

2010 University of the District of Columbia Combined Research and Extension Annual Report of Accomplishments and Results

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I. Report Overview

1. Executive Summary

The University of the District of Columbia is the land-grant institution for our nation's capital. One of several growth initiatives implemented by the University's President, Dr. Allen L. Sessoms, was the establishment of the College of Agriculture, Urban Sustainability and Environmental Sciences (CAUSES) in August 2010. The DC Agricultural Experiment Station (AES) and Cooperative Extension Service (CES) have been strategically placed in CAUSES, creating a unique college which encompasses all three functions of a land-grant institution: teaching, research, and outreach. CAUSES promotes sustainability in urban agriculture and environmental sciences. The research and extension programs of AES and CES complement initiatives in the College pertaining to food, nutrition, health, and the environment. The reporting year (2010) has been marked with triumphs and challenges. This report details research and extension efforts as well as impacts in four planned program areas: Natural Resources and the Environment; Urban Plants Production and Protection; Human Health, Urban Lifestyles and Food Safety; and Urban Families, Youth, and Communities.

Our merit review processes for the Agricultural Experiment Station and the Cooperative Extension Service remain the same. Research proposals are peer reviewed by an internal panel prior to submission to USDA for approval. Our Specialty Crops grant proposals for sub-grantees are evaluated by a selected committee comprised of internal and external members. The Cooperative Extension Service has established boards and committees to assist with the development, implementation, and sustainability of programs, i.e. 4-H, Master Gardeners, and the Financial Literacy Program.

We continue our efforts to obtain valuable stakeholder input from DC residents. Our Farmers' Market operates from mid-May through early November which provides an excellent opportunity to distribute and collect surveys and talk with patrons to hear about matters they deem important. In December 2010, we conducted the first of several planned community listening sessions. The event was held in one of the most economically depressed wards of the city, Ward 8. These residents provided very thoughtful comments and fully opened up about issues that were seriously affecting them, their families and community. All data collected is considered. Shared issues of the most concern have been marked as priorities. As required financial, material, and human resources are made available, research and extension programs will be implemented or expanded to address issues designated as critical for the residents of the District of Columbia.

Our multi-state research efforts continue with two projects: "Changing the Health Trajectory for Older Adults" and "An Integrated Approach to Prevention of Obesity in High Risk Families." Joint activities between the Agricultural Experiment Station and the Cooperative Extension Service include: Health and Nutrition activities and events; environmental forums; community activities/stakeholder events; Campus Farmers' Market; Urban Agricultural Fair for DCPS and Charter School students and teachers; sustainable agriculture; and urban community gardens. AES and CES staff have begun working with academic units within the college as well as with academic disciplines across the University. Our four planned program areas address issues related to diet, nutrition, health, food safety, natural resources, the environment, sustainability, urban plants production, protection of plants and the environment and the viability and sustainability of youth, families, and communities. Research and Extension activities/highlights for each of

the four programs follow:

Natural Resources and the Environment

The Natural Resources and the Environment program focuses on relative issues pertaining to conservation and stewardship of our natural resources and provides information to residents about their urban ecosystem. Research and outreach activities follow:

The Design and Development of an Experimental Anaerobic Digester for Organic Waste: The ever growing demand for energy world-wide can only be met by considering the possible range of energy solutions and the technology to produce emerging sources of energy to reduce our dependence on oil - a non renewable fossil fuel. Renewable energy such as solar, wind, geothermal, biomass and alternative fuels are promising clean energy resources of the future, which are environmentally friendly and which sources replenish itself or cannot be exhausted. Biomass energy is derived from waste of various human and natural activities, including municipal solid waste, manufacturing waste, agricultural crops waste, woodchips, dead trees, leaves, livestock manure etc., which are abundant anywhere and everywhere, at any time. Any of these sources can be used to fuel biomass energy production with the design of an efficient digester or processing plant to harness the energy from the biological mass. In the Greater Washington area, it is estimated that several million tons of energy sources for biomass energy are collected each year. If all these sources were used to create biomass energy, this could make up to hundreds of megawatts of electricity that can be used to power several homes.

Biogas is produced when organic matter is degraded in the absence of oxygen. The process, from degradation to gas production is called anaerobic digestion. An experimental digester was built that converts cow manure and agricultural waste into methane-rich biogas that can be used as alternate energy resources to generate electricity or thermal energy. The research in this phase of the study focuses on the Thermodynamics analysis and calculation of the energy contents of the methane gas, system simulation of the dynamic behavior of the anaerobic digester process, and the detailed engineering design of the Digester tank. The study also examined the enthalpy change of formation of the elements involved in the reaction of combustion of methane and the heat exchanged during the reaction, in order to determine the conversion efficiency of the digester and the quantity of fuel that can be generated per day. During the reporting period, research efforts concentrated on analyzing and comparing the energy content and anticipated Gas yield of Bio-gas from various animals (livestock waste). As these efforts are continuing, we will not be reporting on outcomes for this period. Publications during the period include:

1. Ososanya, E., Mahmoud, W., Lakeou, S., Ukaegbu A., Kamdem, R., "Design and Implementation of a Virtual Web-based Power Measurement Module for a Hybrid Renewable Energy Power System", Proceedings of the ASEE Annual Conference and Exposition, AC 2010-1992, Louisville, Kentucky, June 22-23, 2010
2. Cota, Paul, Ososanya, Esther, Kemathe, Lily, Suresh Regmi, and Patrice Kamdem, "Teaching Wireless Sensors Network Through Laboratory Experiments", Proceedings of the ASEE Annual Conference and Exposition, AC 2010-2417, Louisville, Kentucky, June 22-23, 2010
3. Zhang, Nian; Kamdem, Roland; Ososanya, Esther; Mahmoud, Wagdy; Liu, Wenxin; "VHDL implementation of the hybrid fuzzy logic controllers with FPGA" IEEE Xplore, Intelligent Control and Information Processing (ICICIP), 2010 International Conference on Digital Object; Identifier: 10.1109/ICICIP.2010.5564277, 2010, Page(s): 5 - 10

Water Quality Education: Our Natural Resources and the Environment Program in Cooperative Extension Service involves water quality education for students and residents in the District of Columbia. The Water Quality Education Program provides workshops and hands-on experiences in laboratory techniques. Students are exposed to field trips to correlate with education provided in

classes. Rain gardens are also established at schools in the District. Workshops are held for senior citizens concerned about drinking water in the city. In addition to face-to-face teaching, the program has made thousands of indirect contacts from literature distribution throughout the city. During the reporting period, the program provided activities that benefited 800 youth and 446 adults through face-to-face teaching and demonstrations on water quality issues. Also, we reached out to 3,700 indirect contacts through participation in meetings, exhibitions, and distribution of informational materials to DC residents.

Invasive Species Project: Through partnership with Casey Trees, the Cooperative Extension Service co-taught an invasive species class with the Natural Resource Manager of Rock Creek Park. The class introduced participants to the pervasive invasive species in the District of Columbia, followed by a field session. Class participants, along with other volunteer groups, i.e. sororities, federal employees, embassy employees, students from area schools and universities, church groups, and citizen foresters, worked for six days to remove invasive species, covering an estimated 32 acres of parkland in the District of Columbia.

The concept of an invasive species was introduced to four elementary/middle school classes in the District of Columbia at the Anacostia River Fair in Ward 8. Information about invasive species presented to children was somewhat similar to the subject matter used in the Casey Trees class, but was in a more child-friendly format. The children were shown live examples of many of the invasive species present along the Anacostia River.

Thirteen (13) invasive species fact sheets were compiled into booklets that were placed around the University of the District of Columbia campus and satellite locations. The booklets were also shared with partners who helped with further dissemination. The booklets were shared with the U.S. Botanic Gardens, Casey Trees, District Department of the Environment, Urban Forestry Administration, District Parks and Recreation, Student Conservation Alliance, and Master Gardeners. The fact sheets were also posted on DC MarketMaker, an on-line marketing resource. Additionally, fact sheets were distributed at various abatement events, environmentally-related events, and at the University's Farmers' Market.

The extension IPM specialist for the Environment and Natural Resources Unit resigned and has not yet been replaced. The Director intends to hire an integrated pest management specialist in 2011. This individual will assist with a number of research and outreach initiatives. The incumbent will respond to community inquiries, teach courses in pesticide management and assist with revamping the Asthma program which has been suspended in the absence of an IPM professional.

With the establishment of the new college and a shortage of faculty, the part-time researcher for AES who usually conducts research in the area of water quality studies, was asked to direct the new Professional Science Master's program. Thus, planned studies and some activities could not be accomplished during the reporting period.

Urban Plants Production and Protection

The Urban Plants Production and Protection Program continues to address issues related to sustainable agriculture, community gardening, and training of master gardeners. Our sustainable agricultural research program includes herbs and spices production, intercropping vegetable crops for maximum productivity, production of mushrooms as a niche crop, implementation of techniques for extending growing seasons of specialty crops, and enhancing specialty crop production in the District of Columbia. Specific activities for this program follows:

Sustainable Agriculture Research: Research and outreach initiatives included the establishment of demonstration plots at the University's Muirkirk Research Farm in Beltsville, MD; Field Days for gardeners for hands-on instruction in the application of soil amendments, planting of seedlings, and the

maintenance of seed beds during the growing season; the development of brochures and information documents on growing vegetables in the District of Columbia; and assisting new gardeners to establish seed bed plant seedlings and showing them how to maintain seed beds to ensure maximum productivity. University students participated in a solar pods gardening project on campus to grow vegetables during the fall and winter months. Solar pods were used as a method of extending the growing season. The students, grew, maintained, and harvested the crops. A campus revitalization effort includes the renovation of the main campus plaza. Included in the plans for a new plaza is a vertical garden which will be maintained by the students under the guidance of the sustainable agriculture staff and extension agents.

Ethnic Crops Research: The Agricultural Experiment Station and the Cooperative Extension Service have identified the need for ethnic and specialty foods. Through a collaborative effort, a crop research activity was established to study the cultural aspect of identified specialty vegetables. The results of the research were used as an educational resource for outreach to District of Columbia residents interested in new urban agriculture discoveries and branching out to include ethnic and specialty crops in their repertoire of plantings. Ethnic crops for this research included: Gboma; Mixed Hot Peppers; Ketteley; Garden Eggs; Hibiscus; Sweet Peppers; and Sweet Potato Leaves.

Master Gardener Program: Thirty-Seven (37) were trained as Master Gardeners and agreed to perform work in their communities to teach residents how to cultivate garden spaces and manage landscapes sustainably using research-based information. Forty-five (45) site assessments provided assistance to public and private facilities to determine disease or conditions of lawns, trees, plants, and shrubs. Recommendations were made by agents for treatment, pruning, removal, and transplanting. For 2010, 187 Master Gardeners volunteered 9,350 hours of horticultural expertise to the District of Columbia. Several new projects were initiated to include:

- All Nations Church Landscaping Project: A Team of four Master Gardener Trainees created a garden design for All Nations Baptist Church. The church could not afford to hire a landscape architect so they turned to the DC Master Gardener Program for assistance. The plan was developed and installed with the church's garden ministry. The donated plan and wholesale plants saved the church \$3,500.

- New Community for Children (NCFC) Project: The DC Master Gardener Program partnered with the New Community for Children (NCFC) which was founded in 1988 and has been in continuous operation ever since serving children, primarily African American residents of the Shaw-Howard neighborhood of Washington DC. In the summer 2010, a program was organized around horticulture and evolved as a remarkable collaboration among NCFC, the U.S. Botanic Garden's children's program, and City Blossom's Marion Street Garden, an intergenerational garden with educational opportunities for children, youth and adults and UDC's Master Gardener Program. In addition, the front yard of NCFC had an on-site garden in which vegetables and flowers were planted and cultivated to enable children to have hands-on experience. It was the planning, development, planting, and cultivation that collectively created a relevant educational experience for the Master Gardeners.

- Master Gardener Program School Gardens Technical Advisory Committee: By popular demand, a Master Gardener Program School Gardens Technical Advisory Committee was formed by the Master Gardener Coordinator. Thirty-two Master Gardeners serve on this committee to support the School Gardens Program that was enacted in the DC Healthy Schools Act of 2009. Additionally, the University of the District of Columbia's Master Gardener Program collaborated with Penn State and the Universities of Delaware and Maryland on a grant proposal from USDA Peoples' Garden School Garden Pilot Program for \$1 million.

Community Gardens Project: Assistance was provided to community gardens throughout the city. Through a partnership with the District Department of Parks and Recreation, eight new gardens were installed at DC recreation centers. The gardens featured traditional cold and warm weather crops as well as ethnic and specialty crops and 24 different varieties of produce. Mini-demonstration plots of various

crops such as hot peppers, garden eggs, gboma, edible celosia, and Calaloo (amaranth) were planted. Informal educational workshops were presented, educating residents on the growth, maintenance and harvesting of the crops. Information on the preparation of these crops was also provided.

Several members of the community have submitted testimonies. A few follow:

Juanita Peterson, recreation specialist for DC Parks and Recreation writes, "It has been a tremendous pleasure to interact with your staff in the collaborative effort involving UDC and DPR relating to (the) Nutritional Garden. Many community people were made aware of the garden and were given the rare opportunity to sample its yield. The community as well as staff here immensely enjoyed harvesting various vegetables grown in the garden here at T. Hagans..."

John, a member of the community, writes, "All summer campers who visited Lederer Youth Garden were introduced to (Agent) Afantchao's ethnic crops garden. That is over 200 young people, aged 5 to 21, who saw the garden and learned about the ethnic crops growing there!"

Llewellyn Berry writes, "Thanks, again (Agent) Yao for the Tasting and for a very special addition to the Newark Street Garden. I'm looking forward to much more next season..."

Human Health, Urban Lifestyles and Food Safety Program

The focus of our Human Health, Urban Lifestyles and Food Safety Program is on the study of chronic illnesses such as diabetes and breast cancer as well as major health issues to include obesity and nutrition for the elderly. The Center for Nutrition, Diet, and Health provides valuable information on the nutrient content of foods and provides demonstrations and workshops for DC residents. Research and extension activities for this program follow:

Developing Fuzzy-set-theory-based Data Mining Methodologies for Diabetes Data Analysis:

Diabetes is a group of diseases marked by high levels of blood glucose, also called blood sugar, resulting from defects in insulin production, insulin action, or both. Diabetes can lead to serious complications and premature death. The serious complications diabetes can be associated with include heart disease and stroke, high blood pressure, blindness, kidney disease, nervous system disease, amputations, dental disease, and complications of pregnancy. Diabetes was the seventh leading cause of death listed on U.S. death certificates in 2006. Overall, the risk of death among people with diabetes is about twice that of people without diabetes of a similar age (source: NIDDK, NIH).

The overall aim of this interdisciplinary research is to develop a series of fuzzy-set-theory-based data mining approaches for finding genetic, environmental and behavioral factors associated with diabetes. Simply put, researchers are working to develop statistical applications that will enhance data analysis. In this period, researchers further investigated FM-GA and CM-GA approach for gene microarray analysis. Using the most current cloud computing technology, they implemented a parallel genetic algorithm to compare with FM-GA and CM-GA. With parallel computing, a cluster of computers can work together on the same task. Thus, the computational resources (memory and CPU time) are increased. For this reason, algorithms with high demand of resources can be implemented on parallel computing platform. They may perform better than their counterparts on single computers. Since applying genetic algorithm on microarray data directly requires large amount of memory and CPU time, it cannot be done on a single computer. And that's why we designed FM-GA and CM-GA approach. Our research shows that FM-GA and CM-GA performs better or equally well as the parallel genetic algorithm on the data we used, in terms of classification accuracy. This confirms our approaches' effectiveness. Our next step is to improve FM-GA and CM-GA by leveraging the strength of cloud computing.

Also, during the reporting period, we set up the first cluster of cloud computing at UDC. This

established an example for the other research labs at UDC to implement cloud clusters and conduct research on it. Based on the documentation we produced, the Department of Computer Science and Information Technology at UDC was able to setup a larger scale computer cluster with sixteen computers. This cloud computing resource at UDC provides UDC students and community with cutting-edge research platform. The experiences students gain working on this platform gives them up-to-date skills to be placed in workforce. The department is in the process of joining SURA (Southern University Research Association) to share this cluster as computing resource with other institutions in the association.

This work is documented in the thesis of the Master student who worked on this project. We are developing a conference submission based on the cloud computing chapter of this thesis. So far as we know, we are the first that developed cloud-based genetic algorithms for microarray data analysis. We also published a journal manuscript in collaboration with Prof. Zhao Lu at Tuskegee University.

The following publications were made during this reporting period:

1. Journal Paper: Fuzzy-Inferenced Decisionmaking under Uncertainty and Incompleteness by Lily R. Liang, Carl G. Looney and Vinay Mandal, to appear in International Journal of Applied Soft Computing.
2. Journal Paper: Polychotomous kernel Fisher discriminant via top-down induction of binary tree, by Zhao Lu, Lily Rui Liang, Gangbing Song, Shufang Wang, Computers and Mathematics with Applications 60 (2010) 511-519.
3. Conference Paper: Cloud-based MapReduce Parallel Genetic Algorithm for Gene Microarray Data Analysis by Rommel A. Benites Palomino and Lily R. Liang. in preparation. Will be submitted to an international conference in 2011.

Nutrient Modulation of P53-ATF Signaling in Breast Cancer: According to the 2009 Cancer Facts and Figures published by the American Cancer Society (<http://www.cancer.org>), the incidence of cancer in African Americans is disproportionately high compared to other racial and ethnic groups. African Americans constitute 68% of the population of the District of Columbia (DC), and not coincidentally, DC ranks sixth in the Nation with the worst cancer morbidity and mortality (<http://www.cdc.gov>). Moreover, DC has the highest mortality rate in the Nation for breast and prostate cancers.

Vitamin E: Vitamin E includes a family of micronutrients consisting of four tocopherols and four tocotrienols (α, β, γ and δ) both of which are present in various components of the human diet. Tocotrienols are minor constituents of vitamin E but possess several more powerful anti-cancer, cholesterol lowering, natriuretic (prevent hypertension and cardiovascular diseases caused by salt intake) and neuroprotective properties that are often lacking in tocopherols. Despite possessing these preventive/therapeutic advantages, tocotrienols have not been extensively studied for prevention and treatment of breast cancer.

This breast cancer study examines the nutrient modulation of P53-ATF3 (agent) signaling in breast cancer. In short, the study examines tocotrienols, members of the Vitamin E family. These antioxidants are examined to determine anti-cancer, neuroprotective and cholesterol lowering properties. This study holds promise in identifying g-T3 as a chemo-preventative and chemotherapeutic agent in breast cancer and/or its role in inhibiting the progression of breast cancer. Also, the project provides an invaluable opportunity for UDC students to engage in cutting edge breast cancer research. During the period, researchers have continued investigating the mechanisms of action of antioxidants on cell death and other growth inhibitory pathways.

An Integrated Approach to Prevention of Obesity in High Risk Families (Multi-state Research): In recent years, overweightness and obesity have reached epidemic proportions in the United States. The proportion of adults who are overweight increased substantially between 1980 and 2002. By 2002, 65% of U.S. adults (20-74 yrs of age) were overweight and 31% were obese. Likewise,

obesity has become the most prevalent nutritional disease of children and adolescents. Children from low SES and racial/ethnic minority groups tend to have higher rates of obesity in comparison to other groups. Among adults, obesity rates are about 28% for men regardless of racial/ethnic group membership. Adult women have higher rates of obesity than males. Obesity rates are higher among Hispanic women (39%) than White women (31%) and even higher (50%) among African-American women. It is well known that chronic disease risks increase with increasing body weight.

In participation with this multi-state project, our research team's work involves the development of fuzzy-set-theory-based methodologies for the measurement of behavioral differences to identify key behaviors in childhood obesity. The identified behaviors will be used by health and nutrition professionals on this project team to develop an integrated strategy for childhood obesity prevention. In terms of education and preparing the workforce, this project trains students with cutting-edge technology in data mining and provides them with research experience in a multi-institutional and multi-disciplinary team.

AES researchers have developed a mobile version of MyHealth Journal software system. During the reporting period, researchers further developed the software system on mobile computing platforms for obesity data collection - iPhone and iPad. It is believed that the mobility of the software tool and the ease of data recording will bring a breakthrough to obesity research data collection and obesity management. The software system has been completed for iPad. Both the PC version and the iPad version are ready to be distributed to the community of researchers and end users.

Changing the Health Trajectory for Older Adults through Effective Diet and Activity Modifications (Multi-state Research): A large body of evidence suggests that regular exercise and a diet rich in fruit, vegetables and whole grains are associated with a lower incidence of age-related diseases such as cardiovascular disease, eye disease, and certain cancers as well as obesity. The importance of both endurance and strength-type exercises in older adults is increasingly being recognized for lowering the risk of sarcopenia, the age-related loss of muscle mass which can lead to disabilities and loss of independence. The purpose of this research is to motivate elderly Washington, D.C. residents to increase their consumption of fruits and vegetables through the development and evaluation of unique, fun-filled games, and to identify the determinants of food choices by designing a new Food Choice Questionnaire.

The specific objectives of this experiment are: (1) To investigate and compare the priorities of high fruit and vegetable consumers with low fruit and vegetable consumers; (2) to design new and innovative fun filled games and activities through which nutrition education can be effectively rendered; and (3) to collect traditional recipes from the elderly, modify the ingredients and method of cooking to improve the vegetable content and nutrient density, and publish a recipe book containing both the original and the modified recipes.

In this multi-state research project, we are participating with several institutions to include the University of Maryland; University of Rhode Island; University of Massachusetts; University of New Hampshire; Louisiana State University; and the University of the District of Columbia. Each institution is taking lead on various objectives established for the research project. Our multi-state team has a successful record of research focused on the health and nutrition of older adults, addressing their dietary needs with respect to fruit, vegetable and grain intake, and the affect of diet on biomarkers. During the reporting period, a survey instrument was field tested and validated for a test sample of 16 elderly African-American subjects. The field test determined that the process of administering the survey instrument disseminates nutritional knowledge to subjects.

Supplemental Nutrition Assistance Education Program (SNAP-Ed): The CES Center for Nutrition, Diet, and Health conducted 19,020 workshops, generating 273,096 contacts. The SNAP-Ed program provides orientation and training to teachers of preschool and elementary children and facilitators

in senior programs. Participants and families were provided with take home handouts, newsletters containing recipes, parent tips, and Health Kidz/Senior Corner activities, and food demonstrations designed to improve their ability to select healthy foods, safely handle food, and properly prepare and store foods at home.

Majorie A. Kinard, MA, Director of Shiloh Child Development Center, writes to Dr. Lillie Monroe-Lord, Head of the Center for Nutrition, Diet, and Health, "...I want to thank you for one of the most rewarding experiences I have ever had. Now I am a believer in the importance of good nutrition in the daily lives of us all. My parents and staff have made a complete turn in their life decision to be more concerned about healthy diets, nutrition, menus and portion sizes ... There are those of us in the community who have accepted your vision for families we serve. I thank you for the wonderful opportunity of working with your very competent professionals."

Workshops were conducted to encourage seniors to eat properly and engage in appropriate physical activities. Also, workshops were presented on food safety to include: basic sanitation; safe kitchen practices; hand washing; and utensils/health safety. Health-related materials were disseminated at Health Fairs, Health Bazaars, Parent Days, Community Centers, schools, and churches throughout the eight wards of the city.

The Center for Nutrition, Diet and Health within the Cooperative Extension Service, convened 52 class sessions, training 847 participants on the techniques to properly handle food, thereby decreasing risk factors associated with food borne illness. All of the program participants passed the post test and national examination to become a certified food handler in the District of Columbia.

Farmers' Market: CES continues to coordinate the University's Farmers' Market. The market operates on the campus front of the University on Saturdays from mid-May until early November. The 2010 market averaged five to six farmers per Saturday, along with five other vendors, selling goods such as art, jewelry, baked goods, flowers, seafood, and hot foods. The market also features live entertainment and food demonstrations. The Center for Nutrition, Diet and Health participates each Saturday and provides nutritional information to residents on the various fruits and vegetables offered for sale at the market. Further, nutritional specialists are on hand to discuss and disseminate information on the levels of fat, sugar, and sodium contained in foods.

The Cooperative Extension Service extension specialist who worked with residents on vermin issues resigned and the position has not yet been filled. Thus, the Asthma Program has been discontinued.

Urban Families, Youth, and Communities

There are a myriad of issues facing urban families, youth, and communities. The program focus is on financial literacy; youth leadership and development, basic home repair, and information and services related to co-op housing, and business education. Extension activities for the program include:

Basic Financial Planning: The Urban Families, Youth, and Communities Program includes Basic Financial Planning for residents of the District of Columbia. The CES program comes under the unit's Community Resource and Economic Development (CRED) program and has now partnered with the FDIC Money Smart Program. FDIC Money Smart Session includes 10 very relevant topics: Bank on It; Borrowing Basics; Check it Out; Money Matters; Pay Yourself; Keep it Safe; To Your Credit; Charge it Right; Loan to Own; and Your Own Home. Upon completion of the program, participants will be able to set up a budget; estimate expenses for a given period of time; set up a balanced budget; and set up a spending plan for a select period of time. The program objectives are to target criminogenic needs; address distorted beliefs, thinking, and behaviors; explore healthy alternative for pro-social behavior; and to provide hands-on, interactive experiences. The FDIC Money Smart Financial Planning Program will

serve high school students, starting in the 9th grade, as it is important to educators, financial experts, and parents to educate young people about financial planning now, before they are confronted with adult responsibilities. Sixty-Nine (69) financial literacy sessions were conducted in the community and five sessions were held for Junior and High School students in the District of Columbia.

Basic Home Repair: CRED conducts basic home repairs training for city residents, including senior citizens. The basic maintenance program provides District residents with knowledge and skills needed to perform repairs in and around their home. The program provides hands-on workshops in wall repair; toilet tank repair; leaky faucet repair; basic electricity; and replacing a sink and faucet. 40 basic home classes were taught with more than 280 residents finishing the home repair program and receiving a certificate identifying their ability to make minor adjustments in their homes.

The program manager/extension specialist for the CRED program abruptly retired in 2010, leaving unfinished business and thereby prohibiting us from reporting on impacts in some program areas, i.e. income tax planning, co-op housing, and business development/education.

The Center for 4H and Youth Development: The Center remains committed to establishing school and community based 4-H clubs in the District of Columbia. Youth are encouraged to participate in a variety of activities that emphasize the "learning by doing" experiential learning approach. Through various programs, youth gain knowledge in a variety of areas and develop important life skills. Such programs are implemented to help young people discover and develop leadership abilities, to cultivate civic stewardship, to foster confidence and to build successful lives. Also, the Center offers programs geared toward residents raising young children. 4-H clubs have been established in all eight wards of the city. These clubs are housed in more than 20 schools in the District of Columbia, including DC Public Schools, Charter Schools, and private institutions. 900 youth learned about the importance of responsibility through participation in 4-H activities. Camp and club activities for the Center follow:

Operation Military Kids (OMK): This project provides support to children of deployed parents. When National Guard, Army Reserve and other military parents living in civilian communities are mobilized, their children are suddenly faced with new challenges associated with their new lifestyle - the absence of their parent. 40% of the children we serve through this program report fears about unknown responsibilities. Thus, program activities were designed to build their sense of self-reliance and self-esteem. 20% of the youth reported an improvement in their confidence to perform in the absence of a parent.

4-H spring break and summer camp activities: 40 youth camped out for one week on a farm in nearby Maryland where they were given daily chores both for personal growth and in team groups. They were given pre and post-test about environmental issues and to gauge the kind of person they see themselves as in that kind of environment. The mostly urban youth expressed concerns about spiders, fear of the cows, unwillingness to tolerate the smells and a dislike for the outdoors. The week began on Monday, and by Wednesday, youth were asking for visits with Honey Bun, the cow. They learned to milk cows, make butter and yogurt, harvest vegetables and make salsa. Youth were taken deep into the woods to explore wildlife habitat of deer. Teams of three, consisting of two youths and one adult, canoed down the Potomac River to the water shed location.

Health Rocks Program: The program provides educational and informative activities to deter youth from illegal drug and tobacco use, 50 youths presented public forums to younger youth on selected activities learned from their participation in the program. During the reporting period, these trained program participants provided nine presentations, reaching more than 600 youth during the 2010 school year.

District of Columbia Relatives As Parents Program (RAPP): This is a support group that offers

encouragement and shares news, theories and common experiences to help parents cope with the responsibilities of parenting. Operating on the simple premise that talking to someone else can make us feel better; we function as an extended family. Support groups were established for grandparents in Wards 6, 7, and 8 of the city with a greater number of children being raised by relatives in low income environments. The Children's Health Project of DC program is located in ward 8. Meetings were held on the last Monday of every month from 6:00pm-7:00pm during which relative caregivers were provided resources and assistance with completing forms and applying for benefits for their grandchildren. Forty-Three (43) grandparents and 87 children are now receiving health care insurance as a result of using the information provided by CES.

Miner Elementary School's "It's Great to be Grand Grandparents Wellness Program" was established for grandparents and relative caregivers of Miner Elementary School and ward 6. The purpose of the program is to provide the Grandparent/caregivers with an opportunity to socialize with one another while participating in a variety of activities for caregivers as well as youth. The group met once a month during the morning hours.

Leckie Elementary School Relative as Partners (RAPP), our newest program location, met once a month in the afternoon. During sessions the group discussed issues related to the specific needs of their families. Childcare and dinner was provided at each meeting to allow caregivers a break from their everyday routine so they can focus on enjoying the company of others with similar concerns, and receiving information that encourages positive family growth and development.

Relatives as Parents Second Time Around Group met the 2nd Tuesday of each month at the Parent Resource Center in Ward 7. Each month a new topic was discussed based on the interest of the grandparent caregivers.

We partnered with the Kin Net grandparent support group in ward 7 where we held bi-weekly meetings with grandparent caregivers. Through the RAPP program and UDC Cooperative Extension Service extension agents provided workshops on various topics for the group meetings. Personal finance, basic home repairs, parenting discipline alternative, nutrition options and interactions with the school system that benefit the child were topics covered by agents to name a few.

We held our second annual contest for youth ages 5-18 to express their appreciation for a relative acting as a parent in their lives and write an essay, poem or draw a picture that shows their appreciation for a relative caregiver. Two participants from each age group were awarded \$100.00 gift cards. A booklet was created that displayed the children's poetry and art work.

We will continue to use the University of the District of Columbia's Cooperative Extension Service in providing support to RAPP programs. Through extension RAPP's participants are provided with research based information as well as hands on training in many areas including youth development, basic home repair, financial planning, water quality and nutrition; etc to name a few. We are expecting to serve between 125-175 new families next year and continue to serve the 92 current families through the Relatives as Parents Program.

Mrs. Rebecca Bankhead, state program leader for 4-H, has received several positive comments from the community, some of which are shared below:

Mr. Jermall Wright, Principal, Leckie Elementary School, Washington, DC writes, "I am writing to express my appreciation for the robots that 4-H donated to our school. These robots provided an enriched opportunity for our students. I witnessed teams of students using Robotic Guides and working together to build robots. I was truly impressed! When the students finished building their robots, they requested to display their hard work to an audience of students, parents, and the community. Their performance was

awesome! ... This gesture has provided these students with an opportunity to grow mentally and to build confidence when presented with a challenge."

Kristin Francini Walter, Director, Public Relations, National 4-H Council, writes to Extension Agent Christopher Coggins, "The Deputy Secretary and our CEO were singing your praises and had a fantastic time interacting with the kids from Sidwell and Hearst. They loved that you designed the event to have the 5th graders lead the other children through the experiment. Thanks again for all that you do to bring 4-H to the kids of the District. And, thank you for helping to connect Council to educators in DC who through your hard work with them now understand and value what great things 4-H can bring to their students."

Due to a lack of personnel as well as administrative issues, the following programs have been discontinued and are not being reported on for 2010: DC Reads; Ag in the Classroom; Hairbraiding and the Asthma project.

Our evaluation of programs for the year included pre and post tests, surveys, interviews, site visits and monitoring. CES has acquired clickers that will be used as another method of completing surveys. Using clickers will enable the agents to assess the participants' knowledge, provide immediate feedback and within seconds the agents can display a chart of the results. The clickers were used to assess change in behavior and conditions in focus group settings. Initially, training for CES agents who were new users of clickers was conducted by TurningPoint Technologies via a webinar. CES has since conducted follow-up training that consisted of one-on-one, hands-on with simulated situations for clicker usage. Most recently, the clickers were used at a Ward 8 Listening Session. Residents were asked various questions in reference to how CES could help them to enhance their quality of life through the activities that CES provides. The immediate results from the clickers showed the residents as well as management from CES and AES the activities the residents thought would be most beneficial to members of their community.

Total FTE's for CES programs were 55.1; scientist years for research total 3.2. Total expenditures for 2010 include: Extension - \$5.3M; Research - \$1.4M.

Total Actual Amount of professional FTEs/SYs for this State

Year: 2010	Extension		Research	
	1862	1890	1862	1890
Plan	31.8	0.0	1.7	0.0
Actual	55.1	0.0	3.2	0.0

II. Merit Review Process

1. The Merit Review Process that was Employed for this year

- Internal University Panel
- External University Panel
- External Non-University Panel

- Expert Peer Review

2. Brief Explanation

All research proposals submitted for Hatch Projects in the Agricultural Experiment Station are peer reviewed prior to submission to USDA for approval. The Peer Review Committee consists of a cross-discipline of University faculty, including colleges and departments such as engineering, environmental science, social sciences, biological sciences, and mathematics. An external non-University Panel to include members of the Station's Advisory Board were used to review proposals for sub-grantee awards under the Speciality Crop Grant Program.

Outreach Publications Review Process

All outreach publications such as fact sheets, newsletters, brochures, etc. must follow the standard review protocol established by the Dean of the College of Agriculture, Urban Sustainability and Environmental Sciences (CAUSES) and the University Communications and Marketing Department. An internal review by a peer and the Cooperative Extension Grant Writer must be completed, and then the document is submitted to the Marketing Specialist for further review for content and branding. The Marketing Specialist submits the document to the Dean for approval and then forwards it to the University's Communications and Marketing Department.

III. Stakeholder Input

1. Actions taken to seek stakeholder input that encouraged their participation

- Targeted invitation to traditional stakeholder groups
- Targeted invitation to non-traditional stakeholder groups
- Targeted invitation to traditional stakeholder individuals
- Targeted invitation to non-traditional stakeholder individuals
- Targeted invitation to selected individuals from general public
- Survey of traditional stakeholder groups
- Survey of traditional stakeholder individuals
- Survey of the general public

Brief explanation.

Collaboratively, the Agricultural Experiment Station and the Cooperative Extension Service are collecting and assessing stakeholder input in an effort to effectively address issues affecting the District of Columbia. Stakeholder Surveys are distributed and collected at community events, the University's Farmers' Market, workshops, and seminars. There are plans to continue upgrading the new website of the College of Agriculture, Urban Sustainability and Environmental Sciences (CAUSES), which include both AES and CES. The Associate Directors for Research and Extension continue to work with the College's marketing specialist to design and post a stakeholder survey at the website.

The first of several planned Community Listening Sessions, which we refer to as the "AES/CES Research and Extension Roadshow, " was held in one of the most economically depressed wards of the nation's capital, Ward 8. Neighborhoods in Ward Eight include Anacostia, Barry Farm, Bellview, Buena Vista, Congress Heights, Douglas, Fairlawn, Garfield Heights, (which consists of Parklands, Hunter Pines, Ridgecrest, and Manor Gardens), Knox Hill, Sheridan, Shipley Terrace, Washington Highlands, and Woodland. Ward Eight is the southernmost ward in the city and covers more than 4,000 acres. The average population for the Ward is 73,500 where 94%

of residents are Black, Non-Hispanic. The event was held in the Constituent Office for Ward 8. These sessions will be continued in 2011 in an effort to reach all wards of the city.

2(A). A brief statement of the process that was used by the recipient institution to identify individuals and groups stakeholders and to collect input from them

1. Method to identify individuals and groups

- Use Advisory Committees
- Use Internal Focus Groups
- Use External Focus Groups
- Needs Assessments
- Use Surveys

Brief explanation.

As the land-grant institution for the District of Columbia , our mission is to enhance the quality of life for our stakeholders through relevant research and outreach. Thus, critical thought has been given to individuals, groups, and organizations that we must serve/interact with to accomplish our mission. We consider the input of advisory committees, focus groups, surveys, and listening sessions results. Our stakeholders, internal and external, consist of the groups listed below.

Internal Stakeholders:

- Board of Trustees
- Administration (President, Provost, Vice Presidents, Deans, Chairs, Directors and their cabinets)
- Faculty
- Students
- Staff
- Alumni
- Advisory Boards

External Stakeholders:

- Residents of the District of Columbia
- City Government
- Community Partners (public and private)
- DC Public Schools
- Charter and Private Schools
- Local Businesses
- Faith-Based Community

2(B). A brief statement of the process that was used by the recipient institution to identify individuals and groups who are stakeholders and to collect input from them

1. Methods for collecting Stakeholder Input

- Meeting with traditional Stakeholder groups
- Survey of traditional Stakeholder groups
- Meeting with traditional Stakeholder individuals
- Survey of traditional Stakeholder individuals
- Meeting specifically with non-traditional groups
- Survey specifically with non-traditional groups
- Meeting with invited selected individuals from the general public

Brief explanation.

Methods for collecting stakeholder input include the following:

- Stakeholder Surveys
- Community Listening Sessions
- Advisory Committees
- Community Contacts
- Personal interactions with stakeholder at the Farmers' Market, Community Events, Workshop, Seminars, and Training

3. A statement of how the input will be considered

- In the Budget Process
- To Identify Emerging Issues
- Redirect Extension Programs
- Redirect Research Programs
- To Set Priorities

Brief explanation.

Input from stakeholders is shared with appropriate administrators, staff, and the advisory board. This data is used to determine continuous improvement efforts directed at addressing new issues and broadening or redirecting current research and extension program design and activities. Stakeholder input serves as the fine tuner to what we do in research and outreach, ensuring that we are adequately contributing to the quality of life for residents of our capital city.

We also use these suggestions to prioritize funding allocations while strengthening our Plan of Work to improve program impacts.

Brief Explanation of what you learned from your Stakeholders

Residents are eager to participate in listening sessions. Issues of importance expressed by residents follow:

- Young Adult Wellness
- Summer Programs for Youth

- Basic Spanish
- Support for Men Returning from Incarceration
- Domestic Violence
- Water Quality
- Youth Gardening
- Diabetes Prevention
- Nutrition Facts (Sodium and Sugar)
- Parental Support
- Caring for Pets
- Home Improvement
- Housing Cooperatives

However, the top three priorities continued to be health, nutrition, and youth violence, respectively. Residents have indicated their interest in organic vegetable gardens and herb gardens. Though some have a general knowledge and understanding of sustainable agriculture, they would like recommendations on the varieties of crops that can be successfully grown in the Washington Metropolitan area. Residents are also interested in having their soil sampled and desire simple methods to control pests in their gardens. Also, we learned that stakeholders feel that environmental conservation is a relative activity for students in DC Public schools. Stakeholders are interested in touring the farm and participating in harvesting activities. Lastly, residents have indicated that they enjoy the AES/CES Farmer's Market on campus during the summer and fall seasons.

IV. Expenditure Summary

1. Total Actual Formula dollars Allocated (prepopulated from C-REEMS)			
Extension		Research	
Smith-Lever 3b & 3c	1890 Extension	Hatch	Evans-Allen
1164278	0	798428	0

2. Totaled Actual dollars from Planned Programs Inputs				
Extension			Research	
	Smith-Lever 3b & 3c	1890 Extension	Hatch	Evans-Allen
Actual Formula	1483314	0	573929	0
Actual Matching	1483314	0	722124	0
Actual All Other	2358713	0	177000	0
Total Actual Expended	5325341	0	1473053	0

3. Amount of Above Actual Formula Dollars Expended which comes from Carryover funds from previous				
Carryover	319036	0	0	0

V. Planned Program Table of Content

S. No.	PROGRAM NAME
1	Natural Resources and the Environment
2	Urban Plants Production and Protection
3	Human Health and Nutrition, Healthy Urban Life Style, and Food Safety
4	Urban Families, Youth, and Communities

V(A). Planned Program (Summary)

Program # 1

1. Name of the Planned Program

Natural Resources and the Environment

V(B). Program Knowledge Area(s)

1. Program Knowledge Areas and Percentage

KA Code	Knowledge Area	%1862 Extension	%1890 Extension	%1862 Research	%1890 Research
102	Soil, Plant, Water, Nutrient Relationships	30%		0%	
111	Conservation and Efficient Use of Water	20%		0%	
112	Watershed Protection and Management	20%		0%	
124	Urban Forestry	10%		0%	
141	Air Resource Protection and Management	10%		0%	
402	Engineering Systems and Equipment	0%		100%	
806	Youth Development	10%		0%	
	Total	100%		100%	

V(C). Planned Program (Inputs)

1. Actual amount of professional FTE/SYs expended this Program

Year: 2010	Extension		Research	
	1862	1890	1862	1890
Plan	7.2	0.0	3.0	0.0
Actual	7.0	0.0	1.0	0.0

2. Actual dollars expended in this Program (includes Carryover Funds from previous years)

Extension		Research	
Smith-Lever 3b & 3c	1890 Extension	Hatch	Evans-Allen
258693	0	116048	0
1862 Matching	1890 Matching	1862 Matching	1890 Matching
258693	0	142216	0
1862 All Other	1890 All Other	1862 All Other	1890 All Other
94693	0	0	0

V(D). Planned Program (Activity)

1. Brief description of the Activity

- Workshops, demonstrations and technical assistance on the effect of environmental degradation on quality of life to the District residents; safe drinking water and invasive species.
- Development and distribution of informational materials such as fact sheets and brochures regarding changes in natural resources and environmental issues in the District.
- Establishment of partnership projects DC government and private organizations in and around the District of Columbia
- Research efforts in this reporting period for the project,"The Design and Development of an Experimental Anaerobic Digester for Organic Waste," concentrated on analyzing and comparing the energy content and anticipated Gas yield of Bio-gas from various animals (livestock waste).

2. Brief description of the target audience

- * District of Columbia residents
- *DC Public School Teachers
- *Youth - Grades K-12
- *Urban Gardeners and foresters
- *Storm and waste water operators
- *Landscapers
- *Nursery Owners

V(E). Planned Program (Outputs)

1. Standard output measures

2010	Direct Contacts Adults	Indirect Contacts Adults	Direct Contacts Youth	Indirect Contacts Youth
Plan	20000	25000	10000	25000
Actual	18785	360669	19000	26000

2. Number of Patent Applications Submitted (Standard Research Output)

Patent Applications Submitted

Year: 2010
 Plan: 0
 Actual: 0

Patents listed

3. Publications (Standard General Output Measure)

Number of Peer Reviewed Publications

2010	Extension	Research	Total
Plan	2	2	
Actual	0	3	3

V(F). State Defined Outputs

Output Target

Output #1

Output Measure

- Number of articles published

Year	Target	Actual
2010	4	1

Output #2

Output Measure

- Number of fact sheets published

Year	Target	Actual
2010	10	14

Output #3

Output Measure

- Number of newsletter published

Year	Target	Actual
2010	2	0

Output #4

Output Measure

- Number of workshops, demonstrations and technical assistance implemented.

Year	Target	Actual
2010	100	174

Output #5

Output Measure

- Number of research projects completed

Year	Target	Actual
2010	2	0

Output #6

Output Measure

- Number of soil, air and water samples test results
Not reporting on this Output for this Annual Report

Output #7

Output Measure

- Number of informational materials distributed

Year	Target	Actual
2010	25000	21238

Output #8

Output Measure

- Number of conference presentations

Year	Target	Actual
2010	5	6

V(G). State Defined Outcomes

V. State Defined Outcomes Table of Content

O. No.	OUTCOME NAME
1	Percent of program participants that will become more environmentally aware due to new knowledge from informational materials provided and workshop presentations
2	Percent of program participants that will implement new environmental skills to improve natural resources and the environment
3	Percent of soil, air, and water samples meeting EPA standards after implementation of research project.

Outcome #1

1. Outcome Measures

Percent of program participants that will become more environmentally aware due to new knowledge from informational materials provided and workshop presentations

2. Associated Institution Types

- 1862 Extension

3a. Outcome Type:

Change in Knowledge Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2010	50	50

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

In the absence of a rural environment, urban dwellers may not be as acquainted with the natural resources that surround them. Without proper knowledge and understanding, residents may bring harm to themselves and/or the environment. Thus, there is a need to provide basic environmental education as it pertains to water quality issues, urban forestry and/or gardening, and general stewardship.

What has been done

In conjunction with the city's Rock Creek Park, a class on "Invasive Species" was conducted for 25 residents. Thirteen (13) Invasive Species Fact Sheets were compiled into booklets and distributed throughout the District. The concept of an invasive species was introduced to four (4) elementary/middle school classes, approximately 60 students. Workshops and demonstrations were provided for 800 youth and 446 adults on issues related to water quality and water testing. Pre and posts tests were given to participants to determine knowledge.

Results

The participants learned what qualifies a species as invasive, the harm that invasive species cause, the ways in which they are spread, the different abatement techniques, as well as specific information for 19 invasive plants, pests and pathogens. All 25 trainees used their knowledge and participated in an invasive species removal project in parks in the District of Columbia. Along with 50 other volunteers, it is estimated that the project resulted in the removal of invasive species from an estimated 32 acres of District parkland. The results of the pre and posts test given to program participants in water quality workshops indicate that at least 50% of attendees increased their knowledge of drinking water issues. Scores on the post test were raised by 65%.

4. Associated Knowledge Areas

KA Code	Knowledge Area
102	Soil, Plant, Water, Nutrient Relationships
111	Conservation and Efficient Use of Water
112	Watershed Protection and Management
124	Urban Forestry

Outcome #2

1. Outcome Measures

Percent of program participants that will implement new environmental skills to improve natural resources and the environment

2. Associated Institution Types

- 1862 Extension

3a. Outcome Type:

Change in Action Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2010	25	100

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

Living in a totally urban environment oftentimes results in residents not being readily connected to the natural resources that surround them. As a means to familiarize DC residents with their urban ecosystem, the Environment and Natural Resources unit within the Cooperative Extension Service offers workshops and demonstrations that help to acquaint or reacquaint urbanites with natural resources through workshops, demonstrations, and literature dissemination.

What has been done

The Cooperative Extension Service co-taught an invasive species class of 25 with the Natural Resource Manager of the District's Rock Creek Park. Participants learned what qualifies a species as invasive, the harm that invasive species cause, the ways in which they are spread, the different abatement techniques, as well as specific information for 19 invasive plants, pests and pathogens.

Results

The 25 participants trained, along with 50 other city residents, participated in six (6) invasive species removal days in Rock Creek Park, Pope Branch Park, and a DC Parks and Recreation site in the District of Columbia, removing invasive species from an estimated 32 acres of District of Columbia parkland. Using the rate at which volunteer hours are valued in the District, the 75 volunteers donated the equivalent of \$4,911. This was leveraged by the in-kind contribution of

the assigned Extension Agent's hours; a conservative figure of the salary match is \$12,800.

4. Associated Knowledge Areas

KA Code	Knowledge Area
102	Soil, Plant, Water, Nutrient Relationships
111	Conservation and Efficient Use of Water
112	Watershed Protection and Management
124	Urban Forestry
141	Air Resource Protection and Management

Outcome #3

1. Outcome Measures

Percent of soil, air, and water samples meeting EPA standards after implementation of research project.

Not Reporting on this Outcome Measure

V(H). Planned Program (External Factors)

External factors which affected outcomes

- Economy
- Other (personnel changes)

Brief Explanation

The new Environmental Testing lab is still under renovation and should be completed by June 2011. This lab will serve the research and training needs of our faculty and students by integrating statistically analyzed quantitative data, generated from monitoring, and with mathematical models, interfaced with GIS, justify science based policies that impact the residents of the District of Columbia. The lack of external funding to conduct random testing of environmental parameters has unfortunately prevented us from meeting the set goal to test 1000 soil water plant and air sample. When completed, the lab will allow to implement this target goal.

In October of 2010, the Specialist and Supervisor for the Environment and Natural Resources Unit resigned. Due to the organizational changes and transition to the new College of Agriculture Urban Sustainability and Environmental Sciences, that position has not been filled. This has affected our outcomes related to pesticide training and safety as well as publication development. We anticipate filling the position by October, 2011.

V(I). Planned Program (Evaluation Studies and Data Collection)

1. Evaluation Studies Planned

- Before-After (before and after program)

Evaluation Results

Pre and Post tests were given to water quality workshop participants. On the average, post test scores were raised by 65% for at least 50% of the participants.

Key Items of Evaluation

CES has acquired clickers that will be used as another method of completing surveys. Using clickers will enable the agents to assess the participants' knowledge, provide immediate feedback and within seconds the agents can display a chart of the results. The clickers were used to assess change in behavior and conditions in focus group settings. Initially, training for CES agents who were new users of clickers was conducted by TurningPoint Technologies via a webinar. CES, has since, conducted follow-up training that consisted of one-on-one, hands-on with simulated situations for clicker usage. Most recently, the clickers were used at the Ward 8 Listening Session. Residents were asked various questions in reference to how CES could help them to enhance their quality of life through the activities that CES provides. The immediate results from the clickers (activities the residents thought would be most beneficial to members of their community) were displayed for the residents as well as AES and CES management staff to review.

V(A). Planned Program (Summary)

Program # 2

1. Name of the Planned Program

Urban Plants Production and Protection

V(B). Program Knowledge Area(s)

1. Program Knowledge Areas and Percentage

KA Code	Knowledge Area	%1862 Extension	%1890 Extension	%1862 Research	%1890 Research
102	Soil, Plant, Water, Nutrient Relationships	20%		50%	
205	Plant Management Systems	20%		50%	
216	Integrated Pest Management Systems	20%		0%	
721	Insects and Other Pests Affecting Humans	20%		0%	
806	Youth Development	20%		0%	
	Total	100%		100%	

V(C). Planned Program (Inputs)

1. Actual amount of professional FTE/SYs expended this Program

Year: 2010	Extension		Research	
	1862	1890	1862	1890
Plan	4.0	0.0	3.0	0.0
Actual	3.9	0.0	1.0	0.0

2. Actual dollars expended in this Program (includes Carryover Funds from previous years)

Extension		Research	
Smith-Lever 3b & 3c	1890 Extension	Hatch	Evans-Allen
148909	0	0	0
1862 Matching	1890 Matching	1862 Matching	1890 Matching
148909	0	0	0
1862 All Other	1890 All Other	1862 All Other	1890 All Other
170157	0	177000	0

V(D). Planned Program (Activity)

1. Brief description of the Activity

- Conducted field experiments in the use of composted waste as a soil amendment for growing vegetables in urban gardens and their impact on the environment will be conducted at Muirkirk Research Farm in Beltsville, MD
- Facilitated workshops, training sessions, demonstrations, field activities, and farm tours for program participants to teach and update knowledge of sustainable agricultural techniques to establish, maintain, and protect both vegetable and flower gardens
- Developed and distributed informational fact sheets, brochures, and newsletters related to production and protection of urban gardens
- Participated in local, national, and international conferences and meetings on sustainable agriculture and urban gardening
- Trained and certified Master Gardeners; conducted city beautification projects

2. Brief description of the target audience

- District of Columbia residents
- DC Public School Teachers
- Youth - Grades 3-8
- urban community gardeners
- small rural farmers, Mid Atlantic and SARE (Sustainable Agriculture Research Education)
- landscapers
- nursery owners

V(E). Planned Program (Outputs)

1. Standard output measures

2010	Direct Contacts Adults	Indirect Contacts Adults	Direct Contacts Youth	Indirect Contacts Youth
Plan	25000	35000	10000	15000
Actual	13827	73369	19000	26000

2. Number of Patent Applications Submitted (Standard Research Output)

Patent Applications Submitted

Year: 2010
 Plan: 0
 Actual: 0

Patents listed

3. Publications (Standard General Output Measure)

Number of Peer Reviewed Publications

2010	Extension	Research	Total
Plan	2	2	

Actual	0	0	0
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V(F). State Defined Outputs

Output Target

Output #1

Output Measure

- Number of articles published
Not reporting on this Output for this Annual Report

Output #2

Output Measure

- Number of fact sheets published

Year	Target	Actual
2010	10	14

Output #3

Output Measure

- Number of Newsletters published
Not reporting on this Output for this Annual Report

Output #4

Output Measure

- Number of workshops, demonstrations and technical assistance implemented.

Year	Target	Actual
2010	100	305

Output #5

Output Measure

- Number of research projects completed

Year	Target	Actual
2010	2	1

Output #6

Output Measure

- Number of soil, plant and water samples test results
Not reporting on this Output for this Annual Report

Output #7

Output Measure

- Number of informational materials distributed

Year	Target	Actual
2010	25000	14439

Output #8

Output Measure

- Number of conference presentations

Year	Target	Actual
2010	6	3

V(G). State Defined Outcomes

V. State Defined Outcomes Table of Content

O. No.	OUTCOME NAME
1	Percent of program participants that will adapt new knowledge of urban gardening from informational materials provided and workshop presentations
2	Percent increase in urban gardens using some compost material as a soil amendment
3	Percent of workshop and training participants that will become certified Pesticide applicator
4	Percent of soil, plant and water sample results within acceptable crop production range
5	Percentage increase in youth's knowledge about planting and cultivating vegetable plants and flowers.

Outcome #1

1. Outcome Measures

Percent of program participants that will adapt new knowledge of urban gardening from informational materials provided and workshop presentations

2. Associated Institution Types

- 1862 Extension
- 1862 Research

3a. Outcome Type:

Change in Action Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2010	50	100

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

There is a public demand for unbiased horticultural and Integrated Pest Management education for sustainable landscapes and gardens and conservation of natural resources. The DC Master Gardener Program was started as a means of extending the horticultural and pest management expertise of the DC Cooperative Extension Service to the general public. The program is designed to train volunteer horticultural educators.

What has been done

Thirty-seven (37) participants received 40 hours of basic horticulture training (which includes such topics as botany, soils, entomology, plant pathology, pesticides, vegetable, herbs, landscape design etc.) and then agreed to work in their communities to teach District of Columbia residents how to cultivate garden spaces and manage landscapes sustainably using research-based information. This environmental horticulture approach reduces fertilizer and pesticide use resulting in improved soil and water quality.

Results

Of the thirty-seven (37) participants, 100% passed the final exam, completed 40 hours of basic training and 50 hours of volunteer hours. In 2010, 187 (which includes 37 trainees) Master Gardeners and Trainees provided 9,350 hours of horticultural expertise to the District of Columbia. The value of volunteer time is \$32.74 per hour according to www.independentsector.org with a total value of \$306,119 in savings to the District of Columbia. Various Master Gardener projects throughout all eight wards have been established which include schools, parks, beautification projects, landscape design, youth gardens, local and national botanical gardens, a hospice/nursing home, and partnerships with non-profit organizations.

4. Associated Knowledge Areas

KA Code	Knowledge Area
102	Soil, Plant, Water, Nutrient Relationships
205	Plant Management Systems
216	Integrated Pest Management Systems
721	Insects and Other Pests Affecting Humans

Outcome #2

1. Outcome Measures

Percent increase in urban gardens using some compost material as a soil amendment

2. Associated Institution Types

- 1862 Extension
- 1862 Research

3a. Outcome Type:

Change in Knowledge Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2010	25	100

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

In the District of Columbia, economically depressed neighborhoods are often located in food desert areas, thus there is a need for these residents to grow their own fresh vegetables in gardens. The drawback is that they often resort to conventional agriculture, using inorganic fertilizers and toxic chemicals to control plant pests. The sustainable agriculture research program in AES and the Natural Resources and the Environment unit of CES, conducts workshops and demonstrations to assist DC gardeners with safe, proper techniques.

What has been done

The Agricultural Experiment Station's Sustainable Agriculture Research Program conducted workshops to teach gardeners an alternative way to produce fresh vegetables in their gardens without using chemical that will pollute their environment. Four field days/workshops were conducted during the growing season at the farm site. 170 teachers and students attended the Urban Agricultural Fair at Muirkirk Farm. The Cooperative Extension Service worked with residents to install gardens in each ward of the city.

Results

100% of the eight (8) community gardens serviced by CES throughout the wards of the city are using compost material as a soil amendment in their gardens. The gardens featured traditional

cold and warm weather crops as well as ethnic and specialty crops. Youth were involved in the planting process.

4. Associated Knowledge Areas

KA Code	Knowledge Area
102	Soil, Plant, Water, Nutrient Relationships
205	Plant Management Systems

Outcome #3

1. Outcome Measures

Percent of workshop and training participants that will become certified Pesticide applicator

Not Reporting on this Outcome Measure

Outcome #4

1. Outcome Measures

Percent of soil, plant and water sample results within acceptable crop production range

Not Reporting on this Outcome Measure

Outcome #5

1. Outcome Measures

Percentage increase in youth's knowledge about planting and cultivating vegetable plants and flowers.

2. Associated Institution Types

- 1862 Extension

3a. Outcome Type:

Change in Knowledge Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2010	{No Data Entered}	20

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

Many youth in the District of Columbia have not been exposed to home gardening and, therefore, have limited knowledge about how to plant and care for different types of plants, i.e. vegetables and flowers. Working with youth to expose them to vegetable plants and flowers provides hands-on experience and knowledge which will allow them to participate in school, home, and community garden projects with their families and community.

What has been done

98 students, grade K-8th, attended planting sessions at the New Community for Children Project, an activity serving primarily African-American residents in the Shaw-Howard neighborhood of the city. The youth worked with Master Gardeners, the U.S. Botanic Garden's children program, and an intergenerational garden. Collectively, these activities provided a relevant educational activity for the youth and adults involved.

Results

95% of students reported that they learned a lot about the garden and how to eat healthy; 93% of students reported that they told their parents something new they learned during the summer; 100% of parents reported being "very satisfied" on parent surveys; 22 recipes cooked by the students; 15 feet of sunflowers were grown; 20% increase in knowledge test about plants when comparing pre- and post- tests.

4. Associated Knowledge Areas

KA Code	Knowledge Area
102	Soil, Plant, Water, Nutrient Relationships
806	Youth Development

V(H). Planned Program (External Factors)

External factors which affected outcomes

- Other (Personnel change)

Brief Explanation

The new Environmental Testing lab is still under renovation and should be completed by June 2011. This lab will serve the research and training needs of our faculty and students by integrating statistically analyzed quantitative data, generated from monitoring, and with mathematical models, interfaced with GIS, justify science based policies that impact the residents of the District of Columbia. The lack of external funding to conduct random testing of environmental parameters has unfortunately prevented us from meeting the set goal to test 1000 soil water plant and air sample. When completed, the lab will allow to implement this target goal.

In October of 2010, the Specialist and Supervisor for the Environment and Natural Resources Unit resigned. Due to the organizational changes and transition to the new College of Agriculture Urban Sustainability and Environmental Sciences, that position has not been filled. This has affected our outcomes related to pesticide training and safety. We anticipate filling the position by October, 2011.

V(I). Planned Program (Evaluation Studies and Data Collection)

1. Evaluation Studies Planned

- Other (site visits/monitoring; interviews)

Evaluation Results

Gardeners are using composted materials as a soil amendment and experienced good yields. Urban gardeners want to protect the environment and their food.

Key Items of Evaluation

CES has acquired clickers that will be used as another method of completing surveys. Using clickers will enable the agents to assess the participants' knowledge, provide immediate feedback and within seconds the agents can display a chart of the results. The clickers were used to assess change in behavior and conditions in focus group settings. Initially, training for CES agents who were new users of clickers was conducted by TurningPoint Technologies via a webinar. CES, has since, conducted follow-up training that consisted of one-on-one, hands on with simulated situations for clicker usage. Most recently, the clickers were used at Ward 8 Listening Session. Residents were asked various questions in reference to how CES could help them to enhance their quality of life through the activities that CES provides. The immediate results from the clickers showed the residents as well as management from CES and AES the activities the residents thought would be most beneficial to members of their community.

V(A). Planned Program (Summary)

Program # 3

1. Name of the Planned Program

Human Health and Nutrition, Healthy Urban Life Style, and Food Safety

V(B). Program Knowledge Area(s)

1. Program Knowledge Areas and Percentage

KA Code	Knowledge Area	%1862 Extension	%1890 Extension	%1862 Research	%1890 Research
703	Nutrition Education and Behavior	30%		25%	
704	Nutrition and Hunger in the Population	10%		0%	
712	Protect Food from Contamination by Pathogenic Microorganisms, Parasites, and Naturally Occurring Toxins	10%		0%	
721	Insects and Other Pests Affecting Humans	10%		0%	
724	Healthy Lifestyle	20%		75%	
806	Youth Development	20%		0%	
	Total	100%		100%	

V(C). Planned Program (Inputs)

1. Actual amount of professional FTE/SYs expended this Program

Year: 2010	Extension		Research	
	1862	1890	1862	1890
Plan	8.7	0.0	1.9	0.0
Actual	21.2	0.0	1.2	0.0

2. Actual dollars expended in this Program (includes Carryover Funds from previous years)

Extension		Research	
Smith-Lever 3b & 3c	1890 Extension	Hatch	Evans-Allen
537047	0	457881	0
1862 Matching	1890 Matching	1862 Matching	1890 Matching
537047	0	579908	0
1862 All Other	1890 All Other	1862 All Other	1890 All Other
1782187	0	0	0

V(D). Planned Program (Activity)

1. Brief description of the Activity

Changing the Health Trajectory for Older Adults through Effective Diet and Activity Modifications:

- A survey questionnaire was constructed to address intervention strategies that will increase fruit, vegetable, and whole grain consumption in the multicultural elderly population in the District of Columbia.
- The constructed survey was field tested and validated for a test sample of elderly African-American subjects.

Developing Fuzzy-set-theory-based Data Mining Methodologies for Diabetes Data Analysis:

- Further develop X-test family, which includes FM-test, CM-test and MDCM-test, for numerical non-microarray diabetes data
- Implementation of a parallel genetic algorithm to compare with FM-GA and CM-GA

Obesity Prevention Behavioral Measures:

- Further development of Mobile version of MyHealth Journal Software System for obesity data collection - iPhone and iPad.

Nutrient Modulation of P53-ATF3 Signaling in Breast Cancer:

- Investigation of the molecular mechanism whereby g-T3 inhibits the growth of breast cancer cells
- Gene expression microarray analysis
- Manuscript submission for publishing in the Journal of Nutritional Biochemistry

Supplemental Nutrition Assistance Program (SNAP-Ed):

The Supplemental Nutrition Assistance-Education (SNAP-Ed) provided training and technical assistance to 461 teachers in 461 classrooms in day care and head start programs.

• Train-the-trainer method is used - nutrition educator trains teachers and teachers conduct nutrition and food safety activities with the children.

• The curriculums used include FFNews, Creative Curriculum, Color Me Healthy, Tickle Your Appetite, 5 to 11 A Day, 48 Food Safety & Dietary Quality Lessons (now Nutrition Essentials), and the 8 series Fit Kitz DVDs for 2-5 and 8-10 years of age, and elderly participants.

- Food demonstrations and cooking in the classroom activities with the children and teachers
- Bi-monthly newsletter to parents highlighting classroom activities
- Monthly nutrition and nutrition activities with parents
- Focus groups with teachers and also with parents to evaluate progress and to determine change in knowledge and behavior

- Retrospect pre/post test evaluations.

Food Handler Certification:

- 20-hours of classroom instructions on safe food handling and foodborne illness
- Instructions on DC Code and Examination
- Administers the national Professional Food handler Examination to participants who successfully complete the classroom instructions
 - Pretest, Post test, food code exam, and national exam administered
 - Follow up to determine if improvements in food inspection score as a result of the training and certification activities

2. Brief description of the target audience

- Adult men and women over the age of 65 who live in Metropolitan Washington, DC
- Computer Scientists and Biologists who focus of microarray data analysis and diabetes
- DC Public School teachers
- Students, grades Pre-K through 9
- Children 2 -5 years of age
- Pre-School/Headstart and Daycare teacher volunteers
- Non-commercial agency staff members
- Ongoing participating food handlers
- Non-profits
- Residential Homes
- Children, ages 2 - 12, and families who reside in area of the District where asthma percentage is high
- Overweight individuals and non overweight individuals from the same environment
- Obese individuals and non obese individuals from the same environment
- Low income residents living in multi-family housing

- Researchers/Biologists

V(E). Planned Program (Outputs)

1. Standard output measures

2010	Direct Contacts Adults	Indirect Contacts Adults	Direct Contacts Youth	Indirect Contacts Youth
Plan	1600	250	7400	0
Actual	204822	42671	68274	14224

2. Number of Patent Applications Submitted (Standard Research Output)

Patent Applications Submitted

Year: 2010
 Plan: 0
 Actual: 0

Patents listed

3. Publications (Standard General Output Measure)

Number of Peer Reviewed Publications

2010	Extension	Research	Total
Plan	0	1	
Actual	0	2	0

V(F). State Defined Outputs

Output Target

Output #1

Output Measure

- Development of new or improvement of existing tools for measuring the effectiveness of the interventions targeted to childhood overweight in low income families.
Not reporting on this Output for this Annual Report

Output #2

Output Measure

- Identification of objective, physiological-based measures that correspond to target behaviors (bio-behavioral markers) for use later as measures of intervention progress and success or means for tailoring interventions in ways that will be most effective for specific groups and subgroups.
Not reporting on this Output for this Annual Report

Output #3

Output Measure

- Eight Workshops for teachers in the Ag in the Classroom Project
Not reporting on this Output for this Annual Report

Output #4

Output Measure

- Curriculum developed for various workshops, fact sheets for nutrition education for teachers.

Year	Target	Actual
2010	10	22

Output #5

Output Measure

- Train the Trainer Food Stamp Educational Workshops: 2 hours a week by teacher volunteers; FFNews; Creative Curriculum; Color Me Healthy; Tickle Your Appetite; 5 A Day; DCPS Nutrition Curriculums; and Development of Food Safety and Dietary Quality Lessons

Year	Target	Actual
2010	12	36

Output #6

Output Measure

- IRB Committee; Development of Instruments; Training on Instruments; Recruitment of project participants; Selected interventions; Review of data Data analysis; Report development - 250 Overweight and Obese individuals 150 Non Overweight and Obese individuals from the same environment Parents of participants.
Not reporting on this Output for this Annual Report

Output #7

Output Measure

- Asthma education for District residents: how to improve the quality of indoor air; Newsletters; Fact Sheets, and home audits will be provided to Districts residents.
Not reporting on this Output for this Annual Report

Output #8

Output Measure

- Number of residents who are aware of the CES Asthma Project.
Not reporting on this Output for this Annual Report

Output #9

Output Measure

- Number of residents participating in CES Asthma Project activities in their homes.
Not reporting on this Output for this Annual Report

Output #10

Output Measure

- Number of residents who are able to identify issues in their homes related to asthma as a result of the CES Asthma project.
Not reporting on this Output for this Annual Report

Output #11

Output Measure

- Classroom instruction/workshops (20 clock hours) on Food Handler Certification Regulations to include DC Code Examination, National Examination or Serve Safe National Examination, and Practice Examinations

Year	Target	Actual
2010	300	772

Output #12

Output Measure

- Design and employ a food questionnaire to identify portion sizes and quantity of fruits and

vegetables for registered participants

Year	Target	Actual
2010	1	1

Output #13

Output Measure

- Assess four day food diary data for the number of portions of fruits and vegetables for registered participants
Not reporting on this Output for this Annual Report

Output #14

Output Measure

- Establish intervention/focus groups for registered participants consuming less than 5 servings of fruits and vegetables per day and identify the determinants of low consumption of fruits and vegetables.
Not reporting on this Output for this Annual Report

Output #15

Output Measure

- Design and implement educational classes to assist registered participants with improving consumption of fruits and vegetables
Not reporting on this Output for this Annual Report

V(G). State Defined Outcomes**V. State Defined Outcomes Table of Content**

O. No.	OUTCOME NAME
1	Advances in the study of obesity, particularly an understanding of various inputs and interactions of family and child, SES, nutrition, physiology and behavior, will result from this work, opening doors of opportunity for development of effective solutions to reverse trends in childhood obesity.
2	Percentage of student participants who have increased knowledge as to where and how food is grown.
3	Percentage of students and teachers in grades Pre-K with increased agriculture literacy.
4	Number of teachers who have increased their awareness, knowledge, and understanding of agriculture, nutrition, and food gardening.
5	Percentage of participants with increased knowledge of the Food Guide Pyramid and Dietary Guidelines for Americans.
6	Percentage of participants with increased knowledge of nutrition of various fruits and vegetables
7	Percentage of parent participants who make better food choices (fruits/vegetables).
8	Percentage of decrease in the risk factors food borne illness.
9	Number of participants gaining awareness, knowledge and skills in Food Handling techniques.
10	Number of participants scoring a required minimum of 70% on post test and national examination.
11	Percentage of participants who improved eating habits.
12	Percentage of decrease in the incidences of obesity in the District of Columbia
13	Number of participants gaining awareness, knowledge, and skills in nutrition and agriculture.
14	Number of residents who have applied knowledge to alleviate vermin in their homes.
15	Number of residents who have made changes, i.e. elimination of secondhand smoke, removal of mold and/or mildew, and/or sanitation measures, in their homes as a result of information received from participating in the CES Asthma Project.
16	Improved techniques for analyzing data that may lead to increased understanding of diabetes and the development of strategies to prevent and control diabetes.
17	Development and publishing of a recipe book that will be instrumental in assisting older adults with vegetable and fruit dietary requirements

18	Number of participants who have increased their daily intake of fruits and vegetables
19	Identification of nutrient modulation leading to broad applications for the inhibition of breast cancer cell proliferation and possibly cell transformation
20	Development of fuzzy-set-theory-based methodologies for the measurement of behavioral differences.
21	Development of Mobile version of MyHealth Journal Software System

Outcome #1

1. Outcome Measures

Advances in the study of obesity, particularly an understanding of various inputs and interactions of family and child, SES, nutrition, physiology and behavior, will result from this work, opening doors of opportunity for development of effective solutions to reverse trends in childhood obesity.

Not Reporting on this Outcome Measure

Outcome #2

1. Outcome Measures

Percentage of student participants who have increased knowledge as to where and how food is grown.

Not Reporting on this Outcome Measure

Outcome #3

1. Outcome Measures

Percentage of students and teachers in grades Pre-K with increased agriculture literacy.

Not Reporting on this Outcome Measure

Outcome #4

1. Outcome Measures

Number of teachers who have increased their awareness, knowledge, and understanding of agriculture, nutrition, and food gardening.

Not Reporting on this Outcome Measure

Outcome #5

1. Outcome Measures

Percentage of participants with increased knowledge of the Food Guide Pyramid and Dietary Guidelines for Americans.

2. Associated Institution Types

- 1862 Extension

3a. Outcome Type:

Change in Knowledge Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2010	50	80

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

Families and individuals in the District of Columbia need to increase their knowledge and enhance their lifestyles as it relates to proper diet and healthy eating using the Dietary Guidelines for Americans and MyPyramid-Steps to a Healthier You. The Supplemental Nutrition Assistance Program (SNAP-Ed) provides nutrition education to preschool and elementary children and their families and seniors who receive and/or are eligible for food stamps.

What has been done

SNAP-Ed Nutrition Educators and the Project Coordinator designed and provided orientation and training to teachers of preschool and elementary children and facilitators in senior programs in separate groups prior to implementing the SNAP-Ed activity in the classroom and at least one additional time during the fiscal year, usually after six months. Training and technical assistance is offered and may be requested at any time. Topics, where applicable, included Description of DC SNAP-Ed Program; Purpose, Goals, and Objectives of DC SNAP-Ed; Correlates of the Curriculum Packages with the SNAP-Ed 48 Lesson Guide; Sample Lesson Plans; Accessing SNAP-Ed Resources (e.g., Food Coupons and SNAP-Ed Bi-monthly Newsletter Updates with Recipes, Parent Tips, and Healthy Kidz/Seniors Corner Activities); Report Forms; Teacher Pre and Post-tests; Child/Participant Evaluation Forms; SNAP-Ed Family Activities; etc. Curriculum topics that are specific to food safety include: Basic Sanitation, Safe Kitchen Practices, Hand Washing, and Utensils/Health Safety.

Results

A total of 19,020 workshops were conducted generating 273,096 direct contacts. 65.8% of participants increased knowledge of the MyPyramid and Dietary Guidelines of Americans. 100% of participants increased knowledge of nutrition of various vegetables and fruits; 66% of parents improved the family food choices.

4. Associated Knowledge Areas

KA Code	Knowledge Area
703	Nutrition Education and Behavior

Outcome #6

1. Outcome Measures

Percentage of participants with increased knowledge of nutrition of various fruits and vegetables

2. Associated Institution Types

- 1862 Extension

3a. Outcome Type:

Change in Knowledge Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2010	50	75

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

The District of Columbia has one of the largest obesity problems in the nation. It is the belief of health professionals that the problem of obesity contributes to other health issues that are highly prevalent in the Black community and especially in the District and among senior citizens, parents and children i.e. Type 2 diabetes, cancer, coronary heart disease hypertension, etc. To address this problem interventions have been designed to encourage seniors, parents and children to eat fruits and vegetables, whole grains, and nonfat or low-fat milk or milk products every day, be physically active every day as part of a healthy lifestyle and to balance calorie intake from foods and beverages with calories expended. Specifically to the problem was designed to assist participants change their eating habits.

What has been done

Snap-Ed Nutrition Educators and the Project Coordinator designed age appropriate materials to encourage seniors to eat properly and engage in appropriate physical activities. Specifically, the objectives of the interventions were to increase knowledge in the following areas: MYPyramid and Dietary Guidelines of Americans; food choices, nutrition of various fruits and vegetables, food handling skills, eating habits. A Show-Me-How Manual was developed to illustrate appropriate procedures to implement age appropriate physical activities. Menus were developed to illustrate how to prepare appetizing meals with commodities. A calendar was developed to provide menus to address health issues for each month of the year. Workshops have been conducted by Nutrition educators to teach participants how to read food label and how to shop to maximize their food stamps. Workshops were also presented on food safety: Basic Sanitation, Safe

Kitchen Practices, hand Washing and Utensils/Health Safety. Nutrition and Health-related Materials were disseminated at Health Fairs, Health Bazaars, Parent Days, Community Centers, schools and churches.

Results

Focus groups with parents of the participants from 14 randomly selected schools of the preschoolers revealed the following:

- . 98 parents participated
- . 100% of participants increased knowledge of nutrition of various fruits and vegetables.
- . 100% of the parents reported their children were more willing to try new fruits and vegetables
- . 100% of the parents reported an increase in the amount of fruits and vegetables purchase and prepared weekly for their family.
- . 90% reported an increase of a minimum of one additional serving of fruits and vegetables daily.

4. Associated Knowledge Areas

KA Code	Knowledge Area
703	Nutrition Education and Behavior

Outcome #7

1. Outcome Measures

Percentage of parent participants who make better food choices (fruits/vegetables).

2. Associated Institution Types

- 1862 Extension

3a. Outcome Type:

Change in Condition Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2010	50	75

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

Many persons working in child and adult day care facilities were not very knowledgeable of healthy diets, safe food handling, healthy meal preparation and physical activity.

What has been done

The nutrition educators and Project coordinator designed a series of learning experiences to facilitate the voluntary adoption of eating and other nutrition-related behaviors conducive to the health and well being of those on limited budgets. The objectives of the intervention were to

provide participants with increased knowledge of nutrition, improved food choices, knowledge to decrease the risk factors associated with food borne illness, knowledge and skills in food handling to enhance their ability to prepare healthy meals for children and adults. A training manual was developed, DC Team Nutrition Training Guide with the following modules: Nutritional Needs and Meal, Dietary Guidelines and Understanding Basic Food Groups, Directions for Healthy Eating through the Food Guide Pyramid, Food Labeling, Planning, Purchasing, Shopping and Preparing for Ideal Nutritional Results, Fats, Sugars, and Salt: What's It all About ,Make Way for Five-A-Day, lactose Intolerance and Other Special Dietary Need, Benefits of Physical Activity and Food Safety: Managing Mealtime with Young Children. and end of each training session. A Pre and Post test was developed and administered at the beginning and end of each training session.

Results

- Workshops/food demonstrations/cooking classes were conducted by the nutrition educators in the evenings for parents of the preschoolers. A total of 92 parents participated in the workshops.
- . 87.1% of participants improved eating habits. One additional serving of fruits and vegetables was reported by participants.
 - . 100% of the parents reported cooking more at home and eating less frequently from fast foods establishments.
 - . 100% of the parents reported less frying and more baking and broiling to reduce the amount of fat in the diet
 - . 100% reported cooking more vegetables and eating more fruits.
 - . Eating out was reduced.

4. Associated Knowledge Areas

KA Code	Knowledge Area
703	Nutrition Education and Behavior

Outcome #8

1. Outcome Measures

Percentage of decrease in the risk factors food borne illness.

2. Associated Institution Types

- 1862 Extension

3a. Outcome Type:

Change in Condition Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
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2010

100

100

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

Many food handlers in the District of Columbia were not knowledgeable of food safety requirements nor were they prepared to take the National Certification Examination. This was especially true of many for low-literacy food handlers working in community service facilities.

What has been done

CNDH designed a program to equip participants for low literacy food handlers to 1) provide information and knowledge on the techniques to handle food; 2) decrease risk factors associated foodborne illness and to score a minimum of 70% on the post test and national examination to become certified food handlers in the District of Columbia; and 3) become knowledgeable of the MyPyramid and Dietary Guidelines of Americans. CNDH trained a total of 123 participants in four groups over a 10 week span. Each 2-hour session was conducted bi-weekly.

Results

Of the 123 participants, the outcomes were as follows:

- . 100% increased their knowledge of the causes of food borne illness.
- . 66% of participants reported a decrease in the risk factors of foodborne illness.
- . 95% of participants reported practicing safe food handling.
- . 100% of participants reporting passing their health inspection with a score of 80% or better.
- . 0% of the participants' facilities had any foodborne illnesses problems reported.

4. Associated Knowledge Areas

KA Code	Knowledge Area
712	Protect Food from Contamination by Pathogenic Microorganisms, Parasites, and Naturally Occurring Toxins

Outcome #9

1. Outcome Measures

Number of participants gaining awareness, knowledge and skills in Food Handling techniques.

2. Associated Institution Types

- 1862 Extension

3a. Outcome Type:

Change in Knowledge Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2010	400	772

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

Many food handlers in the District of Columbia were not knowledgeable of food safety requirements nor were they prepared to take the National Certification Examination. This was especially true of many for low-literacy food handlers working in community service facilities.

What has been done

CNDH designed a program to equip participants for low literacy food handlers with the following objectives: to provide information and knowledge on the techniques to handle food; to decrease risk factors associated foodborne illness and to score a minimum of 70% on the post test and national examination to become certified food handlers in the District of Columbia and become knowledgeable of the MyPyramid and Dietary Guidelines of Americans. CNDH convened 52 class sessions and trained 847 persons.

Results

Of the 847 individuals trained, the outcomes were as follows: 98.1% of the participants gained awareness, knowledge and skills in food handling techniques; 100% of the participants scored a required minimum of 70% on the post test and national examination to become a certified food handler in the District of Columbia.

4. Associated Knowledge Areas

KA Code	Knowledge Area
712	Protect Food from Contamination by Pathogenic Microorganisms, Parasites, and Naturally Occurring Toxins

Outcome #10

1. Outcome Measures

Number of participants scoring a required minimum of 70% on post test and national examination.

2. Associated Institution Types

- 1862 Extension

3a. Outcome Type:

Change in Action Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2010	365	772

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

Many food handlers in the District of Columbia were not knowledgeable of food safety requirements nor were they prepared to take the National Certification Examination. This was especially true of many for low-literacy food handlers working in community service facilities.

What has been done

CNDH designed a program to equip participants for low literacy food handlers with the following objectives: to provide information and knowledge on the techniques to handle food; to decrease risk factors associated food borne illness and to score a minimum of 70% on the post test and national examination to become certified food handlers in the District of Columbia and become knowledgeable of the MyPyramid and Dietary Guidelines of Americans.

Results

98.1% of the participants gained awareness, knowledge and skills in food handling techniques; 100% of the participants scored a required minimum of 70% on the post test and national examination to become a certified food handler in the District of Columbia.

4. Associated Knowledge Areas

KA Code	Knowledge Area
712	Protect Food from Contamination by Pathogenic Microorganisms, Parasites, and Naturally Occurring Toxins

Outcome #11

1. Outcome Measures

Percentage of participants who improved eating habits.

2. Associated Institution Types

- 1862 Extension

3a. Outcome Type:

Change in Action Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2010	50	78

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

Many persons working in child and adult day care facilities were not very knowledgeable of healthy diets, safe food handling, healthy meal preparation and physical activity.

What has been done

The nutrition educators and Project coordinator designed a series of learning experiences to facilitate the voluntary adoption of eating and other nutrition-related behaviors conducive to the health and well being of those on limited budgets. The objectives of the intervention were to provide participants with increased knowledge of nutrition, improved food choices, knowledge to decrease the risk factors associated with foodborne illness, and knowledge and skills in food handling to enhance their ability to prepare healthy meals for children and adults. A training manual was developed, DC Team Nutrition Training Guide, with the following modules: Nutritional Needs and Meals, Dietary Guidelines and Understanding Basic Food Groups, Directions for Healthy Eating through the Food Guide Pyramid, Food Labeling, Planning, Purchasing, Shopping and Preparing for Ideal Nutritional Results, Fats, Sugars, and Salt: What's It all About, Make Way for Five-A-Day, Lactose Intolerance and Other Special Dietary Needs, Benefits of Physical Activity and Food Safety: Managing Mealtime with Young Children. A Pre and Post test was developed and administered at the beginning and end of each training session.

Results

Follow up surveys to measure change in eating habits indicated that 87.1% of participants improved eating habits. This is a significant increase and we hope to maintain this by providing support to this population through training and technical assistance.

4. Associated Knowledge Areas

KA Code	Knowledge Area
703	Nutrition Education and Behavior
724	Healthy Lifestyle

Outcome #12

1. Outcome Measures

Percentage of decrease in the incidences of obesity in the District of Columbia

Not Reporting on this Outcome Measure

Outcome #13

1. Outcome Measures

Number of participants gaining awareness, knowledge, and skills in nutrition and agriculture.

Not Reporting on this Outcome Measure

Outcome #14

1. Outcome Measures

Number of residents who have applied knowledge to alleviate vermin in their homes.

Not Reporting on this Outcome Measure

Outcome #15

1. Outcome Measures

Number of residents who have made changes, i.e. elimination of secondhand smoke, removal of mold and/or mildew, and/or sanitation measures, in their homes as a result of information received from participating in the CES Asthma Project.

Not Reporting on this Outcome Measure

Outcome #16

1. Outcome Measures

Improved techniques for analyzing data that may lead to increased understanding of diabetes and the development of strategies to prevent and control diabetes.

2. Associated Institution Types

- 1862 Research

3a. Outcome Type:

Change in Knowledge Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2010	0	1

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

The serious complications diabetes can be associated with include heart disease and stroke, high blood pressure, blindness, kidney disease, nervous system disease, amputations, dental disease, and complications of pregnancy. The overall aim of this interdisciplinary research is to develop a series of fuzzy-set-theory-based data mining approaches for finding genetic, environmental and behavioral factors associated with diabetes.

What has been done

In this period, we further investigated our FM-GA and CM-GA approach for gene microarray analysis. Using the most current cloud computing technology, we implemented a parallel genetic algorithm to compare with FM-GA and CM-GA. With parallel computing, a cluster of computers can work together on the same task. Thus, the computational resources (memory and CPU time) are increased.

Results

Our research shows that FM-GA and CM-GA performs better or equally well as the parallel genetic algorithm on the data we used, in terms of classification accuracy. This confirms the effectiveness of our approach.

4. Associated Knowledge Areas

KA Code	Knowledge Area
724	Healthy Lifestyle

Outcome #17

1. Outcome Measures

Development and publishing of a recipe book that will be instrumental in assisting older adults with vegetable and fruit dietary requirements

Not Reporting on this Outcome Measure

Outcome #18

1. Outcome Measures

Number of participants who have increased their daily intake of fruits and vegetables

Not Reporting on this Outcome Measure

Outcome #19

1. Outcome Measures

Identification of nutrient modulation leading to broad applications for the inhibition of breast cancer cell proliferation and possibly cell transformation

2. Associated Institution Types

- 1862 Research

3a. Outcome Type:

Change in Knowledge Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2010	0	1

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

Gamma-Tocotrienol is a member of the vitamin E family. Tocotrienols (T3) are powerful antioxidants and possess anti-cancer, neuroprotective and cholesterol lowering properties. T3s inhibit the growth of various cancer cell lines without affecting normal cells. Less is known about the exact mechanisms of action of T3s on cell death and other growth inhibitory pathways.

What has been done

The project made significant progress in the last year. We demonstrated using standard cell biological and protein biochemistry experiments that T3 induces apoptosis in MDA-MB 231 and MCF-7 breast cancer cells. Gene expression microarray analysis also demonstrated that T3 induces endoplasmic reticulum (ER) stress and activates multiple unfolded protein response (UPR) pathways.

Results

We demonstrated that T3 modulates ER stress signaling and have identified ATF3 as a molecular target for T3 in breast cancer cells. We submitted a manuscript to publish the findings in refereed journal: Journal of Nutritional Biochemistry which has been accepted for publication.

4. Associated Knowledge Areas

KA Code	Knowledge Area
724	Healthy Lifestyle

Outcome #20

1. Outcome Measures

Development of fuzzy-set-theory-based methodologies for the measurement of behavioral differences.

Not Reporting on this Outcome Measure

Outcome #21

1. Outcome Measures

Development of Mobile version of MyHealth Journal Software System

2. Associated Institution Types

- 1862 Research

3a. Outcome Type:

Change in Knowledge Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2010	{No Data Entered}	1

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

Overweightness and obesity have reached epidemic proportions in the United States. The proportion of adults who are overweight increased substantially between 1980 and 2002. By 2002, 65% of U.S. adults (20-74 yrs of age) were overweight and 31% were obese. Likewise, obesity has become the most prevalent nutritional disease of children and adolescents.

What has been done

In this period, we further developed our software system, MyHealth Journal, on mobile computing platforms, for obesity data collection: iPhone and iPad. We believe that the mobility of the software tool and thus the ease of data recording will bring a break-through to obesity research data collection and obesity management. The software development has been completed for iPad. Both the PC version and the iPad version are ready to be distributed to the community of researchers and end users.

Results

The software system we developed for both personal computer and mobile devices such as iPhone and iPad leverages the strengths of the current mobile computing and cloud computing technology. It will change the way that researchers collect data for obesity research and the way that people monitor their own conditions, such as obesity and diabetes. We expect that, with this system, significantly larger amounts of detailed data can be collected over a much longer period at very low cost, which will in turn result in significant progress of diabetes research. On the other hand, when this tool is tailored for obesity management, it will greatly increase the user's awareness of the status of their key behaviors that will affect their weight and enable them to keep track of these factors.

4. Associated Knowledge Areas

KA Code	Knowledge Area
703	Nutrition Education and Behavior

V(H). Planned Program (External Factors)

External factors which affected outcomes

- Other (Family and Social Support; research methodology)

Brief Explanation

Our Ag in the Classroom Extension Agent retired and has not been replaced.

The multi-state research project, "Changing the Health Trajectory for Older Adults," is performing necessary activities that will lead into a food diary and assessment and the development and publishing of a recipe book. Thus, these state defined outputs are not scheduled for a report this period.

V(I). Planned Program (Evaluation Studies and Data Collection)

1. Evaluation Studies Planned

- Before-After (before and after program)
- During (during program)
- Case Study

Evaluation Results

1) Pre and Post tests of knowledge gained showed that participants had improved in their knowledge of nutrition.

2) Focus groups conducted with parents and teachers enabled improvements in program design.

3) Likert scale evaluation of teacher confidence and preparation regarding curriculum

items and program objectives enabled understanding for program changes.

4) National foodhandler certification exams showed improvement among participants affirming the program model.

Key Items of Evaluation

1) Foodhandler certification exam scores were consistently above the national average.

2) The Likert scale model is a state-of-the-art instrument based on shared information from USDA youth programs.

3) Promotion of focus group activity was accomplished through a bi-monthly e-newsletter (SNAP-Ed Connector) to assist in eliciting cooperation while keeping teachers, staff, and families on the same page.

CES has acquired clickers that will be used as another method of completing surveys. Using clickers will enable the agents to assess the participants' knowledge, provide immediate feedback and within seconds the agents can display a chart of the results. The clickers were used to assess change in behavior and conditions in focus group settings. Initially, training for CES agents who were new users of clickers was conducted by TurningPoint Technologies via a webinar. CES has since conducted follow-up training that consisted of one-on-one, hands-on with simulated situations for clicker usage. Most recently, the clickers were used at a Ward 8 Listening Session. Residents were asked various questions in reference to how CES could help them to enhance their quality of life through the activities that CES provides. The immediate results from the clickers showed the residents as well as management from CES and AES the activities the residents thought would be most beneficial to members of their community.

V(A). Planned Program (Summary)

Program # 4

1. Name of the Planned Program

Urban Families, Youth, and Communities

V(B). Program Knowledge Area(s)

1. Program Knowledge Areas and Percentage

KA Code	Knowledge Area	%1862 Extension	%1890 Extension	%1862 Research	%1890 Research
602	Business Management, Finance, and Taxation	10%		0%	
608	Community Resource Planning and Development	20%		0%	
801	Individual and Family Resource Management	10%		0%	
802	Human Development and Family Well-Being	30%		0%	
804	Human Environmental Issues Concerning Apparel, Textiles, and Residential and Commercial Structures	10%		0%	
806	Youth Development	20%		0%	
	Total	100%		0%	

V(C). Planned Program (Inputs)

1. Actual amount of professional FTE/SYs expended this Program

Year: 2010	Extension		Research	
	1862	1890	1862	1890
Plan	11.9	0.0	1.0	0.0
Actual	23.0	0.0	0.0	0.0

2. Actual dollars expended in this Program (includes Carryover Funds from previous years)

Extension		Research	
Smith-Lever 3b & 3c	1890 Extension	Hatch	Evans-Allen
538665	0	0	0
1862 Matching	1890 Matching	1862 Matching	1890 Matching
538665	0	0	0
1862 All Other	1890 All Other	1862 All Other	1890 All Other
311676	0	0	0

V(D). Planned Program (Activity)

1. Brief description of the Activity

- Leadership Development Meetings
- Woodworking Projects
- Language Program - Spanish
- Gardening Projects
- Computer Labs
- Nutrition Program
- Water Quality and GIS Technology
- Curriculum Development
- Fact Sheets
- Newsletters
- Financial Literacy Sessions/Workshops
- High School Financial Planning Program
- Demonstrations for Home Repair

2. Brief description of the target audience

- Youth
- Adults
- Seniors
- Military Personnel
- DC residents
- College students
- Ex-offenders
- Low to moderate income residents
- First-time buyers
- Low income homeowners
- Small, new start, home based businesses

V(E). Planned Program (Outputs)

1. Standard output measures

2010	Direct Contacts Adults	Indirect Contacts Adults	Direct Contacts Youth	Indirect Contacts Youth
Plan	33940	0	7000	0
Actual	23000	17000	19000	26000

2. Number of Patent Applications Submitted (Standard Research Output)

Patent Applications Submitted

Year: 2010
 Plan: 0
 Actual: 0

Patents listed

3. Publications (Standard General Output Measure)

Number of Peer Reviewed Publications

2010	Extension	Research	Total
Plan	0	0	
Actual	0	0	0

V(F). State Defined Outputs

Output Target

Output #1

Output Measure

- Youth will receive pre and post testing and regular tutoring to improve their reading skills.
 Not reporting on this Output for this Annual Report

Output #2

Output Measure

- Curriculum developed for various parenting workshops, seminars, support groups, fact sheets, and newsletters.

Year	Target	Actual
2010	5	5

Output #3

Output Measure

- Number of participants in parenting workshops.

Year	Target	Actual
2010	200	200

Output #4

Output Measure

- Number of parenting support groups formed.

Year	Target	Actual
2010	10	10

Output #5

Output Measure

- Percentage increase in the number of parenting support groups.

Year	Target	Actual
2010	25	15

Output #6

Output Measure

- Conduct a minimum of 48 sessions in the area of financial literacy.

Year	Target	Actual
2010	48	69

Output #7

Output Measure

- Conduct 10 sessions per year for junior and senior high schools in the District of Columbia on financial planning.

Year	Target	Actual
2010	10	5

Output #8

Output Measure

- Number of individuals in co-ops and subsidized housing trained on roles, rights, and responsibilities of co-op members, managers, and directors.
Not reporting on this Output for this Annual Report

Output #9

Output Measure

- Develop newsletter and/or fact sheets for District residents so they can perform basic/advanced repairs in and around their home.

Year	Target	Actual
2010	2	1

Output #10

Output Measure

- Conduct hands-on workshops for District residents in basic and advanced home repair.

Year	Target	Actual
2010	50	40

Output #11

Output Measure

- Increase in the number of 4-H clubs throughout the city.

Year	Target	Actual
2010	10	23

Output #12

Output Measure

- Hold a minimum of 20 co-op training sessions for co-op members and individuals in subsidized housing.
Not reporting on this Output for this Annual Report

Output #13

Output Measure

- Develop a videotape series, webpage and links to provide continuous scheduled training and information on co-op housing issues.
Not reporting on this Output for this Annual Report

Output #14

Output Measure

- Youth will receive training in the areas of sewing, computer technology, and geospatial technology.

Year	Target	Actual
2010	400	400

Output #15

Output Measure

- Youth will receive leadership development training through conferences and special programs.

Year	Target	Actual
2010	300	360

Output #16

Output Measure

- Tutors will receive training to both assess and treat reading disabilities.
Not reporting on this Output for this Annual Report

V(G). State Defined Outcomes

V. State Defined Outcomes Table of Content

O. No.	OUTCOME NAME
1	Number of children who have increased their knowledge of the essential elements of team work through participation in 4-H club activities.
2	Number of children who have learned about importance of responsibility through participation in 4-H activities.
3	Number of DC Reads participants who have experienced greater success in school.
4	Percentage of students who have increased their reading skills.
5	Number of parenting workshop participants who have used their knowledge of support services available to apply for assistance in an effort to meet some of their parenting needs.
6	Number of parenting workshop participants who have gained knowledge in basic child care.
7	Number of participants increasing their income tax refunds through tax planning.
8	Number of DC residents who participated in a Financial Literacy workshop who are now or have purchased homes with some form of financial assistance.
9	Number of participants who have changed their attitudes about co-op housing ownership in the District of Columbia.
10	Number of participants able to make repairs as well as communicate with contractors in a professional manner.
11	Number of District residents participating in workshops offered on home maintenance and repair who have reduced the cost of repairs to their home by \$25.00 or more.
12	Number of small business participants who changed their minds about developing and maintaining a successful business in the District of Columbia.
13	Percentage of businesses participating in the program that experienced a positive impact.
14	Number of youth passing test to become certified in Hair Braiding.
15	Number of Youth volunteering for community service projects/activities, i.e. DC Reads tutoring and neighborhood cleanup/beautification efforts.

Outcome #1

1. Outcome Measures

Number of children who have increased their knowledge of the essential elements of team work through participation in 4-H club activities.

2. Associated Institution Types

- 1862 Extension

3a. Outcome Type:

Change in Knowledge Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2010	500	708

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

Teachers report and 4-H staff observe that 4-H teens need to work on their leadership skills to include team building and positive interactions when planning activities as well as for conflict resolution. Teen 4-H leadership clubs work with 4-H staff in the implementation of 4-H programs to give the team an opportunity to provide guidance to the youth.

What has been done

Activities involving the elements of team work included a two day leadership conference with 4H teens planning several of the workshops; teens meeting with Maryland youth to discuss how their 4-H youth planned conferences for their annual program; the establishment of seven (7) new teen 4-H leadership clubs in District schools; the participation of DC 4-H teams in a Lifesmarts competition; and activities with teens for the Health Rocks Program, and effort to deter teens from using tobacco products.

Results

190 youth participating in the Leadership Conference were surveyed and the results follow: 45% were pleased with the activities they planned and implemented as a team; 60% reported they have leadership skills that they were unaware of; and 40% reported greater interest in leadership activities. Several teens volunteered for service activities at 4-H events such as welcoming and registering program participants; 30 teens assisted 4-H agents as mentors to younger youth in the Health Rocks program; and 85 teens participated in the Lifesmarts Program, thereby establishing 17 teams for the competition.

4. Associated Knowledge Areas

KA Code	Knowledge Area
806	Youth Development

Outcome #2

1. Outcome Measures

Number of children who have learned about importance of responsibility through participation in 4-H activities.

2. Associated Institution Types

- 1862 Extension

3a. Outcome Type:

Change in Knowledge Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2010	400	900

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

Children who have parents in the military often have to take on new responsibilities when their parents are deployed. 40% of the children we serve through the Operation Military Kids program report fears about unknown responsibilities if a parent is deployed, and a feeling of isolation in the school setting around non-military youth. As we all must take responsibility for our health, the Health Rocks Program provides information and activities to teens to deter them from behavior that may affect their health.

What has been done

4-Hers were given tasks to build their sense of self-reliance and self-esteem. They were paired with campers from other military sites for their activities. 40 youth camped out for one week on a farm and were given daily chores both for personal growth and in teams groups. 53 teens volunteered to participate in the Health Rocks Program and worked with their mentors to provide presentations and activities for hundreds of younger youth on maintaining good health through avoidance of using tobacco, alcohol and chemical drugs.

Results

90% of the youth participants in the OMK camping project reported that they would like to know more about environmental science; 20% of the youth report an improvement in their confidence to perform in the absence of a parent; and 62% report that they made a new friend from another base of guard unit. 100% of the teens participating as presentors in the Health Rocks Program signed a pledge to never use chemicals and to take care of their health. Further, these teen leaders reported a willingness to tell friends not to smoke or use drugs.

4. Associated Knowledge Areas

KA Code	Knowledge Area
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806 Youth Development

Outcome #3

1. Outcome Measures

Number of DC Reads participants who have experienced greater success in school.

Not Reporting on this Outcome Measure

Outcome #4

1. Outcome Measures

Percentage of students who have increased their reading skills.

Not Reporting on this Outcome Measure

Outcome #5

1. Outcome Measures

Number of parenting workshop participants who have used their knowledge of support services available to apply for assistance in an effort to meet some of their parenting needs.

2. Associated Institution Types

- 1862 Extension

3a. Outcome Type:

Change in Action Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2010	100	200

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

Grandparents in the District of Columbia are raising their grandchildren placing them in situations that have changed since they were parenting on a regular basis. Health Insurance is needed to cover illness for the children and to provide better health for the children. Also, grandparents need a cost effective option for after school tutoring for their grandchildren.

What has been done

A workshop was presented to 100 grandparents and parents relating the location and services provided by the Chartered Health Medical facility for families. Grand parents were given resources to provide tutoring in the after school hours at local recreational centers, online and through other youth serving organizations to assist the children and parents with learning.

Results

As a result of the workshop presented to grandparents, 43% of the participants were able to receive Health Insurance for their children and themselves. 43 grandparents and 87 children, a total of 130 individuals, are now able to save money as they will not need to pay out of pocket cost for medical appointments. 20% of the parents that learned about the after school tutoring programs reported that they are now using them.

4. Associated Knowledge Areas

KA Code	Knowledge Area
802	Human Development and Family Well-Being

Outcome #6

1. Outcome Measures

Number of parenting workshop participants who have gained knowledge in basic child care.

2. Associated Institution Types

- 1862 Extension

3a. Outcome Type:

Change in Knowledge Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2010	25	40

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

Parents in the District of Columbia need assistance with childcare services at affordable rates. Some parents are parenting children that are infected with the HIV virus. They need assess to child care services, and legal assistance.

What has been done

60 parents were referred to the National Center for Permanency for African American Children at Howard University. Parents were referred to the Family Ties Project a program that provides assess to child care services, and legal assistance to children infected by HIV. They were also given referral to different programs using the UDC Parenting Resource guide.

Results

48% of the parents reported using the Parenting Resources Guide to secure affordable childcare.

4. Associated Knowledge Areas

KA Code	Knowledge Area
802	Human Development and Family Well-Being

Outcome #7

1. Outcome Measures

Number of participants increasing their income tax refunds through tax planning.

Not Reporting on this Outcome Measure

Outcome #8

1. Outcome Measures

Number of DC residents who participated in a Financial Literacy workshop who are now or have purchased homes with some form of financial assistance.

Not Reporting on this Outcome Measure

Outcome #9

1. Outcome Measures

Number of participants who have changed their attitudes about co-op housing ownership in the District of Columbia.

Not Reporting on this Outcome Measure

Outcome #10

1. Outcome Measures

Number of participants able to make repairs as well as communicate with contractors in a professional manner.

2. Associated Institution Types

- 1862 Extension

3a. Outcome Type:

Change in Condition Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2010	250	280

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

Homeowners can save money on minor repairs by doing the work themselves. The basic maintenance program provides District residents with knowledge/skills needed to perform repairs in their homes. The program provides hands-on workshops in such topics as wall repair, toilet tank repair, leaky faucet repair, basic electricity, and replacing a sink and faucet.

What has been done

40 basic home classes were conducted during the reporting period. The training provided hands-on activities in wall repair, toilet tank repair, leaky faucet repair, basic electricity, and replacing a sink and faucet.

Results

Of the 570 participants who registered for home improvement classes, approximately 50% completed the home repair portion of the program and received a certificate identifying their ability to make minor repairs or adjustments in their homes. Not only are they able to complete these repairs themselves, these participants are now wiser consumers about processes, materials required, etc.

4. Associated Knowledge Areas

KA Code	Knowledge Area
801	Individual and Family Resource Management
804	Human Environmental Issues Concerning Apparel, Textiles, and Residential and Commercial Structures

Outcome #11

1. Outcome Measures

Number of District residents participating in workshops offered on home maintenance and repair who have reduced the cost of repairs to their home by \$25.00 or more.

2. Associated Institution Types

- 1862 Extension

3a. Outcome Type:

Change in Condition Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2010	500	570

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

District residents improved their quality of life, and community through partnership that uses experience, research and knowledge. The basic maintenance program provides District residents with knowledge/skills needed to perform repairs in and around their home. The program provides hands on workshops in such topics as wall repair, toilet tank repair, leaky faucet repair, basic electricity, replacing a sink and faucet.

What has been done

Over 570 attended the CES Housing and Energy Programs. In addition, 40 basic home classes were taught. Over 280 or 49.1% finished the home repair portion of the program and actually received a certificate identifying their ability to make minor adjustments in their homes.

Results

Through knowledge gained from completion of training in basic home repairs, 280 District residents are now able to keep contractors from taking advantage of them for contracted repair work to repair cracks in drywalls, leaky faucets, and the replacement of circuit breakers and water closets. Not only are they able to complete these repairs themselves, these participants are now wiser consumers about processes, materials required, etc. Through phone interviews and surveys, approximately 10 residents reported that they saved a minimum of \$25.00 on repairs. Some residents reported purchasing energy-efficient appliances that will result in energy savings each year.

4. Associated Knowledge Areas

KA Code	Knowledge Area
801	Individual and Family Resource Management
804	Human Environmental Issues Concerning Apparel, Textiles, and Residential and Commercial Structures

Outcome #12

1. Outcome Measures

Number of small business participants who changed their minds about developing and maintaining a successful business in the District of Columbia.

Not Reporting on this Outcome Measure

Outcome #13

1. Outcome Measures

Percentage of businesses participating in the program that experienced a positive impact.

Not Reporting on this Outcome Measure

Outcome #14

1. Outcome Measures

Number of youth passing test to become certified in Hair Braiding.

Not Reporting on this Outcome Measure

Outcome #15

1. Outcome Measures

Number of Youth volunteering for community service projects/activities, i.e. DC Reads tutoring and neighborhood cleanup/beautification efforts.

Not Reporting on this Outcome Measure

V(H). Planned Program (External Factors)

External factors which affected outcomes

- Other (Community Support; personnel changes; administrative issues)

Brief Explanation

4H and Youth Development

1) The employee that assisted in implementing the 4-H Braiding Program left the University; unfortunately, she was unable to fit the program activities into her schedule to continue the program. This was a program without external funding. We will need to obtain additional funds to hire a new person to work with our youth.

2) Our efforts to support the youth in giving back to the community will involve a process of changing long held views and will take more time. We have made a positive start.

3) The DC Reads program has been discontinued due to administrative/program priorities set by the Director/Dean.

Scientist Years

Currently, there are no research projects under this program.

Community Resource and Economic Development

The faltering economy is the number one external factor affecting service delivery. The down turn in the economy has had a severe impact on the area of economic development. Competing public programs have been curtailed, such as the development of affordable housing, a reduction in training, testing and licensing for workforce development, and private sector support for services for disadvantaged groups and youth.

The instability in DC Public School System, especially with a loss of trained teachers, adversely affected our programs.

V(I). Planned Program (Evaluation Studies and Data Collection)

1. Evaluation Studies Planned

- Before-After (before and after program)
- During (during program)
- Time series (multiple points before and after program)

Evaluation Results

4 H and Youth Development

1) We have collected surveys, letters of support for our programs and held monthly meetings with our OMK State Team, a group of adult stakeholders, to review our progress. We have made some program adjustments to improve program delivery.

2) For both of our summer camp programs, we have received very positive reviews and letters from parents. The youth in the 4-H programs are becoming more aware of the options available to them in 4-H and we have greater participation in our school programs. We are making positive impacts with conflict resolution in the schools but we are just developing better means of measuring that success.

3) Youth reported enjoying the field trips away from the college as being their favorite experience with 4-H during the year. Secondly, they reported enjoying the topics they selected to learn about and third, they enjoyed making new friends and getting to know people better from their communities.

4) Military youth liked knowing others who are going through the same experiences

they are confronted with daily. They liked making new friends and they enjoyed field trips as well.

Key Items of Evaluation

CES has acquired clickers that will be used as another method of completing surveys. Using clickers will enable the agents to assess the participants' knowledge, provide immediate feedback and within seconds the agents can display a chart of the results. The clickers were used to assess change in behavior and conditions in focus group settings. Initially, training for CES agents who were new users of clickers was conducted by TurningPoint Technologies via a webinar. CES has since conducted follow-up training that consisted of one-on-one, hands-on with simulated situations for clicker usage. Most recently, the clickers were used at a Ward 8 Listening Session. Residents were asked various questions in reference to how CES could help them to enhance their quality of life through the activities that CES provides. The immediate results from the clickers showed the residents as well as management from CES and AES the activities the residents thought would be most beneficial to members of their community.