

FY 1999

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: 9904365

Lead Institution: Colegio Universitario del Este

Grant Number: 99-38422-8136

Award Amount: \$298,690

Lead Project Director: Dr. Rodulio Caudales Project Duration: 2 years

Collaborative Development of an Agribusiness and Food System Management Program. The proposed project goal is to develop a bachelor degree Program in Science and agriculture (BSA) in Puerto Rico(PR) in the field of Food System Management (FSM) with a focus in the areas of Food Science and Technology and Agribusiness. The educational areas targeted by the project include designing a new curriculum, developing of educational materials, purchasing library resources, training faculty, recruiting and retention of students, and designing and implementing the instructional delivery system.

The achievement of this goal will require the integration of elements from both, the Business Administration Degree and the Food Science Degree. Courses to be integrated come from the Business Administration and Science & Technology Departments of Colegio Universitario del Este (CUE), part of the Ana G. Mendez University System, and the College of Food, Agricultural and Environmental Sciences at Ohio State University.

Food System Management programs are relatively new in the United States. The few that have been established come in offerings from Departments of agricultural Economics and Food Science and Technology, and Schools of Business to educate professionals with the

required skills to manage food-processing plants. Currently, there are no institutions in PR that combine all of these capabilities and that offer a bachelor's degree in either food science or food technology. We propose to form such a Program from CUE's Departments of Business Administration and of Science and Technology. They will receive considerable input from Ohio State University's Depts. of Ag, Environmental & Developmental Economics & Food Science & Technology.

Knowledge of food processing systems is required in order to guarantee safe, high quality food products and business skills in marketing, finance, accounting and resource management, and to successfully compete in these emerging areas. Thus, CUE commissioned a "Feasibility Study for the Establishment of a School of Agribusiness."

Successful implementation of this Program will strengthen Hispanic-Serving Institutions (HSI's) presence in America's education. It will provide students in PR with a new educational alternative attuned with the needs of the agricultural industry particularly in the area of FSM. This new Program will provide a cadre of professionals with the required knowledge and skills to either enter the job market or pursue graduate studies in the areas of food science or agribusiness, Inland and Mainland.

Educational components of the food management curriculum can be revised, modified and adapted to meet other industries within the agricultural and food science areas such as agricultural production, and hotel industry. Modules will be developed for professionals who seek training in the business area. Benefits derived from this project have the capability of transcending CUE and can affect other Hispanic students in PR and in the US.

Proposal Number: 9904356

Lead Institution: CaliforniaStateUniversity -Fresno

Grant Number: 99-38422-8121

Award Amount: \$299,934

Lead Project Director: Dr. Dennis L. Nef Project Duration: 3 years

Intersegmental Coordinated Outreach Program in Agricultural and Associated Professions. Among populations with limited exposure to higher education, barriers to enrollment have been overcome by specifically addressing six critical decision factors in outreach efforts: 1. Setting Realistic and Attainable Academic and Career Goals; 2. Determining Short-term and Long-term Income Potential; 3. Socially Relevant and Culturally Meaningful Careers; 4. Assessing Compatibility; 5. Evaluating Preparation - Academic and Personal Readiness; and 6. Maximizing Options by Identifying and Establishing Contingencies

This proposal arose out of discussions of an intersegmental consortium of K-12 school districts, a community college, and a state college formed to strategically address numerous current educational and related issues facing agriculture in the central San Joaquin Valley of California. It suggests development of a recruitment and admissions process which will

allow us to be more responsive to the six key decision factors identified above, and which more accurately mirrors the academic preparation and background possessed by a majority of contemporary agricultural science and related professionals in the field.

Results would include outreach and recruitment brochures, computer slide presentations, a special developed Website, and full program documentation including methodologies, participant characteristics and evaluation outcomes for dissemination purposes; five pre-freshman orientation modules, one for each of the five career clusters: production science; animal science and biotechnology; rural health, nutrition and family economics; agricultural business and industry; and rural sociology, demographic studies and human resource economics; three innovative Bridge Program designs individually suited to the unique characteristics of the participating community college and university yet all to be structured around an identical set of Career Clusters, career planning and academic planning goals and objectives (one two-year and two four-year institutional models-entering freshmen and transfer student- for purposes of dissemination and replication); and (up to) five new lower division course outlines (perhaps to be implemented as modular units to be included within extant general education or survey courses) representing each of the five elements in the core taxonomy offered for both agricultural majors and non-majors. It also uses a peer mentoring and tutoring program to improve retention.

The project would be overseen by a Coordinating Council formed from the intersegmental group above

Proposal Number: 9904357

Lead Institution: University of Puerto Rico - Mayaguez

Grant Number: 99-38422-8035

Award Amount: \$150,000

Lead Project Director: Dr. Nancy Cavallaro

Project Duration: 3 years

Instrumentation Laboratory to Enhance Education in Soils and Environmental Sciences. An interdisciplinary collaboration of scientists from the University of Puerto Rico-Mayaguez , Departments of Agronomy & Soils and Chemistry have identified key laboratory instruments which will provide an ability for cutting-edge laboratory experiences in the chemical analysis of soils, crops, food, water, and environmental materials related to environmental concerns. The curriculum of both colleges will be enhanced by the creation of a state of the art instrumentation laboratory to be used in Soil Chemistry and Mineralogy, Food Chemistry, and Environmental Chemistry related courses. This laboratory will enhance student and faculty development, and is essential for the two doctoral programs which are being developed in Soils (Agronomy & Soil Department) and Environmental Chemistry. It is also needed for the creation of a new graduate level course in Applied Instrumental Methods of Analysis for students in agricultural Sciences. Once in place, and after initial training of the project directors, workshops will be given for faculty, researchers and students in the University community.

The lack of research grade instrumentation for use in physical and agricultural sciences courses limits the ability of UPRM to pursue advanced research problems, properly train students in analytically oriented disciplines, and respond to needs of government and industry. Acquisition of the requested instruments will significantly expand the analytical and educational capabilities of UPRM, providing new opportunities for student research and training, and interactions between local business and academic communities. It will also enhance the ability of UPRM to compete for funds designated for graduate, undergraduate, and secondary school research and to participate in multi-institutional programs.

The instruments requested are the following: 1) a total element analyzer will be used to study the total carbon, nitrogen and sulfur content of soil, plant and environmental samples which would otherwise require tedious and less precise methods; 2) an instrument for particle size and electrophoretic mobility analysis of suspended particles will aid in the study of mechanisms and predictive models of soil erosion, crusting, and degradation, sedimentation, and colloid transport (including colloid mediated transport); 3) a microwave digestion system will speed up and simplify sample preparation while reducing the use of reagents which are expensive, dangerous, and may contaminate the environment; 4) a graphite furnace upgrade a new flame atomic absorption will allow rapid and precise determination of such common contaminant or problematic metals as lead and aluminum, while increasing sensitivity for other metal contaminants which are commonly analyzed by flame; 5) a new ultraviolet-visible spectrophotometer will enhance analytic capabilities in both inorganic and organic contaminants, while 6) a gas chromatograph-mass spectrometer and 7) high performance liquid chromatograph-mass spectrometer will enhance capabilities in the detection and identification of pesticides and their breakdown products, and other organic contaminants in food, soil, plants and water.

Proposal Number: 9904363

Lead Institution: Porterville College

Grant Number: 99-38422-8032

Award Amount: \$99,549

Lead Project Director: Dr. Linda Prentiss

Project Duration: 2 years

Tulare County Soils and Plant Science Initiative. The Tulare County Soils and Plant Science Initiative proposes: 1) the development of a comprehensive lower division soils and plant science curriculum to PC's new agriculture program of instruction; 2) the addition of a fully equipped modern soils and plant science laboratory to support: a) an articulated curriculum, b) scientific instrumentation for teaching, c) instruction delivery systems, d) student recruitment, retention and transfer, e) student experiential learning, f) the new campus greenhouse; 3) the first two semesters of soils and plant science faculty Objectives and activities designed under each of the targeted areas will increase Hispanic representation in the Agricultural Sciences in skilled and professional careers, specifically

in the agriculturally rich Tulare County area of central California. This project requests funds to develop transfer-level curriculum, purchase equipment, make minor renovations for safety standards, and to support the first two semesters' salary and benefits for faculty.

PC's surrounding service area produces row, field, orchard, forest and forage crops as well as dairy products and other livestock. The area is abundant in natural resources. Local students, parents, and employers have responded enthusiastically to our new agriculture program. The need for the Soils Laboratory in our program is a direct response to the interest and support shown by the surrounding area agri-business owners and managers, local soils laboratory owners, the Natural Resources Center of the Sequoia National Forest, and the nearby USDA Natural Resources Conservation branch. Each of these are looking to PC as the higher education provider to develop an educated bi-lingual work force to fulfill specialized occupation needs for a comprehensive knowledge about soils and plant science.

The local feeder high school district has a full secondary agriculture program. Local high school graduates who begin their college education at PC desire the opportunity to participate in a program of transfer level instruction. Also, PC transfers a number of students each semester to the three main California State Universities and University of California campuses which offer a specialized agriculture curriculum. A demonstrated understanding and laboratory experience with soils is critical to transfer programs of all baccalaureate level agriculture programs.

In order to enhance the opportunity for Hispanic and other students to achieve occupational security or transfer with the maximum number of articulated credits, it is the desire of PC to provide a full scope of agricultural science lower division course work. A soils and plant science curriculum and supporting laboratory is essential to complete that goal.

Proposal Number: 9904353

Lead Institution: Miami-Dade Community College

Grant Number: 98-38422-8137

Award Amount: \$150,000

Lead Project Director: Dr. Karen Dillman

Project Duration: 3 years

Veterinary Technology Program. In response to the veterinary community's call for greater educational opportunities in the veterinary-related technologies, Miami-Dade Community College is establishing the Veterinary Technology Program on the Medical Center Campus. Miami-Dade Community College is the largest community college in the United States, and the Medical Center Campus is a leader in the allied health technologies, graduating more students in allied health each year than any other educational institution in the country.

With the help of the USDA Hispanic-Serving Institutions Education Program, the College will offer an innovative two-year veterinary technology program that introduces students to cutting-edge technology and techniques, gives students the support they require to succeed in their education, and provides employers the educated employees they are demanding. Specific objectives for the program include: (1) To design an effective program curriculum that meets or exceeds the requirements of the State of Florida's curriculum framework and the national accreditation requirements for veterinary technology programs; (2) To equip program laboratories with the most appropriate and advanced scientific instrumentation and supplies as required by the national accreditation body and defined by national professional standards; (3) to recruit students from Hispanic communities and maintain an enrollment of Hispanic students comparable to other programs on the Medical Center Campus; (4) to provide support services in the form of academic tutoring or counseling to every student in the Veterinary Technology Program by the time each student graduates.

The grant period will be three years and will be directed by Ms. Karen Dillman. The first year of the grant will be dedicated to the design and development of the Veterinary Technology Program curriculum, equipping the program laboratory, and recruiting students. The program will enroll the first class of students at the beginning of the second year of the grant. Years two and three of the grant will focus on refining program curriculum and providing support to students through tutoring, the Student success Center, and mental health counseling to help them succeed. Recruitment efforts will also continue in years two and three.

The Vet Tech Program will address a significant educational need in South Florida and the entire state. Currently, there are only two veterinary technology programs in all of Florida, neither in South Florida. The demand for education in the veterinary technology field is high because the demand for qualified, well-educate veterinary assistants and technicians is high. The College will share information about the development of the Vet Tech Program with other academic institutions who either have a similar program or would like to start one. The College will also present at regional and national conferences such as the Veterinary Technician Educators Association

Proposal Number: 9904350

Lead Institution: Trinidad State Junior College

Grant Number: 99-38422-8031

Award Amount: \$148,229

Lead Project Director: Dr. Tony Romero

Project Duration: 2 years

"21st Century Farmers Through High Tech/High Touch Innovative Training.

In 1996 we began a new program in Aquaculture preparing students to work in the expanding fish production industry of Colorado's San Luis Valley. This is an excellent new industry to best utilize the valley's unique environment of deep aquifers, artesian hot springs, abundant solar and wind powered energy, and an eager, presently under utilized, low income workforce. We were successful in training students with 100% job placement in the field or entrance to a four-year aquaculture program. Now we want to reach back to the high schools to motivate and prepare more students for this, and our other farm and ranch programs. We want to continue to improve opportunities for these primarily Hispanic residents to become a prosperous part of agri-business.

We are training students in an innovative, experiential program designed to provide the student with technical skills to work in Aquaculture as well as skills to create their own aquafarm. We seek funding to provide curriculum improvement tools, and training and assistance to area high school science and math teachers for incorporating aquaculture preparation skills in their curriculum. We need to provide more access and motivation for low-income students, primarily Hispanic, to attend our intensive program while encouraging them to complete high school.

We have a unique aquafarm leased to us with a high production geo-thermal well providing us with a set of cascading fish ponds and tanks in which to raise fish in cold water, coolwater, and warmwater environments. We also protect the valuable wetlands of our area and its endangered crane species, as well as teaching our students good agri-business and environmental management skills. We also stress water conservation, multiple use of by growing terrestrial crops with the effluent from the fish farm. We will continue to provide scholarships and paid internships so that low income students can join other students in a hands-on learning environment, much like a medical internship and residency.

We will bring aquaculture instruction into the area high schools while providing more direct and motivational tools to improve basic science and math instruction through our curriculum

Proposal Number: 99004364

Lead Institution: University of New Mexico

Grant Number: 99-38422-8034

Award Amount: \$299,989

Lead Project Director: Dr. Nasir Ahmed

Project Duration: 3 years

New Mexico Coalition for Realizing Excellence in Agricultural Science Education. This proposal is a collaborative effort between the Department of Biology and the Biomedical Sciences Graduate Program at UNM. We will also partner with member institutions of

the New Mexico Coalition for Graduate study.

Our long range objective is to attract, retain and graduate outstanding students in the agricultural and food sciences. To accomplish this objective we propose to: (a) establish a Freshman Biology seminar, Explorations in Ethnobotany; (b) provide distance learning courses at the three Partner institutions including the above mentioned ethnobotany course and selected level courses in the UNM programs; (c) provide graduate stipends for Baccalaureate and MS degree graduates from the Partner Institutions moving to Ph.D. programs at UNM; (d) provide funding to support graduate students engaged in internships and projects at biotechnology institutions focused on agricultural biosciences; and (e) provide salary support for partner institution faculty to facilitate development of the learning environment in the agriculturally -relevant sciences

This program will provide new opportunities and encouragement for students at UNM and three other New Mexico universities to enhance the Nation's agricultural scientific and professional workforce. Simultaneously the proposed program develops the capability of UNM and the three other Coalition Partners to provide courses and scientific skills important to the education of agricultural professionals. This program captures the power of experiential learning through the ethnobotany freshman seminar and upper division and graduate internships in biotechnology institutions. These experiences focus on issues that are relevant to agriculture and food production. Finally, this program targets two points where many students leave the higher education pipeline - the transition from high school into the first year of college and the transition into a PhD program. We propose to develop a lower division course in ethnobotany designed to capture the interest and demonstrate the importance of agriculturally related sciences. We encourage graduate study through the implementation of advanced bioscience courses and experiential learning in biotechnology institutions and research laboratories, as well as through financial support to articulate graduate students from partner institutions.

The New Mexico Coalition for Graduate Study was developed by faculty from the 4 partner universities in 1997 to create synergism in the training students and represents their collective perceived needs. It has been effective in gaining extramural support for its efforts to enhance minority graduate education and the enhancement of life science research through collaborative research projects. The current proposal strengthens the New Mexico Coalition through the shared courses provided by distance education, inter-institutional scientific collaboration and stipend support for graduate students matriculating at UNM from the Coalition Partners.

Each objective will be developed at UNM by faculty and staff. The ethnobotany course will be developed in one semester and present three semesters throughout the program. Graduate distance education courses will be selected by UNM and Partner faculty members and transmitted throughout the program. Research assistantships will be awarded for a one-year duration and a total of five graduate students will be supported by this important component. These graduate students will participate in a one-month experiential internship as part of their support agreement. Finally, the faculty at the partner institutions will be awarded salary support to be used as they feel is most helpful in developing their teaching and mentoring capacity.

Proposal Number: 9904348

Lead Institution: California State University-Northridge

Grant Number: 99-38422-8122

Award Amount: \$299,182

Lead Project Director: Dr. Paul Tomasek

Project Duration: 2 years

Enhancement of Microbiology Programs at Three Hispanic Serving Institutions. The specific objectives of the proposed project are: (1) To develop early student awareness, interest and enthusiasm of the field of microbiology and its impact on the food and agricultural sciences; (2) to develop a food microbiology course and teaching laboratory at California State University, Northridge; (3) To facilitate student retention at the university level through mentoring and financial support of student microbiological research.

LA valley College (LAVC) and Oxnard Community College (OCC) will identify, advise and train Hispanic individuals interested in microbiology and food microbiology. They will provide basic education and training to those individuals (e.g. one year of math, introductory chemistry, biology and general microbiology). Well prepared students will be encouraged to transfer to CSUN upon completion of their Associate's Degree. This will allow them to take additional microbiology and biology courses leading to a baccalaureate degree. Advanced microbiology courses (including a new Food Microbiology course developed as part of this project) will prepare them for careers as microbiologist in the food and agricultural sciences. In collaboration with LAVC and OCC microbiology instructors, CSUN microbiology faculty members and CSUN Hispanic Microbiology students will develop recruitment materials, and help lead workshops, presentations and discussions about the impact of microbiology in the food and agricultural sciences. The use of peer role models is a particular strength of the proposed interaction between CSUN and the participating community colleges. Qualified Hispanic students (including community college transfer students) with a strong interest in microbiology will be given the opportunity to participate in a variety of mentoring programs at CSUN including the opportunity to conduct student research with CSUN microbiology faculty members and student peers.

Proposal Number: 9004366

Lead Institution: Mt. San Antonio College

Grant Number: 99-38422-8169

Award Amount: \$297,045

Lead Project Director: Dr. G. E. Hackett

Project Duration: 3 years

Enhancement of Veterinary Technology in Collaborative Programs. This project is a collaborative effort between Mt. San Antonio Community College, Mt. SAC), and a non-land grant State University with a strong program in agriculture, California State Polytechnic University, Pomona (CPP). It will strengthen the ability of their Veterinary Technology Programs to carry out their educational mission and to attract, retain, and graduate outstanding students capable of enhancing the nation's of and agricultural scientific and professional work force. The veterinary technology programs at both institutions are located in agriculture. This project entails a request for approximately \$50,000 per institution to replace old, clearly obsolete scientific equipment and to provide additional state of the art equipment that will facilitate the transition of students from their academic programs into clinical facilities, scientific laboratories, public and private animal research facilities, public health departments, or professional jobs in the food and agriculture sector (target area 4). The second and most expensive component of this proposal is to hire a registered veterinary technician (RVT) to work in both programs for three years. This individual will have a 50% time assignment in each of 3 roles; recruitment and retention (target area 6), in addition to instruction and instructional support especially developmental and documentation of student experiential learning.

The objectives of this proposal are to: (1) increase the number of minority and Hispanic students who are entering the veterinary technology programs at Mt. SAC and Cal Poly; (2) to increase student persistence, toward completion of the AS or BS degrees, and successful completion of the Veterinary Medical Board RVT exam; (3) to increase the number of RVTs available in Southern California; (4) to help Cal Poly, Pomona expand its certification as an HSI Institution from the Dept. Of Education and NIH to include the USDA.; (5) to replace outdated, inadequate, a veterinary medical equipment and acquire cutting edge equipment to enhance the teaching programs of both institutions; (6) to demonstrate that the cooperative venture between Mt. SAC and Cal Poly, Pomona Vet Tech Programs can be beneficial and become a model for expansion of collaborative efforts in areas of agriculture; (7) Facilitate the maintenance of a VMA accreditation for both programs by meeting the CVTEA major recommendation to employ an RVT.

As public institutions for higher learning in Los Angeles County, California, we serve an area with a high minority and Hispanic population. Therefore, this program has a very strong probability of enhancing and augmenting the racial, ethnic, and gender diversity of the student body in the veterinary technology programs in both colleges of agriculture. Thereby providing a more effective use of the full spectrum of the nations intellectual resources and if successful, will likely establish a trail to provide a continuing stream of highly capable minority and Hispanic students into the agricultural science programs at both institutions. The information from and about this project will be disseminated at national professional meetings.

Proposal Number: 9904355

Lead Institution: Bronx Community College

Grant Number: 99-38422-8033

Award Amount: \$300,000

Lead Project Director: Dr. John Davis Project Duration: 2 years

Animal Care and Management. The primary goal of this joint project proposal is to pilot a high quality certificate program in Animal Care and Management with an intention to further develop it into a two year degree program at Bronx Community College (BCC) of the City University of New York (CUNY). The project is a joint effort between Bronx Community College and the Bronx Zoo, the world's largest urban zoo. The Bronx Zoo is part of the Wildlife Conservation Society (formerly the New York Zoological Society), America's first, most prestigious, and largest organization dedicated to saving wildlife and preserving ecosystems.

The objectives of the project are to launch a new career path and open up economic opportunities for underrepresented minority students in the Bronx, and to strengthen partnerships between the articulating institutions. The project will enroll 30-36 students and provide them with classroom based, courses as well as an intensive hands-on internship experience--a total of 33 credits over three semesters. In order to facilitate high graduation rates, continuing education, and full participation from the students during the program, a strong articulation agreement and lines of communication will be forged to four-year institutions which offer similar curricula.

Additional project activities include the formation of a functional Advisory Board, submission of applications for appropriate approvals from BCC, CUNY, and the NY State Education Dept. to institutionalize the curriculum, and provisions for substantial career counseling and mentoring support for the project participants.

Proposal Number: 9904354

Lead Institution: Sul Ross State University

Grant Number: 99-38422-8170

Award Amount: \$150,000

Lead Project Director: Dr. Robert J. Kinucan

Project Duration: 3 years

Improving Agricultural programs for Hispanic and Other Underserved Students. Sul Ross State University is the principal public, state-supported institution of higher education between San Antonio and El Paso, Texas, a distance of 600 miles, and the only Hispanic-Serving Institution in the region offering programs in agricultural and natural resource sciences. During the past several years the university has begun offering two-way interactive video distance education courses to junior colleges and high schools in the region. More recently, the Division of Range Animal Science has begun offering courses in

agricultural and natural resource sciences to Odessa College, in Odessa, Texas. We anticipate that both the number of courses offered and the number of sites receiving distance education will increase. We further anticipate providing state-of-the-art training in the application of laboratory procedures in animal nutrition and soils science. Our vision is to provide high quality, effective, and cost efficient programs to historically underserved constituents with our primary 19 county service region.

The project target areas focus on instruction delivery systems, scientific instrumentation for teaching, and indirectly, student recruitment and retention. Our objectives are to: (1) develop supplemental Internet-based course materials to augment two-way interactive distance education courses; (2) upgrade the nitrogen analysis equipment in our animal nutrition/soil science laboratory; and (3) enhance the recruitment and retention of underserved student populations by offering state-of-the-art educational opportunities.

Operationally the proposal will be implemented in two phases. Initially the nitrogen analyzer, laptop computers, and data projector will be purchased and brought into operation. Secondly, during summers of 2000 and 2001, faculty will develop Internet programs to augment two-way interactive video distance education classes and bring them on-line.

Resulting benefits will include: 1) ten courses prepared for two-way interactive video distance education with full supplementation through the Internet, 2) a fully equipped, modern laboratory for animal nutrition/soil science analysis, 3) potential for enhanced recruitment and retention of traditionally underserved student populations, and 4) enhanced student preparation to be agricultural scientist and professionals.

Dissemination plans include: 1) promotional material to advertise distance education course offerings and educational opportunities at Sul Ross state University, 2) posting of appropriate materials on the Division of Range Animal Science's Internet web site, 3) demonstrations to the Sul Ross state University academic community and affiliated junior colleges and high schools, and 4) poster and oral presentations at professional society meetings and workshops.

Proposal Number: 9904346

Lead Institution: Lehman College

Grant Number: 99-38422-8168

Award Amount: \$237,727

Lead Project Director: Dr. Edward J. Kennelly

Project Duration: 2 years

Plant Biotechnology in the Bronx: Instrumentation Improvement and Curriculum Development. This is a joint project proposal between Herbert H. Lehman College and Hostos Community College, two Hispanic-Serving Institutions of the City University of

New York (CUNY) that are located less than ten miles apart in the Bronx, NY. The purpose of this program is to improve teaching instrumentation in plant sciences and to integrate these instruments into existing and planned laboratory courses at Lehman and Hostos. This program will allow students at the undergraduate and graduate levels to have hands-on experience with state-of-the-art equipment, thereby preparing students for careers in plant biotechnology. Specifically, this proposal describes an effort to enhance the instrumentation available in existing laboratory courses at Lehman in biochemistry and molecular biology, and one planned course in plant-microbial interactions. This proposal requests funds for instrumentation to be used in these courses, including a high-performance liquid chromatograph, and a fluorescence microscope, to enhance teaching laboratories. In addition money is also asked to improve the General Biology courses at Hostos, through equipment purchases and curriculum development.

Lehman is the only public four-year college in the Bronx, and has an established program in plant biology, including a doctoral program in association with the New York Botanical Garden through the Graduate center, CUNY. Lehman will serve as the lead institution in this current proposal. Hostos joins this proposal adding a depth of plant sciences in its Natural Sciences faculty, as an interest in improving its capacity to teach plant biology. Existing joint programs between Hostos and Lehman will be used to leverage this current proposal. Also, additional ways for Lehman and Hostos faculty to interact through plant sciences, such as guest lectures, are discussed.

Updated--January 12, 2000