

Building Environmental Stewardship
Final Report
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BUILDING ENVIRONMENTAL STEWARDSHIP **FINAL REPORT**

I. INTRODUCTION.

The Building Environmental Stewardship (BES) program was a five-year initiative funded by the U.S. Department of Energy's Office of Environmental Management. The total amount of the grant awarded to the United Negro College Fund Special Programs Corporation was \$1.3 million, distributed in \$250,000 installments over the term of five years. A request for a no-cost extension in 2002 was granted. The program began October 1, 1997 and ended September 30, 2003. The BES program enhanced the capability of faculty at 10 HBCU's to integrate environmental sustainability concepts and social justice into multi-disciplinary curricula on their respective campuses.

The BES program was formatted in such a way that encouraged research by providing a strong educational foundation through environmental sustainability training and shared resources. The purpose of the BES program was to deepen the BES faculty participants' collective understanding of sustainability, such that the participants were able to assist one another through private and collaborative research to develop the knowledge, skills and strategies to become effective advocates and practitioners of sustainability through higher education.

UNCFSP Education for Sustainability Training provided a pedagogical understanding of the importance of integrating sustainability concepts into teaching, research, operations and community outreach. It also highlighted techniques for team building, innovative teaching and institutional change. Faculty participating in the BES program enhanced both their own capability and the capability of their college or university to thoroughly train cohorts of future leaders.

II. PROGRAM ACTIVITIES

UNCFSP invited all HBCUs and MI's to submit grant proposals addressing environmental and sustainability issues to a competitive selection process. From these proposals, UNCFSP selected ten schools to receive renewable funding for the duration of the five-year initiative to implement the programs described in their applications. The BES program consisted of three integral components: Education for Sustainability Training, technical assistance, and resource sharing among campuses.

Education For Sustainability Training

UNCFSP hosted four comprehensive training programs. These training sessions were led by both Second Nature, a Boston-based nonprofit that specializes in sustainability curricula, and National Wildlife Federation's Campus Ecology. Two faculty participants from each of the 9 participating schools, plus Voorhees College, attended each of these three-day events.

The first EST workshop was held at Clark Atlanta University (CAU) in 1998. The workshop enhanced understanding of sustainability and how sustainability relates to environmental justice. The conference focused on how the BES participants could integrate environmental justice and environmental sustainability concepts into their curricula, and how to access electronic resources that were available to them through CAU's Environmental Justice Resource Center (EJRC), the BES Information Clearinghouse Website, and Second Nature's online reference center. UNCFSP; Dr. Robert Bullard, Director of the EJRC; and Second Nature led this conference. Topics that were discussed included: urban sprawl and transportation; GIS technologies; environmental justice and minority communities; and preventative stewardship.

The second EST workshop, held at Paine College, primarily focused upon environmental health issues. Information about the impacts of human health precipitated by environmental changes was explored in this workshop. Additionally, the conference provided training and information on environmental measurements and indicators that were available and implemented at other

institutions of higher learning. UNCFSP and Second Nature trainers led this conference. Topics discussed were: Lead poisoning; pesticides; radiation; environmental chemistry; brownfields; and environmental impact statements. Also included at this conference was instruction on how faculty members might integrate these topics into their existing curricula.

The third EST workshop was held in November 2001 at Tuskegee University. This conference focused on community outreach and greening campus operations. UNCFSP invited fifteen other HBCU member institutions, which were not BES grant recipients, to participate in this conference. The purpose of this outreach was so that the BES institutions could share their experiences with environmental curriculum integration and campus greening with schools that were interested in adopting similar programs. Thus the BES schools prepared tri-fold poster presentations of the BES activities that their respective campuses achieved.

During the course of this conference, schools designed collaborative projects to encourage resource sharing among the universities. Campus Ecology and Second Nature both had training roles at this conference. Here faculty members developed their own plans to continue sustainability efforts beyond the term of the grant through collaborative projects.

These proposed projects included: an environmental assessment for an indigent minority community in Tennessee; a virtual classroom to share environmental resources; and a continued faculty development program to be alternately hosted by participating schools. Although the BES grant did not fund these projects due to limited funding, the faculty directors were encouraged to solicit their own funding through grant writing, institutional resources, or regional sponsorship. UNCFSP provided technical assistance to the BES schools in helping them to solicit new funding for the proposed projects.

The final conference was held in Washington, DC and took place in November 2002. This conference was a "Best Practices" conference. Each faculty director prepared power point presentations to show all that they accomplished over the course of the five-year initiative, and plans were made to

continue sustainability initiatives beyond the duration of the grant. Also, plans for a sustainability treaty were introduced wherein faculty members were encouraged to provide input for the drafting of the treaty. Dr. Beverly Wright of the Deep South Center for Environmental Justice (DSCEJ) spoke at the conference on the environmental contamination, which continues, to plague southeast Louisiana. Also Dr. Robert Wingfield of Fisk University spoke on the topic, "Toxic Exposure within Communities of Color". Lastly Mr. George Bandy, Director of Sustainability at *Interface Inc.*, a corporate leader in sustainable chemistry, spoke on the importance of sustainability in higher education.

Technical Assistance

UNCFSP provided regular technical assistance to the BES Institutions through its Director Hilary N. Chulock who is a licensed attorney and is certified in the practice of environmental law, and Ms. Laverne Means, BES program coordinator, and eight-year veteran of both UNCFSP and the Department of Environmental Programs. UNCFSP also formed a Steering Committee to consult on the needs of the BES Institutions. UNCFSP also developed a comprehensive BES website which may be viewed at www.uncfsp.org/bes. This website provided updated information on each school's progress, biographies on the BES faculty directors; upcoming events and workshops and links to other helpful resources.

Additionally, Second Nature, a Boston-based nonprofit organization whose mission is to advance human and environmental well-being through higher education, received a subgrant each year to provide technical assistance to the participating institutions. Second Nature, a national leader in sustainability education programs was available to all of the BES participant schools in providing technical assistance in developing, implementing, and evaluating sustainability programs on their campuses. Participants were provided support upon request to initiate their own faculty development programs, and encouragement to use the BES Information Clearinghouse website in order to exchange information and ideas about each institutions' sustainability initiative.

Resource Sharing

The BES program instituted a “Best Practices” showcase each year that provided the institutions with a forum to report and evaluate the results of what they had achieved through the BES program. Each program presented a power point presentation, and created a visual display of the sustainability activities that were achieved on their respective campuses.

In the fifth and final year of the BES program, schools were teamed up to create team projects that would encourage resource sharing among the schools. Three projects were proposed: a virtual classroom project, a community environmental health study, and a continuing faculty development program. These team projects were funded with any unspent monies from their subgrants, and UNCFSP requested and were granted a no-cost extension to complete the collaborative activities.

Teams were able to communicate regularly through both the BES Information Clearinghouse website, which was equipped with I-Chat software, as well as regular conference calls. Also the schools were regularly provided updated contact information list and were encouraged to contact one another.

III. Institutional Activities

Ten schools were competitively selected to participate in the BES program. Each school received on average \$10,000 per year. Schools detailed the types of sustainability activities in their proposals and that faculty directors would be responsible for implementing at each institution. UNCFSP collected budgets each year before subgrants and funding were distributed. UNCFSP also monitored all institutional activities of each institution.

Voorhees College was not granted funding in the fifth year of the program due to noncompliance with both institutional activities that were outlined in their proposal, as well as a failure to submit timely reports as required under UNCFSP’s subgrant. The BES program manager, Malika Hobbs, approved this

action, and the money that was slated to go to Voorhees was equally redistributed to all remaining BES institutions.

The activities and successes of the ten BES schools are detailed below:

Clark Atlanta University

Clark Atlanta University is at the forefront of the environmental justice movement through their Environmental Justice Resource Center (EJRC) directed by Dr. Robert Bullard. Dr. Bullard is a Ware Professor of Sociology. He was one of the planners of the first National People of Color Environmental Leadership Summit. Additionally, he served on President Clinton's Transition Team in the Natural Resources and Environmental Cluster (i.e., Departments of Energy, Interior, and Agriculture, and the EPA) and on the U.S. EPA National Environmental Justice Council.

Several courses were modified throughout the university to include environmental sustainability and environmental justice concepts into their curricula. CAU also integrated an environmental course to be a part of the Interdenominational Theological Center's core curriculum.

CAU also hosted a series of ten lectures and faculty development workshops. To name a few: "Unequal Protection: Environmental Justice and Communities of Color"; "Integrating Environmental Resources from the Internet into the Curriculum"; and "The Costs and Consequences of Urban Sprawl: Equity Dimensions of Uneven Growth in Metro Atlanta."

CAU's BES student scholars designated the Proctor Creek Watershed Action as one of their central service learning projects. The Proctor Creek Watershed Action is a project of the National Wildlife Federation that fosters community self-empowerment for citizens to take civic action necessary to improve and protect water quality and quality of life in their watershed. Additionally, BES scholars participated in health fairs and environmental literacy programs with local elementary after-school programs.

CAU also maintained a comprehensive website as a central resource to faculty members to help them incorporate sustainability concepts into their classrooms.

Fisk University

Dr. Robert Wingfield, Professor of Chemistry was the BES Faculty Director for Fisk University. Fisk made several advances in implementing a sustainability curriculum throughout a multitude of courses which are listed as follows: Natural Science, Special Topics, Senior Research, General Biology II, Social Problems, Family Life, Principles of Microeconomics and Principles of Macroeconomics.

Fisk also implemented several sustainability workshops on their campus. Fisk conducted lectures to students in Fisk University Summer Science Enrichment Program. Also, workshops were conducted as part of the Spring Faculty Retreat and Fall Faculty-Staff Institute created in 2000. Faculty and students of the BES program presented Environmental Science discussions and hands-on science activities to students at Woodlawn Hills Youth Development Center.

BES participants also participated in the development of an Environmental Justice Strategic Plan for the Tennessee Department of Environment and Conservation. Additionally, BES faculty and Students participated in six Environmental Justice and community focus groups conducted across the state of Tennessee that were sponsored by the Tennessee Department of Environment and Conservation.

Fisk adopted a campus-wide recycling program that was implemented, coordinated and managed by BES students. A university-wide environmental audit was conducted; and consequently, a university environmental policy was implemented.

Miles College

Mr. Darren Moss was the faculty director of Miles College. Mr. Moss's fields of research include: nutrient analysis, chromatography, bioremediation, soil analysis, cell culture isolations, microbiology and DNA extraction. Mr.. Moss also holds professional membership to the American Society of Microbiologists and the Environmental Careers Organization.

Miles saw the addition of eight new environmentally related courses as a result of the BES program. They are listed as follows: Instrumentation Techniques, Environmental Analysis, Scientific Writing, Biostatistics, Ecology, Environmental Laws, Principles in Bioremediation and Principles in GIS/GPS. Miles adopted several campus greening activities. Miles College adopted a recycling program as a result of the BES grant. The recycling program at first began in administrative offices and then was adopted campus-wide. Miles utilized funds to plant foliage across the campus, all of which was grown by BES student interns.

The BES program funded an environmental resource library at the beginning of the summer 2000 term. Student stipends were also offered to BES Scholars who helped coordinate the environmental library, Science Reading Room and the paper-recycling program.

Oakwood College

Dr. Padma Uppala directed the Oakwood College BES program. Dr. Uppala obtained postdoctoral training in Environmental Toxicology at the University of California, Riverside. Currently she is researching a breast cancer project entitled " Biomarkers of Genotoxicity Induced by the Environmental Estrogen DDT" on a minority population that was exposed to the highest levels of DDT.

At Oakwood College, Faculty members were introduced to model syllabi incorporating sustainability courses. As a result of this effort, Oakwood now offers a minor in environmental science.

Oakwood was committed to sustainability efforts campus-wide and solicited involvement from a multitude of facilities across the campus.

Some of the sustainability efforts are listed as follows: Oakwood reduced campus-generated junk mail by 60% by utilizing bulletin boards, campus newsletters and electronic mail; eliminated disposable dining ware; changed farming practices by reducing the use of pesticides; adopted a campus-wide recycling program; expanded the energy management program to reduce energy consumption by 10-20 %. Additionally, Oakwood expanded campus composting, organic gardening and sustainable campus dining practices.

Oakwood physical plant adopted a sustainable energy management plan under the BES program. Heating and cooling systems were computerized to shut down after hours which resulted in a 25% savings. There was also a 90% reduction in on-campus transportation fuel costs when twenty fuel-driven motorized vehicles were replaced with twenty electric golf carts.

Paine College

Dr. C.R Nair directed Paine College's BES program. Under Dr. Nair's direction, a new chemistry major with an environmental emphasis was introduced to the college. Paine also introduced an interdisciplinary Environmental Seminars Course that served to enhance environmental literacy; promote environmental sustainability concepts; involve students in environmental decision-making; develop and maintain community partnerships; and promote environmental careers.

Paine adopted several campus energy conservation initiatives. All of Paine's old lighting fixtures were retrofitted with energy efficient 18W compact fluorescent lights to reduce energy consumption. The BES project also sponsored Paine College's recycling program that was coordinated by BES student scholars.

The BES program on Paine's campus initiated a mass petition campaign. The petition was signed by faculty, students and staff requesting the college to adopt environmentally sustainable purchasing policies. In response to this

petition, two-sided copy machines were implemented and virgin paper was replaced by recycled paper.

Rust College

Dr. Nnamdi Anosike directed the BES program at Rust College, and under his tutelage. Rust enjoyed many advances in integrating sustainability concepts into the school's curriculum. To encourage curriculum integration on Rust's campus, the administration required one faculty member from each academic division participate in its on-campus environmental literacy workshops. Those faculty members, in turn, integrated environmental studies concepts into their course syllabi in a wide variety of disciplines such as Social Sciences, Natural Sciences, Business and Humanities.

Rust also added two new Environmental Science courses, Environmental Biology and Environmental Chemistry. Dr. Anosike and BES program liaisons, Dr. Karen Baskerville, and Dr. Zahir Qureshi attended workshops both regionally and nationally on curriculum integration, environmental literacy and environmental justice. Rust also purchased library resources and other educational materials on curriculum integration and created an environmental resource center.

Rust hosted several workshops and youth programs with the BES funding. Rust hosted a six-week Summer Youth Program each year in which both Rust faculty and students traveled to local elementary school summer programs. There they taught elementary school teachers and students about environmental science and sustainability. Rust also hosted a weekend academy throughout the academic school year in which middle school students learned about environmental issues through debate.

BES student interns also spread the word on campus about sustainability by talking with students about both energy and water conservation. The interns also sponsored a tree-planting ceremony for earth day 2001.

Tuskegee University

Dr. Kokoasse Kpombrekpou-A was the BES Director on Tuskegee's campus. Tuskegee employed a strategy in which they integrated environmental sustainability concepts into existing courses rather than teaching isolated subjects on the matter. To make this effort successful, Tuskegee adopted an "educate the educator" approach through comprehensive workshops in targeted disciplines to provide faculty members with suitable teaching methods and materials to effectively incorporate environmental topics into their curricula.

The first workshop hosted twelve faculty members from various departments: Agricultural Sciences, Food Science, Chemistry, Biology and English. Each faculty member participated in two two-day faculty development workshops. The following topics were discussed: the efforts of Tuskegee in curriculum revision and integration; enhancing environmental literacy using the case study approach to teaching; teaching across disciplines; presentation by the HBCU/MI Environmental Technology Consortium; and selected presentations of revised syllabi.

From this workshop, revised courses included: Organization and Development of Extension Programs; Agricultural Economics; Microanatomy; Beef Cattle and Sheep Production; Elementary Accounting Principles; General Chemistry Lab; Advanced Seminar Issues in Professional Education; English Composition; Environmental Management, Quality and Control; Environmental Toxicology; Community Nutrition; Manufacturing Processes; Soil and Environmental Chemistry and Statistical Science: An Environmental Context.

Tuskegee's second workshops were held in April and October 1999. As a result of this workshop series, several syllabi were revised or developed, environmental awareness meetings were organized for students, and a dialog was established between faculty, staff and administrators on how to promote environmental stewardship on campus. From this workshop, revised course included: English Composition II; Resource Economics; General Chemistry; Elementary Accounting Principles; Process Control and Instrumentation;

Immunology; Immunology Laboratory; Dairy Science and Chemistry Quantitative Analysis.

Xavier University

Dr. Beverly Wright was the BES faculty director for Xavier University. Dr. Wright is also the Director of the Deep South Center for Environmental Justice, a grassroots nonprofit that aids members of disenfranchised minority communities to have a collective voice in the environmental justice movement. Dr. Wright's specific area of focus was Louisiana's Southeast Corridor, otherwise known as "Cancer Alley."

The BES program was integral in Xavier's ability to offer three minors in environmental studies: one for Science majors, and two for Non-science majors. The university now also offers a major in Environmental Chemistry. The minor in Environmental Science for Non-science majors introduces the non-science major to environmental sciences. Students must earn 18 credit hours to earn their minor. Required courses for this minor include Environmental Biology and Survey of Environmental Chemistry. The minor in Environmental Studies for Science Majors is for students who had already completed a mandated minor. Students must also earn 18 credit hours. The required courses in combination with core curriculum requirements are as follows: Ethics, Environmental Philosophy, and Environmental Theology.

The DSCEJ sponsored activities as were outlined in its original proposal. The project goals of the DSCEJ were as follows: to promote the infusion of sustainability and equity into multi-disciplinary teaching; to develop a comprehensive student project on sustainability and environmental justice; to introduce sustainability and equity concepts to students by students; and to integrate community outreach and support initiatives.

These goals were accomplished through a variety of activities that included: Toxic tours of the chemical corridor of Southeast Louisiana; primary and secondary education; and community workshops and seminars. BES students sponsored a Lead Poisoning Prevention workshop and trained local

high school students on the hazards of lead-based paints. BES student interns held several focus groups on campus to assess the level of environmental literacy of the student body. Also BES students conducted an environmental audit of Xavier's campus.

The DSCEJ staff regularly presented environmental justice seminars to classes on campus and to local high school students. A sustainability symposium was conducted each semester to which Xavier University faculty, staff and students were invited, as well as community residents from partner communities and faculty, staff and student from other regional universities.

IV. Administration

All programmatic activities relating to the institutions were overseen by UNCFSP's Department of Environmental Education Programs. The BES Program Director reported directly to Liz Lowe, UNCFSP's President and CEO. All programmatic requests or modifications were first cleared by DOE BES program Manager Malika Hobbes. All funding disbursements as it related to the program were overseen and signed by UNCFSP's controller.

UNCFSP disbursed institutional funding each year contingent upon each Institution's compliance with UNCFSP's regulations, as outlined in each school's subgrant. Schools were required to submit written reports annually to UNCFSP, as well as financial records that were signed by an authorized financial representative of the university. Funding was disbursed only upon the receipt of all required materials. As required by law, UNCFSP, as a 501C(3), was subject to annual corporate audits, which were performed by the independent accounting firm Deloitte Touche.

All funding modifications or programmatic amendments were authorized by either Malika Hobbs, DOE Program Manager; or the DOE's Office of Acquisition and Assistance. For BES financial records, please see the attached controller's report.

V. Evaluation

UNCFSP's Director of Environmental Programs routinely kept in contact with a BES Steering committee comprised of four faculty directors of the BES program. The purpose of this committee was to receive input from those directly involved in the program to evaluate both the successes and failures of the BES program.

UNCFSP's Director of Environmental Programs performed regular site visits at each institution to ensure that BES funding was spent in accordance with OMB circulars, as well as UNCFSP's own corporate standards of compliance. During these site visits, the UNCFSP BES Director would meet with the BES faculty director and faculty liaisons, university officials, and often the university president to ensure compliance, as well as to solicit further institutional support of the BES program.

UNCFSP also surveyed the BES institutions on a regular basis to solicit input about the BES program. Through these surveys the schools had the opportunity to self-evaluate the efficacy of the BES program as a whole, as well as their individual efforts. As such, UNCFSP had the opportunity to build upon the successes of the program, as well as monitor the imperfections of the program.

Schools were also required to fill out surveys following each workshop or conference to evaluate both the training and the event itself. All surveys from each event posted very high marks on both the training and the event.

Quantifiably, the BES program enabled the BES institutions to integrate sustainability concepts into fifty-five courses across a multitude of disciplines. The BES program also led to the creation of three new environmental science majors and three new environmental science minors.

Finally, there were many non-quantifiable achievements of the BES program that will ensure the legacy of the BES grant. These include: the new environmental clubs that have been formed on most of the BES campuses;

environmental resource centers; administrative support; faculty and student zeal for environmental stewardship; and planting the seeds of education for future generations of environmental stewards and advocates in the minority community.