit sector to manage and establish food and apparel recovery and distribution programs that serve the local and regional communities.

The program goal is to develop a minor degree program to train UIW students to work in non-profit public management programs that focus on food gleaning and recovery, food distribution and safety, and apparel recovery. The proposed, innovative program will benefit UIW students, the San Antonio, Texas, regional, and national communities, and the University of the Incarnate Word. These objectives will be implemented to fulfill this goal:

A) Program Development: Crate a 20-hour degree minor that links courses in Nutrition, Business Administration, and Fashion Management programs in an innovative, multidisciplinary approach to non-profit management that is available for all students. Courses will be collaboratively taught and cross-listed in the Business Administration and Nutrition degree programs;

B) Student Recruitment and Retention: Encourage, recruit, and solicit scholarship and funding support to retain under-represented minority students to pursue post-secondary education and prepare them academically in the critically important field of non-profit management (Target numbers: at least 8 students in Year One, and 12 students in Year Two);

C) Community Service and Networking: Capitalize on the strengths of the San Antonio non-profit community network to improve student access to and training in non-profit management.

Lead Projector: Dr. Mildred P. Lovato Project Duration: 2 years

PROYECTO ADOBE: Providing Building Blocks For Growth (The Adobe Project). Two New Mexico Hispanic-Serving Institutions, Albuquerque Technical Vocational Institute (a community college), and the University of New Mexico are collaborating with the City of Albuquerque's Continuation School, an alternative school program for high school youth who have been suspended or expelled, and Rainmakers, a non-profit organization, to implement Proyecto Adobe (The Adobe Project).

The overall goal of the project is to increase retention, high school graduation, and college enrollment rates of Continuation School students. This goal will be met with experiential learning opportunities in food and agriculture sciences topics, concurrent enrollment, focused career exploration, mentoring, and transition support. Other results will be to increase motivation, self-confidence, and leadership skills. A long-term result will be a change in policy at the public school level that will lead to better support for at-risk youth and a model collaborative project.

Furthermore, college students involved as mentors and ambassadors will benefit from working with youth. They will gain experience in leadership, team work, meeting project timelines and objectives, and youth and family advocacy. A third result is increased enrollment in TVI's horticulture, landscape irrigation, and soil science classes developed with USDA funding.

The objectives are to 1) increase retention and high school graduation rates among 30 Continuation School students; 2) provide opportunities for career exploration related to food, agriculture, natural resources, and other fields; 3) stimulate interest in higher education through experiential learning opportunities in horticulture and landscaping and assisting with college registration and financial aid; 4) monitor project outcomes; and 5) bring students' communities together to form a support network and gain continuation support; and 6) influence policy change within the public school system, TVI, and UNM so support for all students is improved.

TVI will conduct career exploration and develop concurrent enrollment agreements so participants will get high school and college credit in TVI's ag-related programs. UNM's El Centro de la Raza will provide mentoring and transition support, and Rainmakers will work with TVI faculty to develop hands-on field experiences for participants. The partners will effectively link support networks so students can more easily navigate through the entire educational continuum of high school to community college or university, then to the university to complete a four-year degree. The project directors will disseminate the model through the Hispanic Association of Colleges and Universities, through internal and external publications, a brochure, and a project notebook made available to other HSIs in the region.

TVI, a college with nearly 40% Hispanic students, is ideally situated to support the project. Overall, 96% of TVI graduates seeking jobs become employed in their field. The environmental technology program, where the agriculture classes are housed, has 100% placement. So if Continuation School students can complete a program, they are set to transfer or get a job-and because of their mentors, academic skill development, and exposure to the university, they will be well-situated to do either. Proyecto Adobe is an innovative project addressing the needs of an audience too often forgotten or ignored-Hispanic high school youth who too often drop out.

Proposal Number: 2001-03198 Lead Institution: West Hills Community College
Grant Number: 2001-38422-11178 Award Amount: $ 150,000
Lead Project Director: Dr. Bob Holmes Project Duration: 1 year

Collaboratory / Ag Sciences. The purpose of this grant is to fund the scientific instrumentation for the new, award-winning collaboratory located at West Hills Community College. The program will provide students hands-on, industry-relevant education, leading to employment in modern agriculture, soil analysis or food safety fields. In the program, students will take courses using current technologies supporting agricultural science. Part of the grant will fund new scientific instrumentation for the collaboratory. This lab, along with West Hills Community College Ag-Science courses will provide the hands-on learning opportunities for the students. Scientific coursework will be supplemented with Ag Business, General Education and Crop Science production.

Synopsis of the Plan: Existing cooperative associations with the local high schools and California State University, Fresno (CSUF) are vital to the success of the project. As a result of the grant, West Hills Community College will furnish their new collaboratory at Lemoore and Coalinga with a basic set of moderate cost assay equipment. Ag/Science courses will be developed that will directly link to the West Hills College Ag program development. Students who may not normally consider a career in agriculture or who think Ag/Science is not for them, will be exposed to the hands-on, Ag focused technology through chemistry offerings. Once students work with actual field/lab assay protocols, many will want to attend university to advance their careers.

Strengthening Higher education in Food and Agricultural Sciences: The program is industry driven. The Ag industry faces rising costs of equipment, rapidly changing technology, and unskilled employee pool, and increasing insurance premiums. Employers desperately need to hire capable, experienced, and safe employees for the future. The need to address practical farming/crop issues through the use of science is critical. Funding for this grant allows new instrumentation to teach introduction to field assay and create a lab option for community service assay protocols. Thus, students learn practical applications of science and its relevance to the largest industry in the San Joaquin Valley, Agriculture.

Plans for Disseminating Project Results: The West Hills Community College Project Directors will speak at state and regional conferences and Ag Field Days. A Web page for the college will be developed highlighting the new program and career opportunities. West Hills College will share this program with four-year institutions where our students transfer, as well as San Joaquin Valley high schools.

Proposal Number: 2001-03183 Lead Institution: Texas A&M University - Corpus Christi

Grant Number: 2001-38422-10973 Award Amount: $ 149,926
Lead Project Director: Dr. Kirk Camarata Project Duration: 3 years

Genomics-Based Curriculum Development for HSIs in South Texas. Texas A&M University-Corpus Christi seeks to train under-represented students in leading-edge genomics technologies as a means to attract more students into agriculture-related careers and to reduce attrition from science programs.

Recombinant DNA technology and computer automation are revolutionizing agriculture, particularly in the areas of genomics and bioinformatics. However, agriculture is generally under-considered as a career choice by science majors and minorities are under-represented in areas using advanced technologies. These needs will be addressed by creating new opportunities at HSIs to train students in agriculture-related genomics and bioinformatics. The project entitled "Genomics-based curriculum development and integration for HSIs in South Texas" will integrate the USDA target areas of Curricula Design and Resource Development, Faculty Preparation, Instruction Delivery Systems, Experiential Learning for Students, and Student Retention into one model. A partnership with the NSF-funded Texas Collaborative for excellence in Teacher Preparation (TxCETP) will facilitate collaboration between the faculty of South Texas SHIs and other minority-serving universities throughout Texas.

Six specific goals represent assessable milestones en route to our objectives: 1) Sponsor an agricultural genomics workshop for enhancement of faculty at Texas HSIs; 2) collaborate with workshop participants through the TxCETP listserve and web site to design, implement and improve curricula by integrating genomics modules; 3) acquire library and computer resources to support inquiry and classroom learning activities; 4) host a follow-up workshop to evaluate the curricula and to initiate continuation plans; 5) involve undergraduates in research throughout their entire college experience; and 6) develop laboratory facilities to support experiential learning.

Project results consist of genomics-based courses or course-modules that can be integrated into existing courses from freshman through senior level. Results will be disseminated by posting syllabi on the TxCETP web site (http://sci.tamucc.edu/txcetp) and through student presentations of their research at scientific meetings.

Proposal Number: 2001-03481 Lead Institution: New Mexico State University

Grant Number: 2001-38422-10950 Award Amount: $ 150,000
Lead Project Director: Dr. Cynda Clary Project Duration: 2 years

The Enhanced Learning Through Research Program (ELTRP). New Mexico State University (NMSU) has designed an innovative pilot program entitled that will advance the development of undergraduate research education by using the NMSU Agricultural experiment Station Science Centers located throughout New Mexico. The proposed program will recruit college sophomore, junior, and senior students interested in research and provide them with a research opportunity in agricultural sciences, engineering, and technology, at the existing off-campus agricultural science centers. The national workforce in the scientific and technological areas continues to reach retirement age and eligibility. The next generation of scientists, professionals, and technical staff need to be recruited to provide a pool of trained professionals for the U.S. scientific work force. The focus of this program will be to identify, recruit, and train undergraduate students in the emerging and priority areas of research in the food, agricultural, natural resource, human resource, and related areas. Special emphasis will be placed on recruitment of minority and women scientists and professionals, and their training at Minority Serving Institutions (MSIs).

The intent of the pilot program is to increase the participation of undergraduate students in research. Many students need summer jobs in the private sector in order to return to school in the fall semester. This proposed pilot program will allow the students with limited resources to complete their research experience and still be able to continue their education in subsequent semesters.

The proposed program will provide experiential learning programs to students early in their careers thus bringing future scientists, engineers, and students into the mainstream of research activity. We anticipate that this innovative approach focusing on a higher education program using off-campus agricultural science centers and focusing on undergraduate research training can serve as a model for future national efforts.

NMSU is the land-grant university among six public, four-year institutions of higher education in New Mexico. NMSU is rated a Carnegie I Research institution, classified as a minority institution under Title III of the Higher Education act, is qualified as a member of the Hispanic Association of Colleges and Universities, and it has been designated as a research university. The university and agricultural science centers will contribute faculty time to work with students, mentor the participants, provide housing facilities, and computer and other communications needs as in-kind contributions form the university.

Proposal Number: 2001-03180 Lead Institution: Lehman College, CUNY
Grant Number: 2001-38422-10949 Award Amount: $ 300,000

Lead Project Director: Dr. Edward J. Kennelly Project Duration: 2 years

Bridging the Digital Divide in the Bronx Through a Plant Biology Partnership. This is a joint project proposal between Lehman College of the City University of New York and the New York Botanical Garden (NYBG), a world-renowned research center since 96. The two institutions both have strong plant sciences programs and are located about one mile apart in the Bronx, New York. The purpose of this proposal is to strengthen the linkages between the institutions through undergraduate educational and research opportunities, and by improvement of electronic educational resources. Specifically, we plan to do the following:

- Create a computer laboratory at Lehman to give undergraduate students access to research equipment that is currently not available to them.
- Create a state-of-the art geographical information systems (GIS) laboratory at NYBG to be used by NYBG graduate students and Lehman undergraduate. The GIS Laboratory will be incorporated into Lehman and NYBG curricula.

The program is designed so students will receive enhanced training in plant sciences with modern equipment. Selected students will conduct semester-long internships at NYBG, and use the skills they have learned in class in a research environment. Lehman students will also benefit from the proposed GIS laboratory at NYBG through research projects and seminars. The program will allow students at the undergraduate and graduate levels to have access to botanical resources that are currently not available at either Lehman College or NYBG.

Lehman will serve as the lead institution for this proposal. In the prosed project, we plan to strengthen Lehman's ties with NYBG. Lehman is confident that the proposed project can serve as a model for other Hispanic-Serving Institutions to strengthen their undergraduate programs and encourage more students to attend graduate school or seek research careers by forming partnerships with local private institutions. Through the proposed program, NYBG will not only gain advanced technology, but also closer ties to its growing Hispanic community.

Proposal Number: 2001-03196 Lead Institution: Inter-American University of Puerto Rico
Grant Number: 2001-38422-11054 Award Amount: $ 145,720
Lead Project Director: Dr. Juan Berrios Project Duration: 2 years

Biotechnology: Agricultural and Environmental Emphasis Project. The goal of this proposal is to promote and strengthen the science curriculum of the Biology Program at the Barranquitas Campus of the Inter-American University of Puerto Rico (IAUPR-BC). This goal will be accomplished by means of curriculum improvement, faculty development, and enhancement of instructional delivery systems, provide laboratory assistant training to students, and acquisition of laboratory equipment. Curriculum improvement will emphasize on the integration of knowledge and skills from Biotechnology to the Biology curriculum. Biotechnology, as a new course, will be created and integrated to the Bachelor in Science with concentration in Biology.

This course will focus on applications to human health, agriculture, and environment. Molecular and biotechnological advances will be applied to many issues related to the production of foods, nutrition, natural resources and contamination. The biotechnology laboratory will give students extensive "hands-on" experience with emerging laboratory techniques. Students will also learn how to keep an industry standard laboratory notebook and use computers to find information and analyze data. Techniques for working with microorganisms, recombinant DNA, gene expression, recombinant protein expression, and bioinformatics is going to be introduced as different aspects of research involved in developing a product. Modern equipment and instrumentation will be acquired in order to provide a real learning experience. Recombinant DNA equipment instrumentation, such as centrifuge electrophoresis, freezer, electroporator, and liquid chromatography will be used in the course laboratory activities. By means of selected laboratory activities students will apply the basic recombinant DNA methodology and techniques to practical research situations. Faculty members from the Biology Program will be trained on the basic use of the acquired equipment instrumentation. Information technology will constitute an essential learning tool in this project. Access to biological sequence and structure databases via Internet is available for public use. Students and faculty will use these powerful bioinformatics tools to organize the molecular components of biotechnology. Information technology will be used extensively to deliver classes, conferences, and discussion sessions. A group of students will be trained as laboratory assistants. Biotechnology experience will be supplemented with private industry visits and visiting speakers.

Proposal Number: 2001-03486 Lead Institution: Inter-American University of Puerto Rico
Grant Number: 2001-38422-10972 Award Amount: $ 149,726
Lead Project Director: Dr. Ilse Sanders Project Duration: 2 years

A Program to develop a Geographic Information System for Environmental Sciences. This project will take place on the San German campus of Inter-American University of Puerto Rico, a campus serving 5,455 students in southwestern Puerto Rico. The San German campus offers a bachelor's degree in environmental sciences, initiated in 1992, and a master's degree in environmental sciences, implemented in 1997. Currently there is a total of 123 students in the baccalaureate degree and master's degree programs in environmental sciences.

The stated project goal is to strengthen the ability of the San German campus to carry out a program at the bachelor's and master's degree levels in the environmental sciences that will attract, retain, and graduate outstanding students capable of enhancing the Nation's food and agricultural scientific and professional work force. The project objectives seek to increase the number of Hispanic students who are attracted to and enter the food and agricultural scientific and professional work force, to increase the capability of the San German campus to offer a quality program at the undergraduate and graduate students, and especially women, who complete undergraduate and graduate degrees in environmental sciences.

The proposed project seeks to develop a Geographic Information System (GIS) facility to be used in both the undergraduate and graduate classroom, laboratory and research programs. Both the graduate and undergraduate programs place an emphasis on the analysis of water, soils and the atmosphere for contaminants as well as prevention strategies. The equipment requested will permit the carrying out of experiments, procedures and research which can not be carried out at present. In addition, the GIS facility will provide "service to the community' through a resource to serv area environmental needs. The GIS facility will be used principally in biology and environmental chemistry courses, two areas in which environmental science majors carry out much laboratory work and research. The GIS information system can be used to study distribution patterns in the environment, properties or characteristics of environmental parameters, and the origin, movement and impact of environmental pollutants.

The campus is the site of the Center for Education, Conservation, and Interpretation of the Environment (CECIA- the Spanish acronym). This institution-wide organization has its main offices and laboratory on campus; a working relationship exists between CECIA and the campus although the degree program is administratively located in the biology department.

The project outcomes include strengthening the training personnel in environmental issues related to use and misuse of resources in agriculture in western Puerto Rico and broadening the experience of undergraduate graduate students in environmental sciences. The project will also provide a facility to map the movement of environmental pollutants, maintain a data bank and provide seminars, conferences and workshops for persons currently employed in the environmental sciences and who need additional training, refresher courses, or access to new technologies such as GIS. This project will affect degree programs, serve to improve environmental awareness, train and/or retrain personnel in environmental sciences, and provides additional new services to the community on environmental related issues.

Proposal Number: 2001-03185 Lead Institution: Texas A&M University - Kingsville
Grant Number: 2001-38422-11053 Award Amount: $ 299,969
Lead Project Director: Dr. Eliezer S. Louzada Project Duration: 3 years

Hands-on Research, Bridges to Graduate Studies in Agricultural Biotechnology.

Hispanics are the fastest growing segment of the U.S. population projected to comprise 25% of its total by the year 2030. The percentage of growth from 1995 to 2030 for the school-age Hispanic population is projected to be 11%, while the White non-Hispanic population is expected to decrease by 16%. However, the level of education achievement and employment participation by the Hispanic population is very low compared to the non-Hispanic. In science careers the participation of Hispanic is also low. In 1997, from the total number of scientists employed in all science areas, only 3.5% were Hispanic, and in Agricultural and Food Science only 2.5%. To prevent the educational gap between Hispanic and non-Hispanics from continuing to grow and to increase the participation Hispanics in science careers, it is necessary more investment in all areas of education in communities largely populated by this minority group.

Texas A&M University - Kingsville Citrus Center (TAMUK-CC) and the University of Texas at Brownsville and Texas Southmost College (UTB/TSC) are located at the Lower Rio Grande Valley, in an area highly populated by Hispanics (91%). About four years ago TAMUK started to redirect the activities of the Citrus Center to strengthen the graduate program to better serve the local community. The number of graduate student enrollment increased from 2 in 1997 to 13 in 2001, however, only 16% are from the local community. Part of the problem could be that in most cases the student visualized agricultural science as farming, and not as a high tech science. To address the problem, the Citrus Center has been promoting scientific tours from elementary to high school and community colleges.

Additionally, the Citrus Center had 15 high School students working in the summer programs in its different laboratories, and promoted the second "Graduate School Night" last February 8, 2001. A newly funded project involving the Genetic Laboratory of UTB/TSC, directed by Dr. Allison Abell and the Biotechnology Laboratories at the Citrus Center, directed by Dr. Eliezer Louzada, providing hands-on research experiences for 15 undergraduate students over a period of seven semesters. Each of the students will be working in a research project during the whole semester, and they will be co-authors in manuscripts produced from their research. Additionally, we will be promoting tours to the labs on the occasions when the students are having research experience which will further attract other of their peers. Our objective is to make a bridge between undergradaute and graduate studies.

Proposal Number: 2001-03186 Lead Institution: Porterville College
Grant Number: 2001-38422-10939 Award Amount: $ 146,070
Lead Project Director: Dr. Linda Prentiss Project Duration: 2 years

Tulare County Agri-Business Academy and Job Placement Service. Porterville College

(PC) is a 2-year community college located in Tulare County, the fertile southern area of the San Joaquin Valley in central California. PC proposes an essential project, The Tulare County Agri-Business Academy & Job Placement Service, to complement and enhance our successful agriculture curriculum building project which was funded by 1997 and 1999 USDA-HSI grants. The Tulare County Agri-Business Academy proposes:

- the development of an intensive experiential learning component to compliment PC's new agriculture curriculum (Target A)
- a highly developed agri-business focused job placement program
- a sophisticated agri-business focused job placement program
- the addition of a fully integrated curriculum to support (Target B)
- the transition for students from high school to community college
- the transition for students from general education classes to transfer level curriculum
- the transition for students from community college to the university
- the addition of a senior agriculture specialist for agri-business students (Target C)
- quality advising to support student recruitment, retention, graduation and job placement

Objectives and activities designed under each of the targeted areas will increase Hispanic representation in the Agricultural Sciences in skilled and professional careers, specifically within job markets in this agriculturally rich area of central California. This project requests funds to develop a sophisticated agri-business academy complete with both an experiential learning program and a focused job placement program. The staff will be well versed in the complexities of balancing the essential educational component with an equally essential experiential learning component. Both steps are equally important to move students toward emotional maturity and economic security to become an integral part of the Tulare County agricultural community.

The need for an Agri-business Academy is a direct response to the interest and support shown by local agri-business managers, soils laboratory owners, parents, students, the University of California Extension, the Sequoia National Forest office, the Tule Indian Reservation and the nearby USDA service Center. Each of these look to PC as the higher education provider to develop an educated bi-lingual work force to fulfill specialized occupation needs with acknowledge of agriculture and business.

Having capitalized on the prior support of USDA in developing an agriculture curriculum, PC transfers students to the four main California State Universities and University of California campuses. To enhance the opportunity for Hispanic and other students in achieving occupational security or transfer with the maximum articulated credits, a demonstrated understanding of the work needed to succeed in agri-business is critical to their future success.

Proposal Number: 2001-03188 Lead Institution: California State University - Fresno
Grant Number: 2001-38422-10975 Award Amount: $ 271,414
Lead Project Director: Dr. Dennis Nef Project Duration: years

Agricultural Education Curriculum Innovation. California State University, Fresno, an

Hispanic-Serving Institution serving the Central San Joaquin Valley, the hear and geographic center of "California Heartland" - the largest agricultural producing center in the world, proposes a unique curriculum development and student recruitment program which partners the College of Agricultural Sciences and Technology with the School of Education and Human Development. Expanding beyond the usual ag Education courses available for students interested in teaching agriculture at the secondary level, this project develops ag-related pre-service and in-service courses for elementary (multiple subjects) school teachers.

This 3-year project strives to reach the overall goal of increasing minority student enrollments in programs in the College of Agricultural Sciences and Technology by attaining the more immediate goal of educating school children in Fresno County Schools (grades K-8) about the importance of agriculture to our society and the many educational and career opportunities available within the industry. This will be accomplished through development of curriculum to train university teacher education students to integrate ag-related programs and materials into their classrooms across all content areas. A new course will be developed for the Ag Education option within the College of Ag and modules will be developed and integrated into the Multiple Subjects options of the teacher education program. Elementary school administrators will receive special training about his new approach to teaching and the special offerings being developed in both academic programs, and student recruitment for the new programs will extend to five community colleges (all Hispanic-Serving Institutions) within the region.

The collaboration between the College of Agricultural sciences and Technology and the School of Education and Human Development is a unique partnering of academic units at the university level to promote ag literacy in the Valley, a partnership which will extend far beyond the life of the grant. The collaboration with the Fresno County Office of Education further enhances the prospects for this project to be a successful endeavor and a model program for other universities to replicate.

Proposal Number: 2001-03179 Lead Institution: Colegio Universitario del Este
Grant Number: 2001-38422-11021 Award Amount: $ 146,070
Lead Project Director: Dr. Wilfredo Colon Guasp Project Duration: 2 years

Development of an Executive Agribusiness Master's Program Through Distance Learning. This is a joint proposal submitted by the Colegio Universitario del Este (CUE), a

private non-profit Hispanic-Serving Institution of higher education and part of the Ana G. Mendez University System (AGMUS) in Puerto Rico, and the Ohio State University (OSU), department of Agricultural, Environmental, and Development Economics in Columbus, Ohio. These two institutions, through a previous USDA Hispanic-Serving Institution Education Grant have been successful in developing at CUE a new Agricultural Sciences Bachelor's Degree with two majors: Agribusiness Management and Food Business Management.

This proposal for the Development of an Executive Agribusiness Masters Program Through Distance Learning builds on this new Program and on a unique set of circumstances, opportunities, and needs at both CUE and in food and agricultural related businesses in Puerto Rico. It targets executives in a growing number of agriculturally related businesses that are presently not being served by existing programs. It is tailored to the expressed needs and time availability of executives currently fully employed in businesses throughout the island. It takes advantage of a multimedia, distance learning delivery system at CUE and AGMS with numerous delivery sites located throughout the island. It builds on the new undergraduate programs in Agribusiness Management and Food Business Management at CUE. It contributes a graduate program to the goal of transforming CUE from a college to a university. Finally, it is partnered and backtopped by an established Agribusiness Management Program and faculty at the Ohio State University.

Proposal Number: 2001-03178 Lead Institution: University of Puerto Rico - Mayaguez
Grant Number: 2001-38422-10971 Award Amount: $ 113,629
Lead Project Director: Dr. Mildred Chaparro Project Duration: 1 year

Creation of a Food Micriobiology Laboratory for the Food Science Program at UPR. Under this initiative we are proposing the creation of a laboratory for food microbiology, within the facilities of the Food Science and Technology Program of the University of Puerto Rico -

Mayaguez Campus. The establishment of the proposed laboratory, will provide undergraduate students with facilities in which thy can develop laboratory skills in the area of food microbiology. It will also provide students with adequate laboratory facilities for conducting undergraduate research projects as part of their academic training in food microbiology.

Proposal Number: 2001-03190 Lead Institution: California State University - Los Angeles
Grant Number: 2001-38422-10938 Award Amount: $ 150,000
Lead Project Director: Dr. Laura Calderon Project Duration: 2 years

Expansion of the nutritional Science Curriculum and Recruitment Plan. This project, submitted by California State university, Los Angeles (Cal State, LA), will provide for an expansion of the existing Nutritional Science curriculum into areas of foodservice and food technology. The primary focus will be to add new courses including a ServSafe "Train the

Trainer" course, that will enable students, many who are low-income Hispanics, to pursue career paths in the food technology and foodservice areas. There is an identified need for the Nutritional Science area to include career paths for students who are not accepted into the Coordinated Dietetics Program (CDP), due to size limitations, to pursue other career paths. The CSLA Nutritional Science faculty will collaborate with foodservice industry personnel to build partnerships, utilize resources and seek expert advice and guidance for the expansion of the programs.

Food safety and consumer health are among the most pressing concerns for the foodservice industry. According to WHO (World Health Organization), illness from contaminated food is one of the most widespread health problems in the contemporary world. The goal is to develop foodservice courses that will ultimately result in at least one vocational certificate program.

A secondary thrust of this project is to recruit more students into these newly expanded programs from local high schools and community colleges (also Hispanic-Serving). Vehicles that will be utilized to this end include, a high school curriculum developed in the area of Food and nutritional Science, an existing high school nutrition and health club, high school science and health teachers, CSLA outreach workshops, scholarships at the high school and community college levels, articulation agreements between community colleges and CSLA, and integration of existing community college foodservice/food technology programs into the CSLA programs. These activities and resulting programs should increase the recruitment and retention of Hispanic students into the disciplines of food and nutritional sciences.