



West Virginia State College

Annual Report of Accomplishments and Results (FY 2002)

For Plan of Work FY 2000-2004

1890 Cooperative Research & Cooperative Extension



**Annual Report of Accomplishments and Results
- FY 2002 -**

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SECTION I. INTRODUCTION

Report Summary

The present report provides an update of the annual accomplishments for the research and extension activities conducted by the 1890 Cooperative Research and Cooperative Extension Departments at West Virginia State College during the third year of federal funding (FY 2002). This report is designed around the five national goals as suggested by the USDA-CSREES. It also provides the time and financial allocations devoted to each of these five national mandated goals and key themes.

Background & Institutional Updates

In November of 2001, with the passage of the FY 2002 Agricultural Bill, West Virginia State College was reinstated as a full 1890 Land-Grant Institution. WVSC began the development and implementation phases of research and extension programs in FY 2000 and 2001 (capacity building years). Since then, several programs have been fully implemented and delivered to our communities, and stakeholders in the State. The Department of Land-Grant Programs (now Division of Agricultural, Consumer, Environmental, and Outreach Programs or ACEOP) was established on March 17, 2000 to serve as the administrative arm for the College's land-grant mission of research, teaching and extension.

The programs already established are now maturing and will produce valuable data important in assessing the impacts that each of them has had on our communities and stakeholders. This annual report of accomplishments describes those programs and their impacts. Sections II and III, provide detail accomplishments and impacts of the research, and extension programs. Collaborative programs between the State's 1890 and 1862 Land-Grant Institutions for FY 2002 has been emphasized and identified throughout this report.

The fiscal support for FY 2002 stayed nearly at the same level of funding as the previous years (approximately \$1 M for extension and \$ 1 M for research). The College is currently working diligently with its State legislators to secure state and local funding required to maintain, monitor, and to further expand the reach of these programs.

The Division of ACEOP only serviced a three county area, however, the 1890 Extension programs have been recently extended to two additional counties. In the future, with the assistance of state funding, the College expects to extend its services to additional 11 Southern counties in West Virginia. As a matter of fact, these 14 counties in which the College is planning to extend its outreach/extension and research services, represent the most urban, but also the most rural and ethnically diverse populations in the state.

Merit Review

The WVSC Merit Review process for proposed research projects will accomplish the six goals stated in the Administrative Manual for Evans-Allen Cooperative Agricultural Research: (1) Submitted proposals are complete per the guidelines in the Administrative Manual, Appendix F., (2) The proposal is relevant to society's food and agricultural needs, (3) The research proposals are scientifically sound, (4) Cooperative opportunities will be encouraged whenever possible, (5) Project leaders will be given ample opportunity to interact with reviewers in efforts to strengthen proposals, and (6) Documentation of compliance with these goals is kept on file and sent to CSREES upon request. The WVSC 1890 Research Office (research office) maintains a list of potential stakeholders. This list serves as a pool of potential advisors that are called upon to evaluate the merit of research proposals.

Each year, during the months of March and April, all programs are subjected to a review process. The process includes an internal and external evaluation. An oral presentation at the WVSC Annual Research Symposium is a key component the overall annual evaluation and it is required for land-grant sponsored researchers. Stakeholders identified by the procedures outlined below will be invited to the Symposium. The internal evaluation consists of an Office and/or Departmental appraisal by the executive staff. Additionally, all participants in land-grant sponsored research critically assess the research of fellow colleagues for developmental purposes only.

A research advisory panel conducts the external program evaluations. The research advisory panel consists of local scientists with a wide variety of backgrounds, business leaders and other appropriate stakeholders. The evaluations from these panels are utilized to help rank and allocate funds to specific land-grant programs. Evaluation assessing research productivity versus money spent will be included in the ranking of continuing projects: facilitating funding decisions during the next budget year.

Faculty Appointment Policy

The College's Division of Land-Grant Programs (ACEOP) and Academic Affairs Unit have developed an appointment system that allows research faculty to participate in land-grant funded activities. This appointment in turn, allows land-grant staff members to participate in the College's teaching activities. The system operates on a mechanism designed to exchange appointment time between the Divisions of Land-Grant Programs and the academic Departments of the College.

Stakeholder Input and Environmental Scanning

WVSC ACEOP is expanding its presence in the State of West Virginia, particularly in the capital city of Charleston and the surrounding counties. During the first year of land-grant funding, the focus was building infrastructure within ACEOP. Time was devoted to staff recruitment and training. In the second year, the main goal has been to assess the needs and strengths of stakeholders in our area and begin to deliver educational

programs to address the many challenges faced by the citizens in our region. As we are still in the program development stage, the impact or outcomes of many of the programs are still not known.

Meetings were essential to identify our community stakeholders. After the initial introductory meetings and information sessions, ACEOP extension staff held a series of community forums and town hall meetings to get feedback from the citizens. Ten such forums were held across the Kanawha valley. Citizens are concerned about high unemployment, illiteracy among adults, teen pregnancy, inadequate information regarding proper nutrition, lack of activities for children and youth after school and the digital divide. Given the input we received from these forums, programmatic efforts were directed toward these issues. For instance, WVSC ACEOP is addressing Goal 5 with teen pregnancy prevention programs, after-school programs, summer youth educational programs, entrepreneurial education, computer education and technology access in low-income areas, and economic research.

Another example of retrieving stakeholder input, as it relates to 1890 Cooperative Extension, is the creation of partnership with community-based organizations. WVSC ACEOP formed a partnership with the Partnership of African American Churches (PAAC) in order to affiliate with a community development entity whose interests and accomplishments would support and further the mission of serving as a resource center and broker for the communities the College serves and to obtain the vital input we need to development programs relevant to the needs and interests of the African-American communities in WV.

PAAC and WVSC ACEOP entered into a partnership to create a network of at least 65 congregational communities with five in each of the 13 counties of the state, which contain 80% of the West Virginia's African American Population. ACEOP and PAAC will be able to provide technical assistance and to seek funding for identified congregational communities to establish wellness centers in their congregational communities. Based on a series of community meetings and needs assessments in the summer of 2002, it was determined that we should also provide technical assistance to those identified congregational communities who desire to expand their programmatic implementation plans to include criminal justice, education, and economic development.

As a result of the partnership between ACEOP and PAAC, staff from the Department of Community Resources and Economic Development has gained an important entry into the community and efforts are currently underway to obtain and evaluate stakeholder input. A CRD agent serves as a technical advisor to a criminal justice initiative being developed by PAAC and the State Division of Juvenile Justice. The Associate Director of CRED has been involved with community forums and the Institute Project committee. Results of this assessment will be used to guide future programmatic efforts within cooperative extension.

WVSC 1890 Research Program stakeholders are identified by several means: (1) Principal investigators of proposals must identify relevant WV stakeholders, (2) The

research office staff canvas both WV industry officials and WV government agency representatives relevant to the proposal and select at least one of each to participate in the merit review of the proposed project, (3) The research office staff solicits public comment on proposed projects through media advertisements and open meetings, and (4) Finally, the Associate Director of Research constructs an advisory panel tailored to each proposal. The Associate Director of Research chairs the advisory panels, provide administrative support, including proposal evaluation instruments, and ensure that WVSC regulations regarding scientific validity and USDA regulations on merit review are followed.

WVSC ACEOP has developed partnerships with other stakeholders including: Marshall University, West Virginia Community Voices Project, West Virginia Department of Health, West Virginia Chips Program, West Virginia Division of Juvenile Justice, West Virginia Initiative to Improve End of Life Care, West Virginia Higher Education Policy Commission, and Charleston Area Medical Center Smoking Cessation Program.

Evaluation of Multi and Joint Activities

The lead institution in multi or joint activities will be responsible for evaluations. The internal and USDA-approved policies and procedures of the lead institution will be followed in the evaluation of multi or joint activities.

Collaborative Programs: 1862 & 1890 Institutions

West Virginia University and West Virginia State College (WVSC) entered into a voluntary agreement in 1997 to create the West Virginia Association of Land-Grant Institutions; a collaboration of the state's two land-grant institutions committed to providing education that will help the citizens of West Virginia improve their lives and communities. In January 2003, the WVSC placed its first county-based Extension educator in Clay County (one of our most needy counties), co-locating with a WVU agent in a shared office in the Courthouse. The Division of Agricultural, Consumer, Environmental, and Outreach Programs (ACEOP) at West Virginia State College (WVSC) is currently servicing a three county area (Kanawha, Putnam, and Clay). It is expected that research and extension programs expand in the near future to additional counties. In fact, there are already collaborative projects between WVSC and West Virginia University (WVU) taking place within and outside of the counties we presently serve. WVSC currently works with WVU to assist in program delivery in other counties in which we will both be co-located. Both institutions work diligently in collaborative efforts to avoid program duplication.

SECTION II. 1890 COOPERATIVE RESEARCH PROGRAMS

TABLE 1. 1890 COOPERATIVE RESEARCH: SUMMARY OF RESOURCE ALLOCATION BY GOAL AND PROGRAM

1890 COOPERATIVE RESEARCH								
NATIONAL GOAL / PROGRAM		RESOURCE ALLOCATION						
		FISCAL YEAR 2002						
GOAL	PROGRAM DESCRIPTION	FEDERAL			STATE		NON-FEDERAL	
		SECTION 1445	OTHER	SYs	MATCH	SYs	OTHER	SYs
GOAL 1								
	Key Theme: Biotechnology							
Program 1.1	Crop Growth (Modification and Development)	15,000		0.10				
	Key Theme: Aquaculture							
Program 1.2	Trout Production	66,105	15,000	0.30				
Program 1.3	Bluegill Production	60,895	15,000	0.30				
Program 1.4	Utilization of Proteins from Waste	80,000	20,000	0.35				
	Key Theme: Diversified / Alternative Agriculture							
Program 1.5	Alternative Crop Studies	20,000		0.10				
	Key Theme: New Uses of Ag. Products & Organic Agriculture							
Program 1.6	Alternative Crop Methods	20,000		0.10				
	TOTAL	262,000	50,000	1.25	0	0.00	0	0.00
GOAL 2								
	Key Theme: Integrated Pest Management							
Program 2.1	Development of Crop Antifungal Agents	50,000		0.20				
	Key Theme: Food Safety, HAACP							
Program 2.2	Improve Detection of Microbes in Food Products	112,000		0.30				
	TOTAL	162,000		0.50	0	0.00	0	0.00
GOAL 3								
	Key Theme: Human Health & Nutrition							
Program 3.1	Nutrition Education in West Virginia	25,000		0.20				
Program 3.2	Safe Quality Food Practices	25,000	15,000	0.25				
	TOTAL	50,000	15,000	0.45	0	0.00	0	0.00
GOAL 4								
	Key Theme: Soil Quality, Water Quality & Hazardous Materials							
Program 4.1	Detection of Toxins in Soil	45,000		0.38				
Program 4.2	Novel Methods for Heavy Metal Removal	45,000		0.38				
Program 4.3	Determining the Sorption Mechanism of...	45,000		0.38				
	Key Theme: Agricultural Waste Management							
Program 4.4	Bioplex	325,000	561,000	7.00	60,000	0.35		
	Key Theme: Invasive Species							
Program 4.5	Predicting Effects of <i>Alianthus altissima</i> Invasion	75,000		0.40				
	TOTAL	535,000	561,000	8.53	60,000	0.35	0	0.00
GOAL 5								
	Key Theme: Economic Development							
Program 5.1	Community Asset Mapping Research	16,000		0.13				
	TOTAL	16,000		0.13	0	0.00	0	0.00
GRAND TOTAL		1,025,000	611,000	10.35	60,000	0.35	0	0.00

WVSC 1890 Cooperative Research Overview

At West Virginia State College, fiscal year 2002 continues with the capacity building necessary to sustain a quality and competitive 1890 Research Program. The research funding budgeted for FY 2002 was invested in improving research facilities (small portion), procuring research equipment, and seed grants to scientists. Many of the projects are still acquiring equipment and finishing lab renovations. Scientists continue to collect preliminary data, develop their experimental plans, trouble-shoot the newly constructed facilities and recently acquired equipment. However, all of the projects are progressing and utilizing students in constructive research.

Goal 1: To achieve an agricultural production system that is highly competitive in the global economy...

Executive Summary:

- (A) Several research projects are addressing issues to improve the competitiveness of WV agriculture. WVSC biotechnology research to determine the controls of plant cell division has been initiated. Understanding the role of plant hormones in this process and other phases of plant development will result in the identification of biochemical targets that modify crop growth and development – establishing the basis for improved agricultural products. WVSC aquaculture research on a trout yield verification trial has identified a more efficient and cost-effective feed ration for a local trout production facility. This one production change by High Appalachia, Inc. has saved money to the point of making the business profitable. Research developing new uses for livestock wastes is demonstrating the efficacy of fertilizers derived from anaerobically digested poultry waste. The fourth year of vegetable and blueberry field trials suggest that digested poultry litter is a viable organic fertilizer and performs as well as commercial fertilizers.
- (B) The trout yield verification project has provided recommendations that have changed the operation of one company.
- (C) This change has increased the profit margin of High Appalachian Inc. To date no other impact has been observed in WV Aquaculture.
- (D) The Aquaculture yield verification project has been highly successful. The applied nature of this research and the direct participation of agriculture stakeholders in the activity highlight the components we view as essential for Research projects. The Biotechnology project in contrast, is very basic in nature and is not progressing toward a result that will affect stakeholders in the near future. Therefore, we are terminating this work soon.
- (E) Resource Allocation:

Total Invested - \$312,000
SY - 1.25

Key Theme: Biotechnology

Program 1.1: *Crop Growth (Modification and Development)*

Description: The regulatory mechanisms that control the metabolism of cytokinins (a major plant growth regulator) affect all phases of plant development and conditioning. In addition, these mechanisms affect many of the physiological responses of plants to their environment. The nature of these regulatory mechanisms remains one of the major unsolved problems in plant hormone physiology. Understanding these mechanisms is essential for the identification of novel biochemical targets that modify crop/plant growth and development, and is vital for scientists working to recover genetically altered plants.

- a) **Results.** BY-2 tobacco suspension cultures have been established in the WVSC lab and total RNA & DNA have been isolated from this material. The first step in making a tobacco cytokinin dehydrogenase gene probe was to design degenerative nested primers from a consensus of corn, rice and Arabidopsis cytokinin dehydrogenase sequence. These primers were used in PCR with BY-2 tobacco genomic & cDNA templates and Arabidopsis genomic DNA. The DNA gels from these PCR reactions contained two to four DNA bands (amplicons). We are currently cloning and sequencing these amplicons in an effort to identify which one represents the authentic, tobacco, cytokinin dehydrogenase. In a related project, an image analysis lab containing a research microscope system is under construction. This resource will be used to perform numerous BY-2 tobacco cell assays.
- b) **Successes Resulting in Change (Outcomes):** This work is not sufficiently mature to show outcomes beyond research results. Project is stalled and will be modified or discontinued from the plan of work.
- c) **Stakeholder Benefits (Impacts):** Because of the scarce results, this work is not sufficiently mature to show an impact on stakeholders.
- d) **Assessment of Accomplishments:** The WVSC Associate Director of 1890 Research (Dr. Chatfield) is responsible for assessments; he is also the principal investigator. Due to the slow progress, this program is likely to be discontinued.
- e) **Source of Expenditures & Impact Scope:**
Funding Source- Evans-Allen (Section 1445)
Scope of Impact- State-specific, 1890 Research

Key Theme: Aquaculture

Program 1.2: *Trout Production (Verification Yields)*

Description: WVSC1890 Research and WVU Research and Development have collaborated to develop and implement a pilot yield verification program for food size rainbow trout in flowing water systems at two commercial facilities. While both farms grow fish in gravity fed flowing water systems, there are differences in production design, management strategies and market objectives.

- a) **Results:** The tank-based system captured ground water as it flowed from a coalmine. Fish were grown in round tanks holding 1658ft³ or 4163ft³ of water, supplied with a flow rate of 60 gallons/minute and 100 gallons/minute respectfully. Average exchange rates were 0.19 and 0.32 exchanges/hour. The system was supplemented with oxygen to maintain a minimum of 6mg/l. Production at this site was destined for a processing plant. Management focused on growing as many pounds of fish as possible, causing water quality to be a potential limiting factor for growth. The raceway based system captured spring water as it flowed from the base of a mountain. Fish were grown in concrete raceways holding approximately 190ft³ of water supplied with a flow rate between 120 to 300 gallons/minute, depending on availability. Average exchanges rates were between 6 to 10 exchanges/hour. There was no oxygen supplementation. Water quality did not reach levels expected for limitation of growth. Production from this site was destined primarily for the recreational market. Management focused on growing adequate volume while minimizing labor.
- b) **Successes Resulting in Change (Outcomes):** Data from the tank based system suggested that fish fed to satiation during the production cycle would result in a lower feed conversion and higher yield than feeding 2% body weight/day during a 180 day cycle.
- c) **Stakeholder Benefits (Impacts):** Early results from this project led to permanent modification in feed-formulation for a local fish farm, converting a financially troubled operation into a profitable business. Further results have provided production comparisons for management strategies for two different fish farms. Given current management practices, and all parameters being equal production rates would be higher in the tank system versus the raceway system.
- d) **Assessment of Accomplishments:** Due to its successful application, this program constitutes will be used as a model program for all other research programs.
- e) **Source of Expenditures & Impact Scope:**
 Funding Source- Evans-Allen (Section 1445, Section 1444); USGS; USDA/CSREES through WV University
 Scope of Impact- State-specific, **Integrated** 1890 Research & Extension, **1890 & 1862 Collaboration**

Program 1.3: Bluegill Production (Diet Effects on Growth)

Description: WVSC Land-Grant Research and WVU Animal & Veterinary Science are collaborating to optimize strains and diets for production of hybrid bluegill. The objective of this program is to determine the differences in efficiency of nitrogen and lysine retention in to different strains fed different, commercially available diets.

- a) **Results:** Diets and fish were analyzed for nitrogen by Kjeldahl and for lysine by HPLC after acid hydrolysis and phenylisothiocyanate derivitization. Fish were randomly allotted to 20 tanks with 2 tanks/diets within strain. Preliminary data demonstrates that strain and diet have important impact on production and that the most nutrient dense diets won't necessarily lead to enhanced performance.

- b) **Successes Resulting in Change** (Outcomes): This work is not sufficiently mature to show outcomes.
- c) **Stakeholder Benefits** (Impacts): This work is not sufficiently mature to show an impact.
- d) **Assessment of Accomplishments**: The project is progressing and should be continued.
- e) **Source of Expenditures & Impact Scope**:
 Funding Source- Evans-Allen (Section 1445)
 Scope of Impact- State-specific, **Integrated** 1890 Research & Extension, **1890 & 1862 Collaboration**

Program 1.4: *Utilization of Protein from Thermophilic Anaerobic Digestion of Poultry Wastes in Fish Diets*

Description: Effluents from the thermophilic anaerobic digester include significant amounts of microbial protein that can potentially be used as a feedstock. Since the cost of feed represents the most expensive input in most forms of aquaculture, efforts to improve feed efficiency are necessary for continued economic growth of the industry. Furthermore, feeds with proper nutritional characteristic will ultimately be more environmentally friendly. The objective of this project is to determine if microbial protein, recovered from the digester may be feasibly used as a supplement in fish feeds.

- a) **Results:** A 60-day feeding trial was conducted to determine the nutritional quality of protein recovered from the thermophilic anaerobic digestion of poultry litter. Four diets were formulated, containing a total of 38% crude protein, of which 0%, 10%, 20% and 40% was from recovered protein. Triplicate groups of 25 fish were fed one of the four diets to satiation. Results indicate the possibility of substituting 20% of dietary protein with the recover protein from digested poultry wastes, without deleterious effect. The findings suggest that further research be conducted on the net absorption, pathogen fate and economy of the protein from thermophilic anaerobic digestion.
- b) **Successes Resulting in Change** (Outcomes): This work is not sufficiently mature to show outcomes.
- c) **Stakeholder Benefits** (Impacts): Although milestone objectives have been accomplished, this work is not sufficiently mature to show an impact.
- d) **Assessment of Accomplishments**: The project is successfully progressing and will be continued.
- e) **Source of Expenditures & Impact Scope**:
 Funding Source- USDA/ CSREES Federal Administration Research Grant, Evans-Allen (Section 1445)
 Scope of Impact- State-specific, 1890 Research

Key Theme: Diversified/Alternative Agriculture

Program 1.5: *Alternative Crop Studies*

Description: West Virginia farmers and landowners are in need of high value cash crops, which require minimal space. Of the 18,000 farms in the state, 67% are less than 180 acres, mostly in woodland, and 80% sell less than \$10,000 of products per year. Crops such as culinary herbs and ginseng could gross as much as \$10,000 per acre. Research and extension will focus on marketing strategies of alternative crops, such as herbs and organic produce, as well as economic analysis of different herb production systems.

- a) **Results:** This project is currently under development. Results of the alternative crop marketing research will help current growers identify and develop direct marketing strategies for their produce and provide information for farmers interested in starting an alternative crop enterprise. Results of the economic analysis study will provide growers with information regarding the feasibility, profitability and return on investment of different production practices, such as greenhouse vs. outdoor and conventional vs. hydroponics.
- b) **Successes Resulting in Change (Outcomes):** This work is not sufficiently mature to show outcomes.
- c) **Stakeholder Benefits (Impacts):** This work is not sufficiently mature to show an impact.
- d) **Assessment of Accomplishments:** The project is progressing and should be continued.
- e) **Source of Expenditures & Impact Scope:**
Funding Source- Evans-Allen (Section 1445)
Scope of Impact- State-specific, **Integrated** 1890 Research and Extension

Key Theme: New Uses of Agricultural Products & Organic Agriculture

Program 1.6: *Alternative Crop Methods*

Description: The organic materials resulting from thermophilic anaerobic digestion are known to have biological value as a fertilizer. Further trials are required to demonstrate this feasibility. The pilot plant thermophilic, anaerobic digester is being used to produce both solid and liquid residues for growing fruits, vegetables and cereal crops. Comparisons are being made with the same crops using conventional and 'Bridge' fertilizers in field trials using raised beds and various greenhouse hydroponic systems. In addition, tomato germplasm selected for hydroponic greenhouse production is being evaluated for production and quality when grown on liquid digested effluent. This screen will identify promising varieties and germplasm to use in developing tomatoes for the Bioplex hydroponic environment.

- a) **Results:** Raised bed fertilizer trials in year 2002 included blueberries, tomatoes, potatoes, corn, turf and hay. Four fertilizer treatments and a control were compared. The digested liquid performed significantly better than two commercial fertilizers and the control. The digested liquid is as effective as a nitrogen source when compared to several commercial fertilizers that are specifically formulated for grasses. Normally, high ammonia fertilizers are injected in the soil to prevent ammonia loss to the atmosphere. The digested liquid may not require this specialized application method. Hydroponic lettuce production compared three levels of liquid effluent based on N content as an alternative fertilizer compared to a commercial nutrient solution in nutrient film technique (NFT). The liquid effluent shows promise as an alternative fertilizer for lettuce hydroponic productions. A small bato (or dutch) bucket system for hydroponic tomato production was installed in the winter of 2001. After analysis of the liquid effluent, the high amount of ammonia is one of the major problems in tomato production using effluent as the nutrient source. In addition, the low calcium concentration was probably the source for the blossom end rot difficulties.
- b) **Successes Resulting in Change (Outcomes):** This work is not sufficiently mature to show outcomes beyond research results.
- c) **Stakeholder Benefits (Impacts):** The use of digested poultry litter liquids and solids may be a potential low cost pathogen-free alternative to commercial fertilizers and raw manures. Several farmers have expressed interest in the use of the digester effluents on hay, row, and vegetable crops and in the construction of small on-farm anaerobic digesters. Extension specialists plan to disseminate research results and information on small-scale digester construction and operation to regional farmers.
- d) **Assessment of Accomplishments:** The WVSC Associate Director of 1890 Research (Dr. Chatfield) is responsible for assessments and he is also the principal investigator. This research project is progressing well and will be continued.
- e) **Source of Expenditures & Impact Scope:**
 Funding Source- USDA/ CSREES Federal Administration Research Grant,
 Evans-Allen (Section 1445)
 Scope of Impact- State-specific, 1890 Research

Goal 2: To provide a safe and secure food and fiber system ...

Executive Summary:

- (A) Two research projects are answering fundamental questions associated with a safe and secure food and fiber supply. WVSC organic chemists are developing synthesis routes for natural compounds including pyoluteorin - an antifungal agent. This antibiotic is particularly effective against pathogens of cotton. Upon maturity this project should identify more efficient routes to the synthesis of a family of antibiotics and semi synthetic compounds that are effective in controlling cottonseed pathogens. Microbiologists at WVSC are developing

methodologies to monitor and reduce the presence of microbes in process waters and food products. The proposed approaches will use physio-chemical means and bioluminescence for detection of microbial removal. More effective protocols are being developed to permit greater speed, sensitivity and selectivity for the detection of microbes in milk and orange juice. Also new technologies are being applied to the detection of specific coliforms in drinking waters.

- (B) These two projects are not sufficiently mature to show change or benefit to stakeholders within WV.
- (C) These two projects are not sufficiently mature to document benefits to clientele and stakeholders.
- (D) The Development of Crop Anti-fungal Agents project is stalled and will be discontinued in May, 2003. The Improved Detection of Microbes in Food Products project is progressing will be continued.
- (E) Resource Allocation:

Total Invested - \$ 162,000

SY - .50

Key theme: Integrated Pest Management

Program 2.1: *Development of Crop Anti-fungal Agents*

Description: Organic chemists at WVSC are developing synthesis routes for natural compounds including pyoluteorin - an antifungal agent. This antibiotic is particularly effective against pathogens of cotton. A useful preparation of this compound will allow more extensive testing against a wider range of pathogens and this may reveal an even more impressive array of biological activities and novel crop uses. In addition, analogs of pyoluteorin may be more effective protective agents. Collaborators at the USDA Horticulture Crops Research Laboratory in Corvallis, OR and in Europe are interested in doing the extensive testing necessary to give us potential leads for effective analogs of pyoluteorin that should be synthesized.

- a) **Results:** Pyoluteorin can be broken into two pieces by retrosynthetic analysis. The one part is the substituted resorcinol ring. This is easily prepared from resorcinol as 2,6-dihydroxycarboxylic acid derivatives. Specifically, this compound was prepared both as the dimethyl ether and as the bistetrahydropyranyl ether. Both of these compounds are now available as the carboxylic acids and the acid chlorides should be easy to prepare. The first year of work on this project has provided a better understanding of the chemistry and problems of preparing this compound. A simple analog, 2-benzoylpyrrole, was made and fully characterized. Additional analogs as well as pyoluteorin itself should be prepared this coming year.
- b) **Successes Resulting in Change (Outcomes):** This work is not sufficiently mature to show outcomes beyond research results.

- c) **Stakeholder Benefits** (Impacts): This work is not sufficiently mature to show an impact.
- d) **Assessment of Accomplishments**: The project is stalled and will be discontinued in May, 2003.
- e) **Source of Expenditures & Impact Scope**:
 Funding Source- Evans-Allen (Section 1445)
 Scope of Impact- State-specific & [Multistate](#), 1890 Research

Key theme: Food Safety; HAACP

Program 2.2: *Improved Detection of Microbes in Food Products*

Description: Producers, processors, and consumers of food products in the United States have become increasingly aware of food safety issues over the past decade. Millions of food related illnesses attributable to microbial contamination are documented every year. Food may be contaminated during production, processing, storage or preparation. The overall goal of this research is to develop a rapid method to specifically detect pathogens or indicator organisms in liquid products by coupling bioluminescence detection to bacteria-specific antibodies. In order to use the Bioprobe for diverse food products, specific protocols need to be developed for those products. A second goal of this research is to use the Bioprobe luminometer for developing rapid hygiene monitoring methods that do not rely on growth and can quickly identify pathogens even in a stressed condition. The main deficiency in existing techniques is the inability to rapidly pinpoint pathogenic microorganisms in samples with a relatively high concentration of naturally resident bacteria, e.g. potable water or ward floor or wall surface. The third goal of this research is to develop a rapid method to specifically detect pathogens or indicator organisms in liquid products such as potable water through investigation of filter discs.

- a) **Results:** We are developing new applications for bioluminescence-based technologies that will permit greater speed, sensitivity and selectivity in the detection of microbial contaminants, such as *E. coli* and *Salmonella*. The methodology depends on being able to break microbial cells and release the contained ATP and mix the extract with a cocktail of luciferin and firefly luciferase. The most frequently performed test on potable water samples is to detect fecal coliforms. We have begun to develop protocols to couple bioluminescence detection to polyclonal and monoclonal antibodies specific to particular microbial food contaminants. We have conducted a preliminary experiment using anti-*E. coli* antibodies that are reactive with all O and K serotypes, coupled to the BioRad Immun-Star Chemiluminescent Detection System. We will also extend the antibody-based detection to at least one other bacterial species that is important in the food or health care industries.
- b) **Successes Resulting in Change** (Outcomes): This work is not yet sufficiently mature to show outcomes beyond research results.

- c) **Stakeholder Benefits (Impacts):** This work is not sufficiently mature to show an impact.
- d) **Assessment of Accomplishments:** The work is progressing and should be continued.
- e) **Source of Expenditures & Impact Scope:**
 Funding Source- Evans-Allen (Section 1445)
 Scope of Impact- State-specific, 1890 Research

Goal 3: To promote a healthy, well-nourished population through research and education...

Executive Summary: West Virginia is one of the most impoverished and least healthy states in the country. Positive correlations between poverty and inadequate nutrition raise concerns for the health of the state's children and families. The Center on Hunger and Poverty report that 175,000 individuals in West Virginia were food insecure on average in 1996-1998, meaning they were hungry or at risk of hunger. Many of these individuals are children. Proper nutrition is crucial for sound health and normal development. Inadequate food energy intake can cause problems with attention, concentration, learning and other essential daily activities. Seniors who experience hunger are at risk for serious health problems such as a higher risk of stroke and increasing the incidence of depression as well as possibly limiting the efficacy of many prescription drugs. Surveys to evaluate existing nutrition education programs and assess current perceptions of nutrition in West Virginia are under development; in partnership with West Virginia University Extension Service. Nutrition education programs are being designed with a built-in means to assess their effectiveness. In the future new models for nutrition education will be delivered, evaluated for effectiveness and ranked for further development.

- (A) The project is not sufficiently mature to show change within WV.
- (B) The project is not sufficiently mature to document benefits to clientele and stakeholders.
- (C) The human Health and Nutrition project is progressing will be continued.
- (D) Resource Allocation:

Total Invested - \$65,000
SY - 0.45

Key Theme: Human Health & Nutrition

Program 3.1: *Nutrition Education in West Virginia*

Description: The perception of nutrition related issues have an impact on the delivery and utilization of nutrition education programs. For instance, if a legislator holds the perception that hunger is not an issue in West Virginia he/she is unlikely to propose policy that will increase availability of food. In the same way, a single mother may

perceive her malnourished child to be “small for his age” and not seek assistance in securing proper nutrition. These perceptions must be identified in order to develop appropriate nutrition education programs to meet the needs of our community and state. It is also imperative to look at existing programs in the state and across the nation to determine what is successful and what can be expanded or replicated in West Virginia. For instance, community gardens often provide a food source to a local area, but it hasn't been determined that availability of vegetables actually impacts the nutritional diets of those living in that community.

- a) **Results:** Surveys to evaluate existing nutrition education programs and assess current perceptions of nutrition in West Virginia are under development; in partnership with West Virginia University Extension Service. Nutrition education programs are being designed with a built-in means to assess their effectiveness. In the future new models for nutrition education will be delivered, evaluated for effectiveness and ranked for further development.
- b) **Successes Resulting in Change (Outcomes):** This work is not sufficiently mature to show outcomes beyond research results.
- c) **Stakeholder Benefits (Impacts):** This work is not sufficiently mature to show an impact.
- d) **Assessment of Accomplishments:** The work is progressing and should be continued.
- e) **Source of Expenditures & Impact Scope:**

Funding Source- Evans-Allen (Section 1445)

Scope of Impact- State-specific, 1890 Research

Program 3.2: Safe Quality Food Practices: Farm to Consumer.

Description: The project goals are to identify production practices on West Virginia and Virginia dairy operations and develop alternatives that improve food safety. Scientists will establish a base of operations and associated rationales, then suggest improvements to increase dairy product safety, reduce costs and reduce use of antibiotics. This is a two-state effort with responsibilities shared by staff at West Virginia State College and Virginia Tech. A WVSC scientist is responsible for designing, conducting and analyzing the survey instrument. Information generated in the survey phase will be utilized by Virginia Tech food scientists to develop improved dairy practices.

- a) **Research Results:** The WVSC scientist is primarily responsible for providing auxiliary services to food scientists at Virginia Tech. The survey instrument has been written and undergone two refinements. A final draft is anticipated soon. The materials for mailing and returning the instruments have been designed. The survey will be tested prior to final distribution. Therefore, the work is not sufficiently mature to show results.
- b) **Successes Resulting in Change (Outcomes):** This work is not sufficiently mature to show an outcome.

- c) **Stakeholder Benefits** (Impacts): This work is not sufficiently mature to show an impact.
- d) **Accomplishments Assessment:** The project is progressing and will be continued.
- e) **Source of Expenditures & Impact Scope:**
 Funding Source- USDA/CSREES Cooperative Agreement with Virginia Tech.
 Scope of Impact- State-specific, **Multistate**, and **Integrated** 1890 Extension & Research

Goal 4: To achieve greater harmony between agriculture and the environment....

Executive Summary: West Virginia's natural resources are very important to the state's economy. Research efforts underway at WV State College (WVSC) are exploring efficient and economical methods to lessen and remediate the impact of extractive and agricultural industries. The development of novel, real-time methods of heavy metal detection in soil and groundwater will increase chances of identifying potential pollution hazards. The synthesis and utilization of diaminonaphthalimide dye (ED-4) for detection of copper and other trace metals is one of the methods being studied. A second program addresses a major issue surrounding the mining industry – the cleanup of mine drainage containing heavy metals. A new metal-binding polymer synthesized by WVSC chemists, may provide a novel, cost-effective alternative to conventional methods of heavy metal remediation. Studies by WVSC microbiologists on thermophilic anaerobic digestion are demonstrating how to significantly decrease pollution associated with livestock wastes. Soil chemists are characterizing the sorption mechanism of xenobiotics found in agricultural pesticides, on both soils and humic materials. Understanding this mechanism will allow development of more effective detoxification procedures. Approximately 90% of West Virginia is hardwood forest. The environmental impact of invasive plant species on these native forests has profound economical effects. One such species being studied is the invasive Tree-of-Heaven, from Asia. Studies are currently underway, by forest ecologists, to determine the primary mechanism of competition during early establishment of this tree. Understanding how the invasive competes will provide a target to better control its spread into native forests.

- (A) These projects are not sufficiently mature to show change within WV.
- (B) These projects are not sufficiently mature to document benefits to clientele and stakeholders.
- (C) Some of these programs are stalled and will be discontinued in May 2003. Other such as the Bioplex program are progressing, engaging stakeholders and should have impacts and benefits soon.
- (D) Resource Allocation:

Total Invested- \$ 1,156,000
SY- 8.88

Key Theme: Soil Quality, Water Quality and Hazardous Materials

Program 4.1: *Detection of Toxins in Soil and Groundwater Supplies*

Description: The specificity of metal-binding compounds is often high enough to allow quantification of specific metals found in complex mixtures such as soils. The goal of this work is to make and characterize metal-binding compounds that can be used to indicate/report when they have adsorbed a specific metal. Thus assays could be developed to measure various metals from complex soil mixtures. The metal binding compound diaminonaphthalimide (ED-4) is one compound being studied because of its high specificity for copper. The evaluation of ED-4 will lead to compounds and procedures to evaluate heavy metals in industrial sites and brown fields.

- a) **Results:** ED-4 has been synthesized and is currently being chemically characterized. Once the structure has been confirmed, the ED-4 studies will commence using a soil collected from Putnam County. An ED-4 analog has also been synthesized. Both ED-4 and the analog will be tested in studies for determination of copper utilizing a characterized WV soil. Other analogs of the parent compound have been designed and their respective routes of synthesis have been planned.
- b) **Successes Resulting in Change (Outcomes):** This work is not sufficiently mature to show outcomes beyond research results.
- c) **Stakeholder Benefits (Impacts):** This work is not sufficiently mature to show an impact.
- d) **Assessment of Accomplishments:** The project is stalled and we are considering discontinuation.
- e) **Source of Expenditures & Impact Scope:**
Funding Source- Evans-Allen (Section 1445)
Scope of Impact- State-specific, 1890 Research

Program 4.2: *Novel Methods for Heavy Metal Removal in Mine Drainage*

Description: Soil and water near areas with mining, industry, and agriculture are susceptible to contamination due to acid mine drainage, release of industrial wastewater, and pesticide use. Metals such as copper and aluminum, as well as some pesticides not only threaten plants and animals in streams and rivers, but also threaten the productivity of soils. This research will evaluate metals in streams impacted by acid mine drainage and novel methods for remediation.

- a) **Results:** A pumice-based polymer was investigated as a remediation tool for acid mine drainage. The large particle size pumice was generally ineffective in capturing the Fe⁺³ and Cu⁺² ions from lab-prepared standard solutions. Additional effort was geared toward improving the process for addition of the polymer to the pumice. All initial work involved the use of a polymer with a molecular weight of 450,000. This molecular weight polymer is extremely viscous

and difficult to mix with the pumice. A polymer with a much lower viscosity was secured and the application was improved considerably. A second phase was the detection of metal contaminations. The sites were sampled over a ten-week time period analyzing water, soil, and plant material. Future plans will continue this study for the testing of the polymer's ability to remediate this contaminated site.

- b) **Successes Resulting in Change** (Outcomes): This work is not sufficiently mature to show outcomes beyond research results.
- c) **Stakeholder Benefits** (Impacts): This work is not sufficiently mature to show an impact.
- d) **Assessment of Accomplishments**: This project will be discontinued in May, 2003.
- e) **Source of Expenditures & Impact Scope**:
Funding Source- Evans-Allen (Section 1445)
Scope of Impact- State-specific, 1890 Research

Program 4.3: *Determining the Sorption Mechanism of Atrazine and 2,4-D on Soil and Humin*

Description: Over application of pesticides can cause toxins to run-off into streams or leach into groundwater. Pesticides such as 2,4-D and atrazine not only threaten plants and animals in the streams and rivers, but also threaten the productivity of soils. Better estimates of the amounts of these chemicals are needed. Also a clearer understanding of the way pesticides react with soil components will facilitate more effective land management plans. This project will evaluate the interaction of 2,4-D and atrazine with the soils.

- a) **Results**: This project utilized two student workers during the summer. The project utilized two soils samples fractionated into several subsections. Once fractionated, the soils and the organic matter were incubated with 2,4-D and atrazine. The work presented was conducted with one soil buffered with 0.1 M phosphate pH 7.0. The collected isotherms were typical of soils and the various fractions comprising soil. Future work will include incubating these soils at other pH values of 3, 6, 9, & 10. Some of this data was presented at the National ACS Meeting.
- b) **Successes Resulting in Change** (Outcomes): The work was presented at the recent SSSA meeting, an abstract elucidating preliminary result was produced.
- c) **Stakeholder Benefits** (Impacts): This work is not sufficiently mature to show an impact.
- d) **Assessment of Accomplishments**: The project is stalled and we are considering discontinuation.
- e) **Source of Expenditures & Impact Scope**:
Funding Source- Evans-Allen (Section 1445)
Scope of Impact- State-specific, 1890 Research

Key Theme: Agricultural Waste Management

Program 4.4: “*Bioplex*” (Application of Microbiology & Related Techniques on Waste Management and Environmental Remediation)

Description: The “Bioplex” program at West Virginia State College (WVSC) comprises five research projects involving the utilization of agricultural waste and thermophilic anaerobic digestion: (1) The incorporation of thermophilic, anaerobic digestion as an integral part of farm waste treatment associated with the farming industry; (2) Pathogen reduction with waste treatment systems and thermophilic anaerobic digestion has as an alternative for complying with public health requirements; (3) The feasibility of using microbial protein from anaerobically digested poultry litter as a substitute for fishmeal in trout feeds; (4) The relationship between the biochemical control parameters and the resident microbial populations (the link between microbial community structure and bioreactor function); and (5) The organic materials or byproducts resulting from thermophilic anaerobic as a value source of fertilizers.

- a) **Results:** (a.1) As it relates to operational parameters of the pilot thermophilic anaerobic digester, a flexible reliable control system has been developed for the pilot plant digester. (a.2) The removal of the cyst stage of the murine protozoan *Giardia muris* from a waste stream using TAD was investigated. A 21-day experiment using a 1-liter anaerobic digester was completed. (a.3) In regard to formulating aquaculture feed from digested poultry litters, the utilization of thermophilic anaerobic digestion for the treatment of poultry waste results in products with good biological value and we have tested them as supplements in fish feeds. (a.4) The preliminary assessment of bacterial and archaeal diversity has found significantly higher bacterial diversity; the high percentage of unique bacterial ribotypes among the clones also indicates that many more bacterial ribotypes remain to be discovered. (a.5) The raised bed fertilizer trials in year 2002 included blueberries, tomatoes, potatoes, corn, turf and hay. Four fertilizer treatments and a control (no added fertilizer) were compared. It was found that the digested liquid is as effective as a nitrogen source when compared to several commercial fertilizers that are specifically formulated for grasses.
- b) **Successes Resulting in Change (Outcomes):** A local greenhouse producer and engineer are currently interested in using our technology and findings to design a greenhouse-digester integrated system that uses hydroponics and aquaculture. This project is in the first phase of marketing feasibility. Two stakeholders, both in energy businesses wish to develop marketable products using the biogas from our pilot plant digester. Joint funding proposals are under development.
- c) **Stakeholder Benefits (Impacts):** This work is not sufficiently mature to show an impact.
- d) **Assessment of Accomplishments:** The WVSC Associate Director of 1890 Research (Dr. Chatfield) is responsible for assessments. Dr. Chatfield is also research director for this project. He feels it is progressing and should be continued.
- e) **Source of Expenditures & Impact Scope:**

Funding Source- Evans-Allen (Section 1445), USDA/CSREES
Scope of Impact- State-specific, 1890 Research

Key Theme: Invasive Species

Program 4.5: *Predicting Effects of Ailanthus altissima Invasion on West Virginia Hardwood Forests*

Description: *Ailanthus altissima* (Tree-of-Heaven) is an early-successional Asiatic tree that has invaded 46 of the lower 48 states, reaching greatest abundance in urban areas and along major roadways. This tree species spreads through wind dispersed seed and is tolerant of a wide range of soil conditions. It forms dense clonal stands and previous research has revealed the production of an allelopathic compound. The purpose of this research is to investigate the extent of *A. altissima* invasion into a West Virginia forest. Study includes effects of root exudates on germination, growth, and formation of root nodules in native and other invasive species; and, subsequently, nutrient dynamics and forest succession.

- a) **Results:** 700 specimens were found within the study forest, ranging in size from seedling to >20m in height. A series of experiments were conducted to develop laboratory methods appropriate for replicating interactions between *A. altissima* and establishment stages of neighboring plants in the wild. Differential effects of aqueous leaf extracts and root exudates were observed among the seven commercial species used. Each treatment affected radicle growth in one or more of the test species. In contrast, no treatment affected rates of germination. These observations corroborate previous reports that *A. altissima* produces one or more water-soluble compounds that are degraded by microbial activity and lend credence to the hypothesis that they can affect neighboring vegetation in nature.
- b) **Successes Resulting in Change (Outcomes):** Media exposure to this project has triggered interest in invasive organisms throughout the state and the nation; providing opportunities for WVSC to begin establishing itself in the area of ecological research. Dr Greer has been invited to present to the Senate Forest Management Review Committee, of the WV Legislature; regarding threat of invasive species to West Virginia forests and economy, with emphasis on tree-of-heaven. He has also been asked to sit on the WV Invasive Species Working Group and on the USDA/CSREES Invasive Species Grant Review Panel. In addition, collaboration with the US Forest Services Northeastern Research Station and Marshall University has been established.
- c) **Stakeholder Benefits (Impacts):** Information generated from this research is assisting forest managers rank the threat of *A. altissima* relative to other invasive species and to identify microhabitats in which native species are most vulnerable.
- d) **Assessment of Accomplishments:** Very good progression.
- e) **Source of Expenditures & Impact Scope:**

Funding Source- Evans-Allen (Section 1445)
Scope of Impact- State-specific, 1890 Research

Goal 5: To enhance the economic opportunities and quality of life among families and individuals...

Note: Executive Summary described in the 1890 Cooperative Extension Section

Total Invested- \$16,000
SY- .13

Key Theme: Economic Development

Program 5.1: *Community Asset Mapping Research*

Description: WVSC is working to identify community strengths using asset mapping techniques and the 1890 “Community Voices” leadership development curriculum. We are developing a systemized approach to analyzing the community economies to identify potential options for creation, attraction, retention, or expansion of jobs and income opportunities. This target industry analysis will be combined with community assessment and planning and with the results of an environmental scan, done by the WVSC Community and Technical College, to produce a forecasting model and employability study, which can be applied to the West Virginian economy. Analytical tools and community planning tools are utilized to enhance community decision-making and to incorporate local desires and ideas. The results of this research will help guide us in our extension programming.

- a) **Results:** The preliminary data from the three county area is being evaluated from the employability study. Raw local data for the LOCI studies has been obtained. Staff will format and input into a database in order to run the analyses. Although this research is still in the preliminary stage, eventual impact will be the empowerment of key decision makers to effect positive change on their local economies.
- b) **Impact:** We have established partnerships with the faith-based community and other community groups as a point of entry into the under-served areas of the Kanawha Valley to do this analysis. In addition, we are assessing areas of need in urban and rural parts of West Virginia. WVSC ACEOP and the West Virginia Research League are working to complete a project, which will include a detailed target industry analysis for Clay, Kanawha and Putnam Counties. In addition to the employability study, staff from the Department of Community Resource and Economic Development has been trained to run Local Economic Impact Analysis (LOCI) studies, using software developed by Georgia Technological University.
Stakeholder Benefits (Impacts): The results of this research will ultimately help community leaders predict changes in local output, employment and income resulting from changing economic conditions.
- c) **Source of Expenditures & Impact Scope:**
Funding Source- Evans-Allen (Section 1445)
Scope of Impact- State-specific, 1890 Research

SECTION III. 1890 COOPERATIVE EXTENSION PROGRAMS

TABLE 2. 1890 COOPERATIVE EXTENSION: SUMMARY OF RESOURCE ALLOCATION BY GOAL AND PROGRAM

1890 COOPERATIVE EXTENSION								
NATIONAL GOAL / PROGRAM		RESOURCE ALLOCATION						
		FISCAL YEAR 2002						
		FEDERAL			STATE		OTHER SOURCES	
GOAL	PROGRAM DESCRIPTION	SECTION 1444	OTHER	FTE	STATE	FTE	OTHER	FTE
GOAL 2								
Key Theme:	Food Safety	50,000		0.40				
	TOTAL	50,000		0.40	0	0.00	0	0
GOAL 3								
Key Theme:	Human Nutrition	123,200		1.00	35,000	0.20		
	TOTAL	123,200		1.00	35,000	0.20	0	0
GOAL 5								
Key Theme:	Community Resource & Economic Development							
Program 5.1	Technology Education	51,400		0.30				
Program 5.2	Adult Literacy Enhancement	45,250		0.40	50,000	0.30		
Program 5.3	Community Asset Mapping	24,400	5,000	0.20				
Program 5.4	Youth Workforce Education	25,000		0.20				
Program 5.5	Adult Workforce Education	68,250		0.20				
Program 5.6	Urban Community Garden	24,500		0.25				
Key Theme:	Youth Education							
Program 5.7	CYFAR	22,000	40,000	0.65				
Program 5.8	Youth Development / 4H	333,000	41,000	3.50			229,000	8.5
Key Theme:	Family Education							
Program 5.9	Parenting Education	143,000		1.25				
Program 5.10	Transitional Living	190,000	449,000	1.50				
	TOTAL	926,800	535,000	8.45	50,000	0.30	229,000	8.5
	GRAND TOTAL	1,100,000	535,000	9.85	85,000	0.50	229,000	8.5

WVSC 1890 Cooperative Extension Overview

Extension programs at West Virginia State College were recently reinstated as of April of 2000. These programs have been designed, and currently delivered to underserved and underrepresented audiences of the state. Currently, these programs are limited to the College's surrounding counties, however, in coordination with our sister land-grant Institution (WVU), our programs are now extending to other counties in the Southern region of the State. Our extension staff continues collecting preliminary data from community environmental scans and stakeholder sources to more effectively serve the needs of our target audiences (clients). In only 3 years of service, many of these programs have had already a profound impact on those individuals we served. It is our hope our extension and outreach programs reach more individuals as other sources of funding become available. The following section presents a description of all the activities and the impact they have had on the communities we served in FY 2002.

Goal 2: To provide a safe and secure food and fiber system ...

Executive Summary: It is estimated that up to 10% of children suffer from serious food allergies in the state of West Virginia. Up to 5% of the U.S. total population continue to have severe allergic reaction to food even into adulthood. Knowledge and awareness of food allergies and their potential severity, however, is limited. Professionals in the food preparation industry are only just beginning to understand the consequences of cross-contamination of food products. In West Virginia, the awareness is extremely limited due to the state's rural nature. In an effort to reach affected consumers, educational brochures about food allergies were developed by the Nutrition and Health Education Extension Specialist and support staff. About 10% of the specialist's time was devoted to this project. Upon completion, area physicians for accuracy reviewed the brochures. These brochures include signs and symptoms of allergies, strategies for managing reactions, as well as sources for support. Distribution is accomplished through pharmacies, pediatrician offices and allergists in the area.

Resource Allocation:

Total Invested- \$50,000
FTE - 0.4

Key Theme: Food Safety

- (a) **Description:** The goal of this program is to increase awareness and prevention among patients, parents, health care providers, school nurses and education providers.
- (b) **Impact:** Brochures with information about food allergies and sources for support have been printed. They are being distributed to pharmacies, pediatricians and allergists in the area. These brochures are meant for children/parents to find further information about allergy control and anaphylaxis prevention. A short follow-up phone survey was done after 30 physicians reviewed the brochure for its content and effectiveness. Nine responded and indicated they would inform patients about the WVSC program and have the brochures available. Three indicated they would be willing to participate in the program.
- (c) **Funding Source and Scope of Impact**

Funding Source- Smith-Lever Section 1444
Scope of Impact- State-specific

Goal 3: To promote a healthy, well-nourished population through research and education...

Executive Summary: Chronic diseases, such as cancer, osteoporosis, diabetes, hypertension, heart disease and obesity can be profoundly affected by diet. West Virginia consistently ranks worse than the nation with regard to chronic disease. Preventing chronic disease, as well as treating it, may be accomplished through the

adoption of healthy behaviors. Improved nutrition practices are an important aspect of health promotion, in conjunction with adequate physical activity; management of blood cholesterol, blood sugar levels, and blood pressure; cessation of tobacco use and moderation in the use of alcohol. Furthermore, West Virginia has ranked consistently higher than the United States as a whole with regard to prevalence of obesity, as documented through state-level monitoring by the Centers for Disease Prevention and Control's (CDC) Behavioral Risk Factor Surveillance System (BRFSS). Obesity is a contributor to numerous and varied chronic diseases. The number of obese children is also rising in West Virginia. Overweight and obese children are more likely to become overweight/obese adults, placing them at higher risk for the chronic diseases cited above. Training individuals to value good nutrition and to commit to a healthy lifestyle is a necessary goal as society recognizes the monetary and health benefits associated with practicing good nutrition.

In programs aimed at preventing obesity and optimizing nutrition in children, the Nutrition and Health Education Specialist partnered with other organizations to provide needed services to otherwise neglected children in the area. A partnership with the West Virginia University Cooperative Extension's Expanded Food and Nutrition Education Program (EPNEF) provided nutrition education and 12,063 nutritious snacks for children in low-income public housing after school programs. WVSC's Summer Food Service Program, funded through the WV Department of Education Office of Child Nutrition, provided 11,116 school-age children with nutritious, free lunches during the summer months. In addition, 173 participants, primarily adolescent and elderly, participated in various nutrition education programs written by a consortium of 1890 Institutions. The program, called Families First: Nutrition Education and Wellness System (FF-NEWS), was developed to meet the nutrition education needs of minority families.

Resource Allocation:

Total Invested - \$158,200
FTE – 1.2

Key Theme: Human Nutrition

- (a) **Description:** The WVSC Nutrition and Health Education Specialist worked with the West Virginia University Cooperative Extension's Be Smart, Eat Smart program to deliver nutrition education programs in our after-school programs. These programs were designed to promote lifelong eating habits and encourage consumption of nutritious agricultural commodities. In FY 2002, WVSC put emphasis on the special nutrition needs of our ever-increasing senior population. Nutrition education was provided in senior centers in both Putnam and Kanawha Counties. WVSC joined the Families First: Nutrition Education and Wellness System (FF-NEWS) consortium. FF-NEWS is a curriculum developed by six 1890 Institutions to meet the nutrition education needs of minority families. WVSC also participated in the Summer Food Service Program, through the WV Department of

Education Office of Child Nutrition. The Summer Food Service Program helps children get the nutritious, free lunches, for which they qualify at school, during the summer months.

- (b) **Impact:** WVSC's Nutrition and Health Education Extension Specialist received training to use FF-NEWS. In FY 2002, 173 participants, primarily adolescents and elderly, completed portions of this curriculum. Adolescent educational programs consisted of eating disorder risks and the importance of good nutrition. The classes for seniors focused on identification of nutritional risks, osteoporosis, cardiovascular disease and obesity. A strong partnership continues to exist between WVSC and WVU Cooperative Extension in the area of nutrition education. WVSC used the WVU Be Smart, Eat Smart nutrition education program in our six K-6 after-school sites. Children attending the after-school programs received twice a week nutrition education from trained staff. In addition, they received 12,063 nutritious snacks utilizing commodity foods. The Summer Food Service Program has been very successful at WVSC. Through a partnership with Charleston Housing Authority, WVSC provided nutritious meals throughout the summer months at six low-income housing complexes in Charleston. In addition, five community centers in the Kanawha Valley were sponsored by WVSC and also served. The eligible youths at the eleven sites, ages 18 years and younger, received 1116 nutritious meals last summer.

- (c) **Funding Source and Scope of Impact**

Funding Source- Smith-Lever (Section 1444), State of West Virginia

Scope of Impact- Multistate (FF: NEWS Curriculum: TX, AR, LA, AL, VA, SC, OK, MI and WV), State-specific

Goal 5: To enhance the economic opportunities and quality of life among families and individuals...

Executive Summary: West Virginia has been particularly hard hit by the downturn in the world economy. The reduction in the industries that historically helped to insulate the state, which has always lags behind the rest of the country even in the best of economic times, from the worst economic shocks are no longer strong enough to fill that role. The coal mining and chemical industries, the largest employers of high paying jobs, have downsized in recent years. In the Kanawha Valley, 10,000 workers middle to upper income workers in the chemical industry have been laid off or relocated in the past ten years. Young people leave the state to find employment and WV is ranked last in the US in in-migration. According to the 2000 Census, WV is ranked last or in the bottom five in every major indicator of economic well-being including: lowest per capita income, lowest family income, the highest unemployment rate, highest rate of teenage pregnancy, lowest percentage of high-school graduates, and the lowest level of high school graduates. WV also has the oldest median age of any state and the rate is increasing. Lastly, WV has lowest percentage of people who have the basic computer skills necessary to enter the workforce. According to State of Literacy in America, 1998,, one out of four West Virginians reads at Literacy Level 1. Generally, those adults who

score at Level 1 have difficulty performing such everyday tasks as locating an intersection on a street map, reading and comprehending a short newspaper article, or calculating total costs on an order form.

To address these issues to begin to try to reverse the plethora of negative indicators, WVSC ACEOP is conducting both strength or asset studies and community needs assessments to guide us in our program development. Based on the preliminary stakeholder input received from community meetings; surveys and questionnaires; and meetings with key community leaders such as educators and employers, we are beginning to develop new outreach programs with local decision-makers to address a wide range of youth and family education, community resource and economic development issues including: vibrant, sustainable communities, promising digital futures and the balanced use of natural resources. Specific new programs in 2002 included providing workforce education through basic literacy and computer literacy programs and a summer youth entrepreneurship program for youth. To build community spirit, we have begun an urban community garden program.

ACEOP has directed its youth, family, and nutrition and health education resources to the buttressing and further development of its respective programming initiatives. Youth activities, such as CYFAR, the After-School Program, and 4H have been sustained. Our family programming has effected two transitional living projects, as well as augmented activities in the arena of parenting. Nutrition and health initiatives continued its focus upon providing nourishment to the needy.

We are in the process of soliciting the input we need in order to develop the most effective programs to address the issues of the state. It is as yet too early in the program development phase to have significant extension results within the state supported with formula funds. The benefits to our clientele and stakeholders of our overall programs are not measurable at this point, however, we have had positive feedback from participants and are continue to assess the need to direct our efforts in developing programs that will eventually have significant impact on the state.

Resource Allocation:

Total Invested - \$ 1,740,800
FTE – 17.25

Key Theme: Community Resource and Economic Development

Program 5.1: Technology Education

- (a) **Description:** WVSC is working to identify community strengths and areas of need in urban and rural parts of West Virginia. WVSC created needs assessments, asset mapping and economic forecasting projects to determine direction for program development. Three “Community Connection Centers” were opened, with

six computers in each center. Located in limited-resource areas, the computer centers allow access to technology to help bridge the digital divide. We anticipate opening additional centers in the next year. WVSC partnered with Charleston Housing in a successful grant application to the U.S. Department of Housing and Urban Development to expand this program to ten Charleston Housing locations. WVSC will receive \$250,000 to begin this program in the spring of 2003.

- (b) **Impact:** 45 people have participated in introductory computer and Internet classes at the WVSC Community Connection Centers. According to pre-tests, many had never used a computer before and had never been on the Internet. Post-tests revealed 100% have interest in additional computer training. Introduction this technology is an important first step to being competitive in today's workforce.
- (c) **Funding Source and Scope of Impact**

Funding Source- Smith-Lever (Section 1444)

Scope of Impact- State-specific

Program 5.2. Adult Literacy Enhancement

- (a) **Description:** With the funding received under the Higher Education Policy Commission (HEPC) State Priorities program, WVSC ACEOP assessed the need for and established Adult Literacy Centers at four locations in Kanawha County. The ultimate goal of the program is to increase access to literacy education, computers and technology for older youth and adults in the Kanawha Valley. The desired impact for individual participants will include increased self-sufficiency; increased job skills and improved access to employment opportunities; increased technological literacy; increased financial literacy; and enhanced community and social connections. The program coordinator held meeting to assess needs in the community and determined the locations that would serve as literacy centers serving adults and older out-of-school youth. Each center is located in an area of economic distress with high unemployment rates, low educational attainment and much lower than average median family income. ACEOP has further assessed the current level of literacy programs in the Kanawha Valley and has worked to develop partnerships with several organizations, including the Kanawha Valley Literacy Volunteers, Mission West Virginia and the Regional Educational Service Area III (RESA III). Grant funds were also used to provide introductory computer classes at each location. The participants in this "train the trainer" format program have been utilized to assist new participants obtain the basic knowledge needed to access the literacy software materials. As part of the program, each participant in an organized class is asked to volunteer twenty hours to staff and assist in the centers. Established participants are also required to contribute 10 hours of time to serve as reading tutors at each site.
- (b) **Impact:** With the establishment of the centers, the short-term objectives of providing a year-round "open access" technology-based program for children, youth and adults; providing telecommunications and technology education for individuals of all ages and providing accessible locations for adult literacy

education, GED classes, career skills training and other related programs and to give referrals when appropriate to other providers to interested adults been met. WVSC ACEOP was funded by the state HEPC for a second year, beginning October of 2002. In the second year, we will be able to provide services and assess the impact on the adult literacy rate in the Kanawha Valley.

Ten after-school teachers received 6 hours of literacy training in order to be able to use educational software and materials. One project coordinator was hired. She received training through RESA III. Ten formal classes teaching basic computer skills were held. The six-week classes (Six hours a week) averaged eight students each for a total of 2880 contact hours. We began with computer instruction because most of the literacy enhancement material is computer based. 80 participants were served under this program. Based on an exit survey, all participants demonstrated increased technological literacy at the completion of the program and were more comfortable using computers in their daily lives. 92% said they would be comfortable using computer technology to access material in order to improve basic reading and math skills. In the next year, the goal is for 50% of all participants will reach a higher level of literacy upon completion, based on recognized assessment instruments. The time frame in the first year of this project did not allow for testing the participants. Six volunteers have been recruited and have helped to staff the centers. Two have since completed Laubach Literacy training.

In meeting these short-term objectives, WVSC has contributed to advancing the policy agenda as set forth in Senate Bill 653. The increased technological knowledge and overall literacy will help eventually help to diversify and expand the economy, increase the competitiveness of the workforce, and increase the number of individuals eligible for college education. A second HEPC state priorities grant was received to expand this program (to focus on technological literacy and job readiness) and a \$250,000 Neighborhood Networks grant was funded (in partnership with Charleston Housing) to fund those sites for two years.

(c) **Funding Source and Scope of Impact:**

Funding Source- Smith-Lever (Section 1444) State funding through the Higher Education Policy Commission

Scope of Impact- State-specific

Program 5.3. Community Asset Mapping

- (a) **Description:** Clay County, West Virginia, is an area that has been largely ignored by the national and state economic growth of the 1990s. Its population has lingered at about 10,000 for several decades, and per capita income and unemployment are among the worst in a state that has lagged behind the nation. The program introduced the concept and application of asset-mapping for

community development. Community members were asked to collaborate in identifying local resources through a series of meetings, culminating in a combination of these Aneighborhood@ reports to create opportunities for the entire county.

- (b) **Impact:** There were approximately four hundred and fifty Clay County citizens served. Nearly two hundred and fifty surveys were completed, with more than three hundred dollars raised by and for the county. Information regarding the assets of individuals was collected during the tenure of the events. Imperative to the success of these initiatives was the leadership and direction of five community coordinators, who marketed, organized, and managed the festivities in their respective areas. The accomplishments of the Clay County CAMP project are due to the people of Clay County, whose resolve is partially manifested by their patient interest, continued counsel, and active participation. A combination of these reports, which may create internal economic development opportunities for the entire county, is currently pending.

- (c) **Funding Source and Scope of Impact**

Funding Source- Smith-Lever (Section 1444), USDA/USDOL mini-grant

Scope of Impact- County Specific

Program 5.4: Youth Workforce Education / Digital Playhouse

- (a) **Description:** WVSC ACEOP partnered with a local faith-based non-profit, Saving Our Children, to hold summer camp called “Digital Playhouse” for high-school students during the summer of 2002. During this program, leadership development exercises were infused into a workforce development program where students participated in lessons on: video and audio production, how to prepare a resume, forming and managing a business as an entrepreneur, interviewing techniques, and digital editing. The participants of the “Digital Playhouse” program wrote a detailed business plan forming their own production company.

- (b) **Impact:** Twenty youth participated in the Digital Playhouse program. In addition to the entrepreneurial education, youth participated in leadership classes on topics such as, conflict resolution, responding to authority, and treating others with respect. During the WVSC homecoming celebration, 45 copies of the video were sold to visiting alumni. Profits were distributed among the participants. Due to the success of this program, we will look to duplicate it in other locations in the summer of 2003.

- (c) **Funding Source and Scope of Impact**

Funding Source- Smith-Lever (Section 1444)

Scope of Impact-- State Specific

Program 5.5: Adult Workforce Education and Career Assistance Network
(www.wecan4u.net)

- (a) **Description:** In September 2000, the Department of Land-Grant Programs entered into a collaborative multi-state agreement with the Alabama Cooperative Extension System (focused at Alabama A&M University-AAMU), to establish a national website promoting workforce development, financial literacy, and training opportunities as per the Workforce Investment Act of 1998. This website, the Workforce Education and Career Assistance Network for You (www.wecan4u.net), was founded in June 2001, in order to bridge the digital divide with information technology, thereby effecting individual empowerment.
- (b) **Impact:** The WECAN4U website has had over 3000 hits, serving over 2500 individuals throughout the world. Additionally, the maintenance of this site is only approximately \$200.00 per annum. This is a low overhead resource that no longer requires the physical proximity of Extension Faculty to deliver informational programming. We anticipate further opportunities to maintain and promote WECAN4U in conjunction with its 1890 Land-Grant partner, AAMU.
- (c) **Funding Source and Scope of Impact**

Funding Source- Smith-Lever (Section 1444)

Scope of Impact- Multi-state, 1890 Extension (WVSC and Alabama A&M University)

Program 5.6: Urban Community Gardening

- (a) **Description:** Based on a survey done by Charleston Housing and ACEOP in which residents expressed interest in horticulture education and gardening, WVSC extension specialists and staff piloted a Community garden in the capital city of Charleston as a partnership with the Charleston Housing Authority . The community garden helps to bring a neighborhood together and provides a mechanism for collaboration between the residents, an institution of higher education and the public housing administration. Due to the initial success, this program continued in 2002. Master Gardener's from West Virginia University assisted with maintaining the garden and with the horticulture education serving the residents of Charleston Housing. A series of meetings were held in the in September of 2002 in order to ascertain interest in the program among residents and to survey how we could improve the program to better meet there needs. We will work to incorporate this input into this year's program, beginning early in March with an educational lecture on square foot gardening and cool temperature crops. The children's workbook, "A Plant Begins", was again distributed to children in the after-school program and to some local schools. Hands-on learning activities, such as potting flowers, were provided to schoolchildren as a way to get them interested in gardening. We are in the process of working with Kanawha County Schools to establish children's gardens at the four elementary schools.

- (b) **Impact:** Fifteen families in two housing authority locations participated in designing the layout, preparing the field and planting and maintaining the garden. In the spring of 2003, WVSC extension personnel will kick-off the garden project with a six week introductory course in gardening. In addition to gardening basics, nutrition information will be given so residents will be knowledgeable on the nutritional value of the vegetables they decide to grow. Square foot gardening techniques will also be highlighted. In partnership with the Kanawha County Master Gardeners, home gardening and introductory horticulture classes have also been conducted in the WVSC after-school programs and senior living centers in Charleston. Individuals participating in these classes have requested additional courses be offered. A children's workbook was produced called "A Plant Begins" and has been used as a learning tool and distributed to 1500 school children at the county fair and after-school programs.
- (c) **Funding Source and Scope of Impact**

Funding Source- Smith-Lever (Section 1444)
Scope of Impact- State Specific

Key Theme: Youth Education

Program 5.7: Children, Youth, and Families At-Risk (CYFAR)

- (a) **Description:** WVSC partners with West Virginia University through the Children, Youth, and Families At-Risk (CYFAR) Grant Initiative. WVSC is operating a CYFAR site as part of a statewide literacy and capacity-building program. The partnership with WVU has led to a county-wide collaborative in order to have a greater impact on community capacity-building. Also, a state-wide initiative designed to increase the use of technology in extension has been effected. This partnership has brought nationally recognized speakers to WV to increase the awareness of poverty-related issues and to begin a train-the-trainer program.
- (b) **Impact:** The WVSC CYFAR site serves an average of 50 students a day, while providing after-school tutoring, homework assistance and educational programs such as character development. Students are provided with books and are encouraged to read daily. The fifth through ninth graders are given newspaper articles from the Internet. Then they are asked questions designed to challenge them to use their comprehension, vocabulary, and reasoning skills. The younger students are read to and questioned about the material. The fifth through ninth graders are given vocabulary skills workbooks, which they work from twice per week. In order to encourage parents to read to their children at home, the kindergarten through third grade was given a one-year subscription to the magazine "Highlights." This magazine was mailed directly to the students' homes. Of the students that receive letter grades, the following results were tabulated for reading/language/English/Spelling: 44% increased by one letter grade; 44% maintained their grade at either an A or B; and 12% dropped by at least one letter grade.

(c) **Funding Source and Scope of Impact**

Funding Source- WVU/CYFAR Sub-contract, Smith-Lever (Section 1444)

Scope of Impact- State-specific

Program 5.8: Youth Development/4-H

- (a) **Description** WVSC offers many youth-oriented programs geared toward giving young people opportunities to develop skills that will assist them in career choices, education attainment and personal development. Youth participate in career and education-focused summer camps, after-school and literacy programs. WVSC began offering non-traditional 4-H programs during this fiscal year. Community leaders, who received input from local community and church members, guided the 4-H program initiatives, which include the Teen Leadership Connection (TLC) and the Character Counts Programs. The TLC program involves urban youth and teaches life skills such as diversity, conflict resolution, social skills and leadership development. WVSC hosted its fourth annual Summer Transportation Institute in the summer of 2002. This four-week residential program offered 23 8th and 9th graders the opportunity to learn about careers available in the transportation industry and experience a small taste of a college environment. The Health, Science, and Technology Academy (HSTA) program developed in partnership between the HSTA Joint Governing Board and the Local Governing Boards. Membership on these boards includes teachers, parents, health care professionals, professors, and high school students. In partnership with WVU Health Sciences, WVSC hosted a one-week residential camp focused on forensic science and leadership development. WVSC operates six K-6 after-school programs in partnership with local housing authorities. Each center is equipped with computers and Internet access that bridges the digital divide. Snacks are provided to 100% of our participants daily, increasing their access to safe and nutritious foods.
- (b) **Impact:** The students that completed the Teen Leadership Connection 4-H Leadership and Community Bike Program have reported positive changes to their interpersonal behavior, and improved school and class attendance. They also increased participation in community service activities. Parents reported an improvement in the student's behavior at home during the TLC program. The Character Counts Curriculum was presented to 117 students in after-school programs. The program focuses on the six pillars of character: Responsibility; Respect; Fairness; Caring; Citizenship; and Trustworthiness. This curriculum provides a practical means of character development while accommodating a variety of lifestyles and belief systems. The Summer Transportation Institute curriculum is designed by the Intermodal Advisory Board, which is comprised of twelve professionals from transportation related fields. In addition to students from the state of West Virginia, six students from Washington, D.C. attended this program. The addition of these students proved to be a positive way to introduce the students to diversity. Through field trips, guest speakers, and class projects,

100% of participants reported an increase in their knowledge of careers in transportation related fields.

Prior the start of the student HSTA camp, 5 teachers participated in a week-long training to increase their knowledge of forensic science, and to improve their students leadership development. Forty-seven low income and/or minority 10th grade students participated in the HSTA program. They solved a mock murder through the use of current forensic science techniques, as well as leadership and teambuilding techniques. Students were also exposed to various cultural and recreational activities they may not normally experience in their neighborhoods. The students reported the following in their evaluation of the program: (1) 85% reported that HSTA had a moderate to very high impact on increasing their interest in health care careers; (2) 95.24% reported a moderate to very high increased knowledge of forensic science; and (3) 100% reported being satisfied with their experience.

On average, 80 students a day participate in our After-School Program. They are engaged in tutoring; homework assistance; social enrichment; drug prevention and elimination; nutrition and wellness; nutrition education; character development; and other educational activities. Additionally, each center hosted parent nights. Parents provided input in the program curriculum, and through these meetings several parents began volunteering in the program.

(c) **Funding Source and Scope of Impact**

Source: Smith-Lever (Section 1444), City of Charleston, Charleston Housing, US Department of Transportation-Federal Highway Administration, Subcontract WVU/Health Science Technology Academy Grant

Scope of Impact- State-specific

Key Theme: Family Education

Program 5.9: *Parenting Education*

- (a) **Description** Adolescent pregnancy prevention is an area addressed by WVSC Cooperative Extension. The Baby Think It Over Program® uses computerized infant simulators to demonstrate the responsibilities associated with parenting. Teens are assigned a simulator that cries and needs life-like care (e.g. bottle feeding, diaper changing, burping, rocking, etc.) The goal of this program is to increase awareness among teens of the time and effort required to raise an infant. It also encourages teens to wait to become parents until they are older and able to financially and emotionally care for children. An assessment was initiated with residents of local housing authorities to determine the parenting education needs of this population. Response rates were extremely low and this assessment will be

distributed to a wider audience during fiscal year 2003. A curriculum is being developed and piloted in workshops on the dangers of Internet Use. Some Internet Safety Issues covered include: Sexual Predators Online, Hate Group Recruitment through the Internet, Identity Theft, Credit Card Fraud, Email Hoaxes, Online Chatting and Dating.

- (b) **Impact:** Approximately 313 youth and adults participated in parenting related programs. This is a 13% increase from last year. Topics covered include: Internet safety; adolescent pregnancy prevention; dating violence; and reporting child abuse and neglect. Pre and post-test data indicate 80% of Baby Think It Over participants demonstrated an increased knowledge of the responsibilities of parenting. Comments of participating students indicate the successful impact this simulation has had on their views of teenage parenthood. An 18-year-old female stated “babies take a lot more care than I thought. My boyfriend and I thought we were ready for kids, but now we’ve decided to wait.” Parents agree this program is beneficial. When asked, “What do you think your son/daughter learned from this experience,” parents responded, “it’s tougher to be a parent than it looks,” and “having a child isn’t always fun.” One parent responded that the most memorable moment from this experience was “watching my daughter put the baby’s needs ahead of her own.” 60% of the participants reported an increase in communication between teens and parents on the issues of teen pregnancy.

Internet Safety pre and post-test data indicate that 100% of these participants demonstrated increased competencies of Internet usage and 90% of participants demonstrated increased knowledge of Internet dangers and safety measures. One parent stated, “I always thought my child was safe online because he is a good kid and wouldn’t go to a dangerous site. I now realize it isn’t him I have to worry about, it is all of the traps set for kids online I need to be aware of.” Several parents commented on the importance of spending more time talking with their children about their online activities and becoming more involved. The request for this series of workshops is growing and a formal curriculum should be completed in the next fiscal year.

(c) **Funding Source and Scope of Impact**

Funding Source- Smith-Lever (Section 1444)
Scope of Impact- State-specific

Program 5.10: Transitional Living Education

- (a) **Description:** WVSC built two facilities on campus to conduct a pilot program that provided transitional housing and college matriculation opportunities to high-risk youth and formerly homeless and battered women. Through partnerships with local non-profit agencies providing case management services, this project has allowed students who have the grades to enter college, but not the life skills to remain there, an opportunity to receive the additional support they need to be successful.

(b) **Impact:** The first 6 students moved into the facilities in August 2002. Residents have participated in 25 basic skills lessons to help prepare them for the transition into college life. A total of 3086 contact hours have been spent with these residents during these months including case management services and 24-hour support from resident assistants. An evaluation of the first semester impacts and outcomes will be conducted following the completion of the first semester. Youth in foster care, social service providers, and community members were involved in the development of this project. Residents, referral agencies, partners and ACEOP staff will complete satisfaction surveys and evaluations at various times throughout the year and any identified issues will be addressed.

(c) **Funding Source and Scope of Impact**

Source: Smith-Lever (Section 1444), U.S. Department of Housing and Urban Development, HUD HOME funds

Scope: State-specific

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