

2013 West Virginia State University Combined Research and Extension Annual Report of Accomplishments and Results

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I. Report Overview

1. Executive Summary

West Virginia State University (WVSU), via the Gus R. Douglass Institute's (GRDI) Agricultural and Environmental Research Station (AERS) and Extension Service (ES), entered its 13th year of programming in 2013. Research and Extension programs continued working toward an integrated programming effort responsive to the needs of University, State, and national stakeholders. GRDI has undergone organizational restructuring, due to changes in University administration, programming needs and decreasing federal appropriations. Despite this organizational evolution, the mission of the Institute continues to be one of delivering educational and life-long learning opportunities by conducting research, teaching and outreach services to improve the well-being of West Virginia citizens (particularly those traditionally underserved).

Research and extension efforts continue to expand and integrate programs. As the University builds infrastructure and capacity, and is able to secure additional funding sources, existing research and extension programs are further strengthened and new programming is being developed to better serve the needs of our stakeholders. To further work toward integration, the 2013 Research and Extension Advisory Council Meeting included attendance by representatives from West Virginia University's (WVU) research and extension programs. The inclusion of WVU in this meeting marked the beginning of collaborations between our two institutions to address new combined federal reporting requirements.

The Masters of Science in Biotechnology program, within the College of Natural Sciences and Mathematics, continues to benefit from the development and maturation of research programs. Split appointments of graduate research faculty within GRDI have permitted the increased participation of undergraduate and graduate students in agricultural and environmental research.

Federal support continues to be a key success factor for the Institute. Delay's in receiving FY2013 funding had significant impact in program delivery in all areas. As additional state appropriations and other resources continue to be attained, the University carries on efforts to strengthen and extend its research and extension programming capacity and programs. The following report provides details of the programs supported by Evans-Allen, Section 1444 Program and McIntire-Stennis formula funds appropriated to 1890 Institutions and matching funds provided by the State of West Virginia.

WVSU Land-Grant programs uses the five NIFA Priority Areas as our planned programs, along with two additional programs (Resilient Youth and Families, and Community Vitality). These two additional programs are in response to expressed needs of the citizens of West Virginia. Aligning our research and extension programs within the priority areas has also provided the opportunity to see where our research and extension programs complement each other and where there is opportunity to build greater collaboration. Having the research and extension efforts laid out side by side in same plan allows the programs to more easily identify pathways for new integrated efforts. Integration efforts have evolved faster in some programs more than others.

Program highlights for 2013 include:

Research programs provided hands on opportunities for 20 graduate and undergraduate students

in various experiments involving basic horticulture, genetics, functional genomics and marker assisted plant breeding. This training in cutting edge technology and applied breeding techniques will make them more competitive in various science and technology industries.

Climate Change: 33 workshops were delivered on the topics of mushroom production, cold frame construction, rain barrels, hydroponic/aeroponic production, community and adaptive garden creation and pesticide application to 428 participants around the state. Community and adaptive gardens were built and assisted in five locations around the state involving 80 participants. Tours of local garden sites and vineyards were offered and attended by over 50 people increasing the visibility of our program outreach efforts. Presentations on our community garden programs and other program efforts were delivered on several occasions to audiences totaling over 100 people.

Food Safety Programs saw 100% of the cooking school Participants learned how to store and prepare food safely according to the USDA standards, without cross contamination.

Childhood Obesity: After surveying youths participating in the EFNEP Extension program, results have indicated that:

- 75% increased fruit consumption
- 20% increased overall knowledge about healthy food choices and physical activity
- 50% reported a decrease in television viewing
- 85% reported food label reading (up from 45 percent in pre-test results)

Resilient Youth and Family Programs: At completion of the Fast Track program, 100% of youth were able to demonstrate in their lesson the methods used to budget and purchase a meal healthier than the meals they usually consume, while staying within their budget.

Health Science and Technology Academy's post survey results show 72% reported an increased interest in science; 48% increased interest in math, and; 79% reported that HSTA had a moderate to very high impact on their interest in pursuing health care careers. The Summer Transportation Institute post survey, 58% reported an increased interest in science, technology, and engineering.

Community Vitality Programs: The Step Up for Women/Women Work project met it's goal in 2013 with 30 graduates. Program leadership reports an 80% placement rate and a significant change in earning power, demonstrated by starting wages as high as \$15/hour for union jobs. Residential jobs start at \$9/hour.

Total Actual Amount of professional FTEs/SYs for this State

Year: 2013	Extension		Research	
	1862	1890	1862	1890
Plan	0.0	30.0	0.0	16.0
Actual	0.0	21.5	0.0	10.2

II. Merit Review Process

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

- Internal University Panel

- External University Panel
- External Non-University Panel
- Combined External and Internal University Panel
- Combined External and Internal University External Non-University Panel

2. Brief Explanation

WVSU utilizes a multi-faceted merit review process that includes faculty, staff, and stakeholders that are both internal and external to the Gus R. Douglass Land-Grant Institute. Merit reviews are performed annually by the joint Research and Extension Advisory Council (REAC). This group of stakeholders is comprised of WVSU faculty and staff, external stakeholders, and administrators and faculty from other land-grant institutions. This meeting is held in the Fall of each year. Council members participate in Plan of Work development with Extension and Research faculty and staff.

The REAC also conducts the external program evaluations. The Council consists of local stakeholders with a wide variety of backgrounds, business leaders and other community members considered as suitable stakeholders for Extension and Research efforts. The evaluations from all these groups are utilized to help administrators prioritize and allocate funds to specific land-grant programs. Program direction specific to each area is developed through round-table discussions with faculty & staff members alongside the groups of the Council members. Each member of the Council is given background information and provided with the opportunity to assess and provide direct input into program development.

In addition, internal merit review of all programs and personnel occurs annually by the Associate Deans for Extension and Research. The review consists of technical reports, student involvement, publications and presentations, collaborations, and stakeholder involvement.

III. Stakeholder Input

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

- Targeted invitation to traditional stakeholder groups
- Targeted invitation to non-traditional stakeholder groups
- Targeted invitation to traditional stakeholder individuals
- Targeted invitation to non-traditional stakeholder individuals

Brief explanation.

Potential stakeholders are identified and invited to participate on the review panel to evaluate land-grant programs at WVSU. The invitation is for a two year commitment and stresses the importance and requirement of research and extension programs to have both basic and applied relevance, collaboration, student involvement and a regular evaluation and assessment process by a diverse stakeholder group. At the end of the two years, members have the option of remaining or suggesting another from within their organization.

Extension program leaders, specialists, research administrators and scientists seek individuals and groups within a specific area of expertise or understanding to provide input and guide the direction of the programs in order to better address the needs of those individuals and groups. Several collaborations have been formed as a result of these activities. Traditional

stakeholder groups include representatives of university research, industry, state departments of agriculture, federal agencies, and lay people, including small farmers and entrepreneurs.

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

1. Method to identify individuals and groups

- Use Advisory Committees
- Use External Focus Groups
- Open Listening Sessions
- Other (Researcher Interactions)

Brief explanation.

Potential stakeholders are identified and invited to participate on the review panel to evaluate land-grant programs at WVSU. The invitation is for a two year commitment and stresses the importance and requirement of research and extension programs to have both basic and applied relevance, collaboration, student involvement and a regular evaluation and assessment process by a diverse stakeholder group. At the end of the two years, members have the option of remaining or appointing another from within their organization.

Extension program leaders, specialists, research administrators and scientists seek individuals and groups within a specific area of expertise or understanding to provide input and guide the direction of the programs in order to better address the needs of those individuals and groups. Several collaborations have been formed as a result of these activities. Traditional stakeholder groups include representatives of university research, industry, state departments of agriculture, federal agencies, and lay people, including small farmers and entrepreneurs.

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

1. Methods for collecting Stakeholder Input

- Meeting with traditional Stakeholder groups
- Meeting with traditional Stakeholder individuals
- Meeting specifically with non-traditional groups

Brief explanation.

The goal of the WVSU Research and Extension Advisory Council is to have a minimum of three representatives for each program who can provide analysis and feedback on each of the planned programs. Potential council members are recommended each year by administrators, faculty, program leaders, specialists, and researchers. Non-participating members are dropped to maintain a functioning council.

The 2013 REAC Meeting was impacted by the government shutdown as many council members were not able to attend due to budget constraints. There was a significant change in the format of this year, from presentation reporting to integrated working groups. Each group was given questions regarding priority issues, program strengths and weaknesses, as well as possible threats to the programs to answer. Groups then presented findings to the others.

Group and individual responses to questions were collected to document all discussions that

took place during the meeting from committee participants and analyzed to assist in guiding the programming process. This change was very well received by staff, faculty and council members alike. Several attendees reported that they "benefitted from the experience and were happy to be engaged". It was suggested by several that additional program specific meetings be planned for the future.

3. A statement of how the input will be considered

- To Identify Emerging Issues
- Redirect Research Programs
- In the Staff Hiring Process
- To Set Priorities

Brief explanation.

Information was collected from committee participants to document all discussions that took place during the meeting, and analyzed to assist in guiding program development for future plans of work. The change in the format was very well received by staff, faculty and council members alike.

Brief Explanation of what you learned from your Stakeholders

1. Stakeholders appreciate the opportunity to interact with research and extension staff.
2. They take this opportunity seriously and new REAC members were amazed at what is being done.
3. They want to see even greater collaboration between research and extension staff.
4. Several attendees reported that they "learned a lot and were happy to be engaged".
5. It was suggested by several that additional program specific meetings be planned for the future

IV. Expenditure Summary

1. Total Actual Formula dollars Allocated (prepopulated from C-REEMS)			
Extension		Research	
Smith-Lever 3b & 3c	1890 Extension	Hatch	Evans-Allen
0	1242506	0	1362990

2. Totaled Actual dollars from Planned Programs Inputs				
Extension			Research	
	Smith-Lever 3b & 3c	1890 Extension	Hatch	Evans-Allen
Actual Formula	0	1197143	0	1474582
Actual Matching	0	1011037	0	1112448
Actual All Other	0	0	0	68887
Total Actual Expended	0	2208180	0	2655917

3. Amount of Above Actual Formula Dollars Expended which comes from Carryover funds from previous				
Carryover	0	0	0	111593

V. Planned Program Table of Content

S. No.	PROGRAM NAME
1	Global Food Security and Hunger
2	Climate Change
3	Sustainable Energy
4	Childhood Obesity
5	Food Safety
6	Resilient Youth and Families
7	Community Vitality

V(A). Planned Program (Summary)

Program # 1

1. Name of the Planned Program

Global Food Security and Hunger

Reporting on this Program

V(B). Program Knowledge Area(s)

1. Program Knowledge Areas and Percentage

KA Code	Knowledge Area	%1862 Extension	%1890 Extension	%1862 Research	%1890 Research
101	Appraisal of Soil Resources		5%		0%
102	Soil, Plant, Water, Nutrient Relationships		10%		0%
111	Conservation and Efficient Use of Water		10%		0%
131	Alternative Uses of Land		10%		0%
201	Plant Genome, Genetics, and Genetic Mechanisms		0%		30%
202	Plant Genetic Resources		0%		26%
204	Plant Product Quality and Utility (Preharvest)		5%		2%
205	Plant Management Systems		5%		11%
206	Basic Plant Biology		10%		2%
302	Nutrient Utilization in Animals		5%		29%
403	Waste Disposal, Recycling, and Reuse		10%		0%
405	Drainage and Irrigation Systems and Facilities		5%		0%
721	Insects and Other Pests Affecting Humans		10%		0%
806	Youth Development		5%		0%
902	Administration of Projects and Programs		5%		0%
903	Communication, Education, and Information Delivery		5%		0%
	Total		100%		100%

V(C). Planned Program (Inputs)

1. Actual amount of FTE/SYs expended this Program

Year: 2013	Extension		Research	
	1862	1890	1862	1890
Plan	0.0	1.5	0.0	7.8

Actual Paid Professional	0.0	2.0	0.0	7.0
Actual Volunteer	0.0	0.0	0.0	0.0

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

Extension		Research	
Smith-Lever 3b & 3c	1890 Extension	Hatch	Evans-Allen
0	111362	0	896315
1862 Matching	1890 Matching	1862 Matching	1890 Matching
0	94050	0	634321
1862 All Other	1890 All Other	1862 All Other	1890 All Other
0	0	0	0

V(D). Planned Program (Activity)

1. Brief description of the Activity

Research efforts focused in the areas of: aquaculture, genetic mapping, genomics and breeding for selected vegetables, and trialing of vegetables and cut flowers, which provided opportunities for more than a dozen graduate and undergraduate students to be involved in various experiments in basic horticulture, genetics, functional genomics and marker assisted plant breeding. This training in the cutting edge technologies offered to students side by side with the applied breeding procedures of crosses and selection will strengthen their employment competitiveness in various public and private enterprises science and technology industries.

Eighty seven melon collections belonging to Eastern European, Euro-North American and Asian types were screened with 268 mapped single-locus microsatellite markers primers for Linkage Disequilibrium (LD), structure and association mapping studies. As a result, a nested association mapping panel was developed, involving 7 diverse heirloom varieties of melon with resistant to powdery mildew, Downey mildew and Fusarium wilt.

Field trials with jalapeno and cayenne peppers were undertaken in the Summer of 2013. Included in the trial was an early, dwarf cayenne pepper which had been selected in prior years as a possible release. Fruit number and weight of marketable and cull fruit was collected and is currently being analyzed.

A variety trial of Asian Greens was conducted with Dr. Lewis Jett of WVU in the Fall of 2013. Data was collected on size and weight of the plants from this replicated trial. Data is currently be analyzed with results to be presented at regional conferences and local growers meetings

WVSU Extension personnel developed and provided educational classes and workshops to increase knowledge of alternative agricultural practices for small scale producers, as well as production methodologies, crop selection, and crop maintenance. Youth agricultural program efforts were conducted through the SCRATCH Project utilizing the Junior Master Gardener curriculum.

2. Brief description of the target audience

Fish feed manufacturers, federal agencies (ARS) involved in rainbow trout breeding, fish farmers

Horticulturalists, plant breeders, farmers/growers, small-farm operators, minority farmers and landowners, underserved rural communities , state and federal agencies, and students.

Homeowners, consumers, volunteer organizations, various segments of the youth population, and other agricultural and natural resource focused entities.

3. How was eXtension used?

Use of eXtension occurred through participation in three communities of practice (CoP): Plant Breeding and Genomics, eOrganic, and Consumer Horticulture. One of our staff is part of the executive committee for the Plant Breeding and Genomics from SoCAP and functioned as a co-Leader of the community in 2013. "Ask an Expert" questions were answered for all three CoP.

V(E). Planned Program (Outputs)

1. Standard output measures

2013	Direct Contacts Adults	Indirect Contacts Adults	Direct Contacts Youth	Indirect Contacts Youth
Actual	233	635	100	1487

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

Patent Applications Submitted

Year: 2013
 Actual: 0

Patents listed

3. Publications (Standard General Output Measure)

Number of Peer Reviewed Publications

2013	Extension	Research	Total
Actual	1	4	0

V(F). State Defined Outputs

Output Target

Output #1

Output Measure

- Identify breed of rainbow trout that has genetic potential for improved nutrient utilization

Year	Actual
2013	0

Output #2

Output Measure

- Train undergraduate and graduate students in biotechnology, plant genomics and agricultural related fields

Year	Actual
2013	13

Output #3

Output Measure

- Identification of DNA markers, fruit related genes, association panels, and value-added progenies

Year	Actual
2013	384

Output #4

Output Measure

- Develop vegetable varieties for small farm production
Not reporting on this Output for this Annual Report

Output #5

Output Measure

- Both urban/rural clientele will receive information on research-based horticultural management.

Year	Actual
2013	660

Output #6

Output Measure

- Adult volunteers and youth will receive training in horticulture and agriculture through JMG and other training opportunities.

Year	Actual
2013	1934

Output #7

Output Measure

- Workshops targeted at alternative agriculture endeavors will be held in targeted counties.

Year	Actual
2013	43

Output #8

Output Measure

- WVSU Extension Service staff will generate media articles and stories related to alternative agriculture.

Year	Actual
2013	6

V(G). State Defined Outcomes

V. State Defined Outcomes Table of Content

O. No.	OUTCOME NAME
1	New diet formulation for rainbow trout
2	Development of improved feed for rainbow trout will lead to reduction in aquaculture pollution
3	Development of value-added, disease resistant cultivars
4	Development of vegetable varieties suitable to small farm environment.
5	Volunteers will exhibit increased knowledge of providing age-appropriate horticulture and agriculture programs to youth.
6	Extension clientele will implement best practices in agriculture and natural resources based on research-based knowledge.
7	Farmers/growers will utilize best practices with alternative agricultural enterprises to diversify their income portfolio.
8	Through the Agritourism initiative participants will create new or develop existing enterprises to increase their sustainability.

Outcome #1

1. Outcome Measures

New diet formulation for rainbow trout

2. Associated Institution Types

- 1890 Research

3a. Outcome Type:

Change in Knowledge Outcome Measure

3b. Quantitative Outcome

Year	Actual
2013	2

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

Fish feed manufacturers, fish breeders, farmers and students. Rainbow trout with improved growth and nutrient retention will benefit the farmers? bottom line in terms of profitability. Improved nutrient retention efficiency will benefit the environment by reducing pollution from un-retained discharged as effluents. Students used the research and the findings as part of their MSc. thesis, and will graduate with a degree in Biotechnology opening up new career opportunity

What has been done

A 2 x 3 factorial experiment was conducted to evaluate the effects of rainbow trout families (high FE or low FE) and diets (45/10 or 45/20 or 45/30 percent protein/fat) on the performance, mitochondrial respiratory chain enzyme activities and gene expression levels in the liver, muscle and intestine. The analyses of mitochondrial respiratory chain enzyme activities were performed on tissues (liver, intestine and muscle). Data analyzed were for weight gain, feed efficiency, feed consumption, specific growth rate, body composition, and visceral fat content. The following analyses are ongoing: nutrient utilization efficiencies (protein efficiency ratio, protein productive value, energy efficiency ratio, energy productive value, lipid productive value, and lipid efficiency ratio), biochemical analyses of mitochondrial respiratory chain enzyme activities, and gene expression levels of selected mitochondrial genes on tissues (liver, intestine and muscle).

Results

Dietary composition and fish family did not significantly affect weight gain, feed efficiency, condition factor, and specific growth rate. The rainbow trout family significantly affected hepatosomatic index while dietary composition significantly affected viscerosomatic index, visceral fat content, and respiratory control ratio using succinate and pyruvate as substrates. There was significant interactive effect between diet and family for respiratory control ratio using succinate as a substrate. Students used the research and the findings as part of their MSc. thesis, and will graduate with a degree in Biotechnology opening up new career opportunities.

4. Associated Knowledge Areas

KA Code	Knowledge Area
302	Nutrient Utilization in Animals

Outcome #2

1. Outcome Measures

Development of improved feed for rainbow trout will lead to reduction in aquaculture pollution

2. Associated Institution Types

- 1890 Research

3a. Outcome Type:

Change in Condition Outcome Measure

3b. Quantitative Outcome

Year	Actual
2013	2

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

Fish feed manufacturers, fish breeders, farmers and students. Rainbow trout with improved growth and nutrient retention will benefit the farmers? bottom line in terms of profitability. Improved nutrient retention efficiency will benefit the environment by reducing pollution from un-retained discharged as effluents.

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Dietary composition and fish family did not significantly affect weight gain, feed efficiency, condition factor, and specific growth rate. The rainbow trout family significantly affected hepatosomatic index while dietary composition significantly affected viscerosomatic index, visceral fat content, and respiratory control ratio using succinate and pyruvate as substrates.

There was significant interactive effect between diet and family for respiratory control ratio using succinate as a substrate. Students used the research and the findings as part of their MSc. thesis, and will graduate with a degree in Biotechnology opening up new career opportunity.

4. Associated Knowledge Areas

KA Code	Knowledge Area
302	Nutrient Utilization in Animals

Outcome #3

1. Outcome Measures

Development of value-added, disease resistant cultivars

2. Associated Institution Types

- 1890 Research

3a. Outcome Type:

Change in Action Outcome Measure

3b. Quantitative Outcome

Year	Actual
2013	0

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

Demand for melon crops in the US continues to rise exponentially. Cantaloupe yield increased by 35% between 1992 and 2007, and total production of watermelon for 2007 was 4.29 billion lbs. Most yield improvement can be credited to improved cultural practices or breeding for resistance to diseases and pests rather than fruit yield components. Breeding for yield in melons is very difficult. Understanding genetic control of phenotypic variation is an important first step to utilize marker assisted breeding of yield components in development of high-yielding, disease resistant melon varieties with improved fruit.

This program offers a plethora of opportunities for graduate and undergraduate students to become acquainted with and get involved in various experiments in basic horticulture, genetics, functional genomics and marker assisted plant breeding. Training in the cutting edge technologies offered to students side by side with the applied breeding procedures of crosses and selection will brighten their employment opportunities in various public and private enterprises at national and international levels.

What has been done

Eighty seven melon collections belonging to Eastern European, Euro-North American and Asian types have been screened with 268 mapped single-locus microsatellite markers primers for Linkage Disequilibrium (LD), structure and association mapping studies. The nested association mapping populations have been advanced to F3 generation. This study is the first attempt at detecting linkage disequilibrium (LD) in the melon genome. Analysis of molecular variance of the three groups of eastern European and Asian accessions indicated highly significant differences across and within groups.

The diversity study identified markers for fruit length, weight, sucrose percent and seedling traits. A SNP assay containing 384 markers was developed, suitable for high resolution genetic mapping and resolving genetic diversity among cultivated watermelon.

Results

A nested association mapping panel has been developed, involving 7 diverse heirloom varieties of melon with resistant to powdery mildew, Downey mildew and Fusarium wilt. A mixed linear model was implemented to detect QTL for various fruit traits. Various levels of QTL with high to moderate stringency were detected for fruit shape, fruit weight, soluble solids, and rind pressure and a majority of them was found to be in agreement with the previously published data, indicating that association mapping can be very useful for melon molecular breeding.

Overall genetic similarity was 0.95% among the cultivars, so edible watermelons of world collections maintain 5% genetic diversity. However, when African red-fleshed watermelons were analyzed separately, showing distinctly different characteristics and were separated by 7%, 8.5% and 11% genetic distance, respectively, from the remaining types indicating these lines will be of immense use for diversifying watermelon varieties in the US.

4. Associated Knowledge Areas

KA Code	Knowledge Area
201	Plant Genome, Genetics, and Genetic Mechanisms
202	Plant Genetic Resources
206	Basic Plant Biology

Outcome #4

1. Outcome Measures

Development of vegetable varieties suitable to small farm environment.

2. Associated Institution Types

- 1890 Extension
- 1890 Research

3a. Outcome Type:

Change in Action Outcome Measure

3b. Quantitative Outcome

Year	Actual
2013	0

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

Project 1: Small farms involved in specialty crop agriculture are re-emerging as a key player in the US agriculture scheme. In WV, the number of farms owned by a family or individual has increased in the past ten years with almost double the number of vegetable farms in the last five years alone. In addition, the number of square feet under protection for total greenhouse vegetables and fresh cut herbs has also more than doubled in the last five years to over 180,000 with the majority of this focused on greenhouse tomato production. This suggests that new small farms are on the increase focusing on specialty crop production in our state.

What has been done

Standard tomato varieties, advanced breeding lines and germplasm were put into a bato bucket hydroponic system following marker assisted selection for the late blight genes, Ph3 and Ph2. Plants were also assessed for plant growth/habit and organoleptic traits. Seed was collected off superior lines. Plants from the crosses between lines with superior taste qualities and lines that should be homozygous for the late blight resistance gene, Ph3, were evaluated for plant growth and taste and seed to produce F2 populations were obtained. Sequencing of the amplicons derived from these markers were analyzed for the set of varieties and lines available to assist in identifying better markers to use for marker assisted selection. A collaboration with an organic chemist began this year, to create single types of acylsugar for testing on plants with beneficials ("Synthesis of Selective Esterified Monosaccharides"). Currently he is working with an undergraduate student to produce enough for testing.

Results

Data has been collected and is currently being analyzed.

4. Associated Knowledge Areas

KA Code	Knowledge Area
202	Plant Genetic Resources

Outcome #5

1. Outcome Measures

Volunteers will exhibit increased knowledge of providing age-appropriate horticulture and agriculture programs to youth.

2. Associated Institution Types

- 1890 Extension

3a. Outcome Type:

Change in Knowledge Outcome Measure

3b. Quantitative Outcome

Year	Actual
2013	0

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

As focus turns towards local foods and urban agricultural efforts, it has become even more important to provide information to adults on how to engage youth on these topics. Youth in both rural and urban areas of WV have shown interest in growing their own fruits and vegetables for consumption at home or at school. Providing trainings to increase the knowledge base of adults on horticultural and agricultural topics geared toward the elementary to middle school age groups has provided the ability to transfer this information from one generation to the next. Through the National Junior Master Gardener Program, West Virginia State University serves as the State Coordinator of the West Virginia based program conducting presentations and trainings on the program to meet these needs within the state. WV State University Extension Service has also developed an urban youth garden program entitled SCRATCH to serve as a pilot program and illustrate how the Junior Master Gardener Program can be used in conjunction with after school program efforts.

What has been done

Presentations were conducted on seven different occasions around the state to increase the awareness of the Junior Master Gardener Program. Three Junior Master Gardener Trainings were conducted at 4 hours each and trained the participants on the program through conducting hands-on activities from the curriculum. In order to increase program exposure, a Junior Master Gardener Program Interactive Display was set up at two events within the state where youth are able to come through and interact in the exhibit and get a feel for the programmatic efforts. It is also a way for parents and teachers to become engaged in the program concept. Through the pilot Junior Master Gardener based SCRATCH Program, youth interactions occur at three afterschool sites weekly while production gardens are built and maintained by the program youth. These sites serve as a demonstration of what can be created in an urban setting. Three additional youth based gardens have been created across the state to also serve as demonstrations for garden creation.

Results

Presentations were attended by 104 adults interested in youth gardening opportunities, while an additional 43 participants attended scheduled half day trainings to increase their knowledge of program delivery and activities. Over 300 youth and countless parents engaged with the JMG Interactive displays set up on two occasions, once on the campus of WVSU during Homecoming and the other in McDowell County during a Healthy Families Event.

Three demonstration youth gardens were built in conjunction with grant funding and community partners. These garden themes were a Pizza Garden, Tops and Bottoms Literature Garden and Alice and Wonderland Garden. Combined these gardens directly impacted 85 youth and indirectly impacted hundreds. Finally the Scratch Project engages youth on a weekly basis and has three functional garden spaces that are worked by at least 40 youth on a regular basis. The program is also using evaluation measures such as a Fruit and Vegetable ID and Preference Questionnaire to determine a change in behavior of the youth. These results have proved that even our youngest participants are starting to increase their baseline levels of knowledge. Over 450 volunteer hours were logged over the year by students from Marshall University in conjunction with the SCRATCH Project site interactions.

4. Associated Knowledge Areas

KA Code	Knowledge Area
102	Soil, Plant, Water, Nutrient Relationships
111	Conservation and Efficient Use of Water
206	Basic Plant Biology
403	Waste Disposal, Recycling, and Reuse
721	Insects and Other Pests Affecting Humans
806	Youth Development
902	Administration of Projects and Programs
903	Communication, Education, and Information Delivery

Outcome #6

1. Outcome Measures

Extension clientele will implement best practices in agriculture and natural resources based on research-based knowledge.

2. Associated Institution Types

- 1890 Extension
- 1890 Research

3a. Outcome Type:

Change in Knowledge Outcome Measure

3b. Quantitative Outcome

Year	Actual
2013	370

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

As a change occurs in the realm of agricultural production, a focus on sustainable agricultural production has become more desirable. Based on this demand, Extension based agricultural program efforts out of WVSU have focused on implementing workshops to illustrate best management practices in agriculture and natural resources to extend the knowledge of the University out to the greater community. Workshops, garden builds, tours and presentations have been delivered on numerous topics to help ensure that the general public is well educated on these topics.

What has been done

Workshops were delivered on the topics of mushroom production, cold frame construction, rain barrels, hydroponic/aeroponic production, community and adaptive garden creation, pesticide application and small fruit production around the state. Community, youth and adaptive gardens were built in collaboration with program partners to provide an outlet for healthy food production. Tours were conducted of garden sites and area vineyards for those interested. Presentations at conferences and at local meetings were given about program offerings. Articles were written and video outreach via YouTube created.

Results

Thirty-three workshops were delivered on the topics of mushroom production, cold frame construction, rain barrels, hydroponic/aeroponic production, community and adaptive garden creation and pesticide application to 428 participants around the state. Community and adaptive gardens were built and assisted in five locations around the state involving 80 participants. Tours of local garden sites and vineyards were offered and attended by over 50 people increasing the visibility of our program outreach efforts. Presentations on our community garden programs and other program efforts were delivered on several occasions to audiences totaling over 100 people. Articles were written and distributed via the university magazines as well as statewide media sources to reach hundreds of residents, while a You Tube video on Mushroom Log Production was developed and posted receiving 121 views to date.

4. Associated Knowledge Areas

KA Code	Knowledge Area
101	Appraisal of Soil Resources
102	Soil, Plant, Water, Nutrient Relationships
111	Conservation and Efficient Use of Water
131	Alternative Uses of Land
204	Plant Product Quality and Utility (Preharvest)
205	Plant Management Systems
206	Basic Plant Biology
403	Waste Disposal, Recycling, and Reuse

- 405 Drainage and Irrigation Systems and Facilities
- 721 Insects and Other Pests Affecting Humans
- 902 Administration of Projects and Programs
- 903 Communication, Education, and Information Delivery

Outcome #7

1. Outcome Measures

Farmers/growers will utilize best practices with alternative agricultural enterprises to diversify their income portfolio.

Not Reporting on this Outcome Measure

Outcome #8

1. Outcome Measures

Through the Agritourism initiative participants will create new or develop existing enterprises to increase their sustainability.

2. Associated Institution Types

- 1890 Extension

3a. Outcome Type:

Change in Knowledge Outcome Measure

3b. Quantitative Outcome

Year	Actual
2013	0

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

As tourism in WV has an increasing push toward the natural beauty of the state, it is only natural that our agricultural production sector takes advantage of this as well to move more towards the agritourism side of the industry. Through the development of niche markets, unique production methodology as well as unique marketing strategies the potential for expansion is incalculable.

What has been done

Workshops were delivered on the topics of specialty crop production of oyster, chicken of the woods and shitake mushroom and hydroponic/aeronic production technologies. Grants were also written to increase the education on specialty mushroom production around the state through development of urban and rural demonstration sites. Additional grants were submitted to conduct applied research on the potential for hops production in the state as a viable agritourism industry in conjunction with local brewery operations. Tours were also taken to local vineyards and

successful aeroponic production ranges in surrounding states. Meetings were conducted to discuss the potential for production expansion on to abandoned mine lands sites as well as with industry professional to illustrate the potential for growth of the agritourism industry in the state.

Results

17 workshops were delivered on the topics specialty crop production of oyster, chicken of the woods and shitake mushroom and hydroponic/aeroponic production technologies to 250 participants around the state. You Tube video on Mushroom Log Production was developed and posted receiving 121 views to date, to help increase the educational outreach on this innovative growing method. Grant proposals on the side of both specialty mushroom production and hops production trials were both funded at \$13,500 and \$22,500 respectively. A vineyard tour was also conducted for participants of last year's Small Fruit Production Workshop Series after interest was established in visiting a local vineyard that is activity producing for their own wine production purposes and of the 21 participants many showed interest in increasing their production towards the goal of competing with local markets on their own small scale wine production. Tours to a successful aeroponic production range in Virginia was attended by 10 individuals from WVSU Extension, WVU Extension and the WV Department of Agriculture. Additional meetings were held with local Rural Economic Development Authorities on the potential of agricultural expansion to these sites for agritourism opportunities.

4. Associated Knowledge Areas

KA Code	Knowledge Area
111	Conservation and Efficient Use of Water
131	Alternative Uses of Land
403	Waste Disposal, Recycling, and Reuse
902	Administration of Projects and Programs
903	Communication, Education, and Information Delivery

V(H). Planned Program (External Factors)

External factors which affected outcomes

- Natural Disasters (drought, weather extremes, etc.)
- Economy
- Appropriations changes
- Public Policy changes
- Populations changes (immigration, new cultural groupings, etc.)

Brief Explanation

Weather continued to affect the outcomes of our program efforts due to the nature of horticulture and gardening. Workshops and training all were delayed or cancelled throughout the year due to weather.

Changes in site locations and scheduling issues also came in to play. Budget cuts and delays affected many projects.

Finally, changes in staff and personnel has been one of the biggest hurdles in the past year, working to fulfill the same work load requirements with less staff in place.

V(I). Planned Program (Evaluation Studies)

Evaluation Results

Of the 43 participants of the half day JMG Trainings, 100% illustrated an increase in knowledge about the program and their ability to deliver the activities to youth. For the SCRATCH Project in general, fruits are easier for children to recognize than vegetables, and they prefer fruits to vegetables. Many items are ones that children recognize but cannot name. When children are unable to name the item, they are less likely to have ever tasted the item and less likely to report liking it. These results may pave the way for a fruits and vegetables identification and preference test that others can use. Preliminary data are being presented at the Midwestern Psychological Association meeting in May, 2014

Key Items of Evaluation

Of the 43 participants of the half day JMG Trainings, 100% illustrated an increase in knowledge about the program and their ability to deliver the activities to youth. The mushroom production workshop evaluations illustrated of the 160 participants there was an average of 86% increase of knowledge about the topic. The cold frame production workshop evaluations illustrated of the 41 participants there was an average of 81% increase of knowledge. The Community and Adaptive gardening workshops targeted several topics but overall evaluations illustrated of the 112 participants there was an average of 85% increase of knowledge about the various topics covered. The rain barrel production workshops were attended by 15 participants who all indicated a 100% increase in knowledge of rain barrel construction and utilization. Hydroponic and aeroponic production workshops were attended by 90 participants and also indicated a 100% increase in knowledge on the topic. Pesticide workshop applicants were tested for certification and all illustrated an increase in knowledge from pre and posttest measures given through the Department of Agriculture. Garden builds at Carroll Terrace consistently produce over 2000lbs of produce that goes back to the 40 participants at the low income garden site, allowing them to not choose between eating or purchasing their medications. At the new Adaptive Garden at the Five Loaves and Two Fishes Food Bank in McDowell County, over 200lbs of produce was grown this first year going directly back for distribution and feeding the hungry in the area.

V(A). Planned Program (Summary)

Program # 2

1. Name of the Planned Program

Climate Change

Reporting on this Program

V(B). Program Knowledge Area(s)

1. Program Knowledge Areas and Percentage

KA Code	Knowledge Area	%1862 Extension	%1890 Extension	%1862 Research	%1890 Research
101	Appraisal of Soil Resources		10%		10%
102	Soil, Plant, Water, Nutrient Relationships		10%		5%
111	Conservation and Efficient Use of Water		10%		0%
124	Urban Forestry		10%		0%
131	Alternative Uses of Land		10%		5%
211	Insects, Mites, and Other Arthropods Affecting Plants		10%		35%
212	Pathogens and Nematodes Affecting Plants		10%		25%
403	Waste Disposal, Recycling, and Reuse		10%		20%
721	Insects and Other Pests Affecting Humans		10%		0%
902	Administration of Projects and Programs		5%		0%
903	Communication, Education, and Information Delivery		5%		0%
	Total		100%		100%

V(C). Planned Program (Inputs)

1. Actual amount of FTE/SYs expended this Program

Year: 2013	Extension		Research	
	1862	1890	1862	1890
Plan	0.0	1.5	0.0	0.5
Actual Paid Professional	0.0	0.0	0.0	1.5
Actual Volunteer	0.0	0.0	0.0	0.0

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

Extension		Research	
Smith-Lever 3b & 3c	1890 Extension	Hatch	Evans-Allen
0	0	0	216850
1862 Matching	1890 Matching	1862 Matching	1890 Matching
0	0	0	222352
1862 All Other	1890 All Other	1862 All Other	1890 All Other
0	0	0	68887

V(D). Planned Program (Activity)

1. Brief description of the Activity

Educational classes and workshops were developed and delivered to increase knowledge of alternative agricultural practices with a focus on environmental consciousness for small scale producers, as well as production methodologies, crop selection, and crop maintenance.

2. Brief description of the target audience

Targeted audience will include: homeowners, small-farm operators, volunteer organizations, various city, county and municipalities, state government, underserved and minority farmers/landowners, WVDA staff, USDA staff and other agricultural and natural resource focused agencies, undergraduate and graduate students, MS4's municipalities, contractors and landscape architects and designers, private land owners.

3. How was eXtension used?

eXtension was not used in this program

V(E). Planned Program (Outputs)

1. Standard output measures

2013	Direct Contacts Adults	Indirect Contacts Adults	Direct Contacts Youth	Indirect Contacts Youth
Actual	635	2641	15	150

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

Patent Applications Submitted

Year: 2013

Actual: 0

Patents listed

3. Publications (Standard General Output Measure)

Number of Peer Reviewed Publications

2013	Extension	Research	Total
Actual	0	2	0

V(F). State Defined Outputs

Output Target

Output #1

Output Measure

- Workshops on new varieties and growing techniques for small farmers to adapt to changing environmental conditions

Year	Actual
2013	33

Output #2

Output Measure

- Workshops targeted at alternative agriculture endeavors will be held in targeted counties.

Year	Actual
2013	36

Output #3

Output Measure

- WV SU Extension staff will generate media articles and stories related to alternative agriculture.

Year	Actual
2013	6

Output #4

Output Measure

- Urban clientele, municipalities and government organizations will receive information on the Urban Forestry initiative.

Year	Actual
2013	200

V(G). State Defined Outcomes

V. State Defined Outcomes Table of Content

O. No.	OUTCOME NAME
1	Number of small farmers adopting new varieties and growing techniques to adapt to changing environmental conditions
2	Extension clientele will implement best practices in agriculture and natural resources based on research-based knowledge.
3	Farmers/growers will utilize best practices with alternative agricultural enterprizes to diversify their income portfolio.
4	Develop soil rating for soil-based runoff mitigation practices.
5	Improve value and use of biochar and other byproducts as soil amendments.

Outcome #1

1. Outcome Measures

Number of small farmers adopting new varieties and growing techniques to adapt to changing environmental conditions

2. Associated Institution Types

- 1890 Extension
- 1890 Research

3a. Outcome Type:

Change in Action Outcome Measure

3b. Quantitative Outcome

Year	Actual
2013	0

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

Small farms find it hard to remain competitive using traditional crop production methods that are not adaptive to our farms. In addition competing with existing stream of produce from out of state is difficult if not impossible. Thus, finding alternative approaches to growing crops or new crops/varieties not currently grown on a large-scale commercial basis in the US, products that do not ship well or utilize the interest in local foods can provide a greater return on small farm investment compared to traditional products and practices.

What has been done

Field trials with jalapeno and cayenne peppers were undertaken in the Summer of 2013. Included in the trial was an early, dwarf cayenne pepper which had been selected in prior years as a possible release. Fruit number and weight of marketable and cull fruit was collected and is currently being analyzed.

A variety trial of Asian Greens was conducted with Dr. Lewis Jett of WVU in the Fall of 2013. Data was collected on size and weight of the plants from this replicated trial. Data is currently be analyzed with results to be presented at regional conferences and local growers meetings.

A second experiment creating grafted tomato plants for small farm growers with high tunnels was undertaken in the spring of 2013. Grafted plants with heirloom scions and resistant rootstocks were created with over a 95% success rate in grafting. Fruit number and weight was collected by the growers and we are awaiting the information.

Results

Data is currently being collected and analyzed. At least one grower lost her plants prior to transplant to unexpected cold weather.

4. Associated Knowledge Areas

KA Code	Knowledge Area
211	Insects, Mites, and Other Arthropods Affecting Plants
212	Pathogens and Nematodes Affecting Plants

Outcome #2

1. Outcome Measures

Extension clientele will implement best practices in agriculture and natural resources based on research-based knowledge.

2. Associated Institution Types

- 1890 Extension
- 1890 Research

3a. Outcome Type:

Change in Knowledge Outcome Measure

3b. Quantitative Outcome

Year	Actual
2013	0

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

As a change occurs in the realm of agricultural production, a focus on sustainable agricultural production has become more desirable. Based on this demand, Extension based agricultural program efforts out of WVSU have focused on implementing workshops to illustrate best management practices in agriculture and natural resources to extend the knowledge of the University out to the greater community. Workshops, garden builds, tours and presentations have been delivered on numerous topics to help ensure that the general public is well educated on these topics.

What has been done

Workshops were delivered on the topics of mushroom production, cold frame construction, rain barrels, hydroponic/aeroponic production, community and adaptive garden creation, pesticide application and small fruit production around the state. Community, youth and adaptive gardens were built in collaboration with program partners to provide an outlet for healthy food production. Tours were conducted of garden sites and area vineyards for those interested. Presentations at conferences and at local meetings were given about program offerings. Articles were written and video outreach via YouTube created.

Results

Thirty-three workshops were delivered on the topics of mushroom production, cold frame construction, rain barrels, hydroponic/aeroponic production, community and adaptive garden creation and pesticide application to 428 participants around the state. Community and adaptive gardens were built and assisted in five locations around the state involving 80 participants. Tours of local garden sites and vineyards were offered and attended by over 50 people increasing the visibility of our program outreach efforts. Presentations on our community garden programs and other program efforts were delivered on several occasions to audiences totaling over 100 people. Articles were written and distributed via the university magazines as well as statewide media sources to reach hundreds of residents, while a You Tube video on Mushroom Log Production was developed and posted receiving 121 views to date.

4. Associated Knowledge Areas

KA Code	Knowledge Area
101	Appraisal of Soil Resources
102	Soil, Plant, Water, Nutrient Relationships
111	Conservation and Efficient Use of Water
124	Urban Forestry
131	Alternative Uses of Land
211	Insects, Mites, and Other Arthropods Affecting Plants
212	Pathogens and Nematodes Affecting Plants
403	Waste Disposal, Recycling, and Reuse
721	Insects and Other Pests Affecting Humans
902	Administration of Projects and Programs
903	Communication, Education, and Information Delivery

Outcome #3

1. Outcome Measures

Farmers/growers will utilize best practices with alternative agricultural enterprises to diversify their income portfolio.

2. Associated Institution Types

- 1890 Extension

3a. Outcome Type:

Change in Knowledge Outcome Measure

3b. Quantitative Outcome

Year	Actual
2013	0

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

{No Data Entered}

What has been done

{No Data Entered}

Results

{No Data Entered}

4. Associated Knowledge Areas

KA Code	Knowledge Area
102	Soil, Plant, Water, Nutrient Relationships
111	Conservation and Efficient Use of Water
124	Urban Forestry
131	Alternative Uses of Land
211	Insects, Mites, and Other Arthropods Affecting Plants
403	Waste Disposal, Recycling, and Reuse
721	Insects and Other Pests Affecting Humans
902	Administration of Projects and Programs
903	Communication, Education, and Information Delivery

Outcome #4

1. Outcome Measures

Develop soil rating for soil-based runoff mitigation practices.

Not Reporting on this Outcome Measure

Outcome #5

1. Outcome Measures

Improve value and use of biochar and other byproducts as soil amendments.

2. Associated Institution Types

- 1890 Research

3a. Outcome Type:

Change in Knowledge Outcome Measure

3b. Quantitative Outcome

Year	Actual
2013	0

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

Appalachian regional soils are highly acidic and infertile. Mineral exploration, such as coal mining, and the earth-moving operations associated with such land uses further exacerbate the already fragile fertility of these soils. Using organic byproducts, biochar (byproduct of thermoconversion of cellulosic biomass), and other byproducts have the potential to ameliorate soil properties and environmental services. Improving land management practices of disturbed lands can increase soil fertility and productivity, contributing to local agronomic output, food security, and economy.

What has been done

Biochar from fast pyrolysis of southern pine biomass into bio-oil operation was acquired from a commercial partner. Chemical and physical characterization was successfully concluded. A study was initiated to improve biochar agronomic value by using it as a sorbent for excess nutrients from dairy solid waste products and mix with quarry fines from different geologic formations. Organic and inorganic waste materials were analyzed and selected properties were determined. Protocols for dairy waste extraction were developed and their ability to extract nutrients from the waste solids was evaluated.

Results

Procedures and protocols for sorbing the solids extracts onto biochar were developed and assessed. Greenhouse studies are currently implemented in studying effect of biochar and BiocharG on soil properties and plant performances.

4. Associated Knowledge Areas

KA Code	Knowledge Area
101	Appraisal of Soil Resources
102	Soil, Plant, Water, Nutrient Relationships
403	Waste Disposal, Recycling, and Reuse

V(H). Planned Program (External Factors)

External factors which affected outcomes

- Natural Disasters (drought, weather extremes, etc.)
- Economy
- Appropriations changes
- Public Policy changes
- Government Regulations
- Populations changes (immigration, new cultural groupings, etc.)

Brief Explanation

{No Data Entered}

V(I). Planned Program (Evaluation Studies)

Evaluation Results

{No Data Entered}

Key Items of Evaluation

{No Data Entered}

V(A). Planned Program (Summary)

Program # 3

1. Name of the Planned Program

Sustainable Energy

Reporting on this Program

V(B). Program Knowledge Area(s)

1. Program Knowledge Areas and Percentage

KA Code	Knowledge Area	%1862 Extension	%1890 Extension	%1862 Research	%1890 Research
101	Appraisal of Soil Resources		10%		10%
102	Soil, Plant, Water, Nutrient Relationships		10%		10%
123	Management and Sustainability of Forest Resources		10%		10%
201	Plant Genome, Genetics, and Genetic Mechanisms		10%		20%
203	Plant Biological Efficiency and Abiotic Stresses Affecting Plants		10%		10%
403	Waste Disposal, Recycling, and Reuse		25%		20%
511	New and Improved Non-Food Products and Processes		25%		20%
	Total		100%		100%

V(C). Planned Program (Inputs)

1. Actual amount of FTE/SYs expended this Program

Year: 2013	Extension		Research	
	1862	1890	1862	1890
Plan	0.0	1.0	0.0	7.3
Actual Paid Professional	0.0	0.0	0.0	2.5
Actual Volunteer	0.0	0.0	0.0	0.0

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

Extension		Research	
Smith-Lever 3b & 3c	1890 Extension	Hatch	Evans-Allen
0	0	0	361417
1862 Matching	1890 Matching	1862 Matching	1890 Matching
0	0	0	255775
1862 All Other	1890 All Other	1862 All Other	1890 All Other
0	0	0	0

V(D). Planned Program (Activity)

1. Brief description of the Activity

During the past year, the primary focus of our research was to understand bacterial metabolism in a unique thermophilic anaerobic digester that utilizes poultry litter as substrate. We used both modeling and experimentation to evaluate the metabolic parameters that most affect the efficiency of this process. A model known as ADM1 has been used to explain the anaerobic digestion process. However, this model is complicated and contains 110 parameters. To simply and improve the model, we first used Global Sensitivity Analysis (GSA) to identify those kinetic parameters that have major influence on the levels of acetate, propionate and methane, which are key metabolites. GSA showed that K_m was more sensitive than K_S for explaining the kinetics of these metabolites. We then experimentally tested the production and consumption of fatty acid intermediates by this digester microbiome. Short chain fatty acids are the primary metabolite intermediates produced during primary fermentation in anaerobic digestion, and are indicators of the stability of the system. We also experimentally measured fatty acid kinetics using replicate microcosms derived from the thermophilic digester and gas chromatography for fatty acids analysis. The kinetics of acetate, propionate, butyrate, isobutyrate and valerate were followed. Modeling of fatty acid kinetics was done with the ADM1 model. The metabolism of fatty acids was also studied in a pilot scale thermophilic plugflow digester. In addition, microbial diversity analysis of a circumneutral Appalachian river in West Virginia was continued.

2. Brief description of the target audience

Digester manufacturers and users, poultry farmers, other agricultural waste producers, environmentally concerned citizens, undergraduate and graduate students, engineers and scientists who study bioreactors and anaerobic microbial processes. Mine operators, mine reclamation contractors, land owners

3. How was eXtension used?

eXtension was not used in this program

V(E). Planned Program (Outputs)

1. Standard output measures

2013	Direct Contacts Adults	Indirect Contacts Adults	Direct Contacts Youth	Indirect Contacts Youth
Actual	7	0	0	0

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

Patent Applications Submitted

Year: 2013

Actual: 0

Patents listed

3. Publications (Standard General Output Measure)

Number of Peer Reviewed Publications

2013	Extension	Research	Total
Actual	0	2	0

V(F). State Defined Outputs

Output Target

Output #1

Output Measure

- Train students in digester operation, biochemical analysis, microbial analysis [Huber]

Year	Actual
2013	9

Output #2

Output Measure

- Improve the operation of thermophilic poultrywaste digesters. [Huber]

Year	Actual
2013	0

Output #3

Output Measure

- Add an extension component to the digester program
Not reporting on this Output for this Annual Report

Output #4

Output Measure

- Evaluate the feasibility of adopting anaerobic digestion on poultry farms in WV through extension outreach to farmers [Huber]
Not reporting on this Output for this Annual Report

Output #5

Output Measure

- Develop novel technique for soil remediation on reclaimed mine lands. [Hass]
Not reporting on this Output for this Annual Report

V(G). State Defined Outcomes

V. State Defined Outcomes Table of Content

O. No.	OUTCOME NAME
1	Improve the operational parameters that have beensed to contreermophilic poultry waste digester.
2	New knowledge concerning how microbial diversity gives rise to anaerobic microbial energy conversion and anaerobic digestion.
3	Increase awareness of soil remediation technology among mining operators and agencies.

Outcome #1

1. Outcome Measures

Improve the operational parameters ththat have beensed to contreermophilic poultry waste digester.

2. Associated Institution Types

- 1890 Research

3a. Outcome Type:

Change in Action Outcome Measure

3b. Quantitative Outcome

Year	Actual
2013	0

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

{No Data Entered}

What has been done

{No Data Entered}

Results

{No Data Entered}

4. Associated Knowledge Areas

KA Code	Knowledge Area
403	Waste Disposal, Recycling, and Reuse

Outcome #2

1. Outcome Measures

New knowledge concerning how microbial diversity gives rise to anaerobic microbial energy conversion and anaerobic digestion.

2. Associated Institution Types

- 1890 Research

3a. Outcome Type:

Change in Knowledge Outcome Measure

3b. Quantitative Outcome

Year	Actual
2013	0

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

Microbial diversity is the foundation of agricultural productivity, biotechnology, and environmental sustainability. The microbial processes that undergird these important resources depend on communities of diverse microorganisms. These processes have been poorly understood but new technologies are now enabling rapid progress toward understanding and manipulating microbial diversity. This research will apply genomics technology for understanding microbial community-level processes in three environments that are important to biotechnology and environmental sustainability.

What has been done

During the past year, the primary focus of our research was to understand bacterial metabolism in a unique thermophilic anaerobic digester that utilizes poultry litter as substrate. We used both modeling and experimentation to evaluate the metabolic parameters that most affect the efficiency of this process. A model known as ADM1 has been used to explain the anaerobic digestion process. However, this model is complicated and contains 110 parameters. To simply and improve the model, we first used Global Sensitivity Analysis (GSA) to identify those kinetic parameters that have major influence on the levels of acetate, propionate and methane, which are key metabolites.

Results

GSA showed that K_m was more sensitive than K_S for explaining the kinetics of these metabolites. We then experimentally tested the production and consumption of fatty acid intermediates by this digester microbiome. Short chain fatty acids are the primary metabolite intermediates produced during primary fermentation in anaerobic digestion, and are indicators of the stability of the system. We also experimentally measured fatty acid kinetics using replicate microcosms derived from the thermophilic digester and gas chromatography for fatty acids analysis. The kinetics of acetate, propionate, butyrate, isobutyrate and valerate were followed. Modeling of fatty acid kinetics was done with the ADM1 model. The metabolism of fatty acids was also studied in a pilot scale thermophilic plugflow digester. In addition, microbial diversity analysis of a circumneutral Appalachian river in West Virginia was continued.

4. Associated Knowledge Areas

KA Code	Knowledge Area
403	Waste Disposal, Recycling, and Reuse

Outcome #3

1. Outcome Measures

Increase awareness of soil remediation technology among mining operators and agencies.

2. Associated Institution Types

- 1890 Research

3a. Outcome Type:

Change in Knowledge Outcome Measure

3b. Quantitative Outcome

Year	Actual
2013	0

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

{No Data Entered}

What has been done

{No Data Entered}

Results

{No Data Entered}

4. Associated Knowledge Areas

KA Code	Knowledge Area
403	Waste Disposal, Recycling, and Reuse

V(H). Planned Program (External Factors)

External factors which affected outcomes

- Economy
- Appropriations changes

Brief Explanation

{No Data Entered}

V(I). Planned Program (Evaluation Studies)

Evaluation Results

{No Data Entered}

Key Items of Evaluation

{No Data Entered}

V(A). Planned Program (Summary)

Program # 4

1. Name of the Planned Program

Childhood Obesity

Reporting on this Program

V(B). Program Knowledge Area(s)

1. Program Knowledge Areas and Percentage

KA Code	Knowledge Area	%1862 Extension	%1890 Extension	%1862 Research	%1890 Research
701	Nutrient Composition of Food		30%		0%
724	Healthy Lifestyle		20%		0%
802	Human Development and Family Well-Being		30%		0%
806	Youth Development		20%		0%
	Total		100%		0%

V(C). Planned Program (Inputs)

1. Actual amount of FTE/SYs expended this Program

Year: 2013	Extension		Research	
	1862	1890	1862	1890
Plan	0.0	6.0	0.0	1.0
Actual Paid Professional	0.0	2.0	0.0	0.0
Actual Volunteer	0.0	0.0	0.0	0.0

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

Extension		Research	
Smith-Lever 3b & 3c	1890 Extension	Hatch	Evans-Allen
0	111362	0	0
1862 Matching	1890 Matching	1862 Matching	1890 Matching
0	94050	0	0
1862 All Other	1890 All Other	1862 All Other	1890 All Other
0	0	0	0

V(D). Planned Program (Activity)

1. Brief description of the Activity

The steering committee members (each is in charge of one of the KEYS) are working on projects at three specific champion sites that are incorporating all of the keys at their sites.

KEYS is an acronym that represents the four keys necessary for "Unlocking" the barriers/doors that children and families face with adhering to a nutritious healthful diet and engaging in regular activity (K-Knowledge, E-Eating Healthy, Y-Youth Being Active, S-Safety and Empowerment).

The Key to Knowledge will emphasize the importance of eating adequate fruits and vegetables, limiting screen time, engaging in regular physical activity, and eliminating sugar-sweetened beverages through the 5-2-1-0 social marketing campaign.

The Key to Eating Healthy will engage community members in gardening projects, and help day-cares and after-school programs provide nutritious snacks and beverages by providing policy development training.

The Key to Youth Being Active will help revitalize community parks and greenspace and conduct walkability and bikeability audits to ensure safe access to and from the parks.

The Key to Safety and Empowerment will address residents' concerns and enlist them in efforts to help make their communities safer places to walk and play outdoors through development of resident youth council. Joint use agreements between communities and schools will also be established so residents can utilize these facilities outside of normal operational hours.

The Fast Track program will address key issues in childhood obesity such as lack of knowledge, interest, and skill to incorporate health and nutrition practices in daily life activity.

Fast Track participants will learn about kitchen and food safety, food preparation, healthy food selection, economical ways to practice healthy and nutrition, and engage in physical activities. Community organizations such as local recreation centers will assist in the engagement of physical activity. Parental involvement will be encouraged and requested throughout the program in order to educate the caregivers on the issues being addressed with their youth during the implementation of the program.

2. Brief description of the target audience

The target audience for the first year and a half of the grant is the City of Charleston where there is a higher minority population (17% vs 3% for the state), food deserts, higher crime rates, extreme poverty, and higher rates of childhood obesity.

The target audience for the Fast Track program is underrepresented middle school aged youth in the Charleston area who display an interest in any component of the program.

3. How was eXtension used?

eXtension was not used in this program

V(E). Planned Program (Outputs)

1. Standard output measures

2013	Direct Contacts Adults	Indirect Contacts Adults	Direct Contacts Youth	Indirect Contacts Youth
Actual	6	9	94	141

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

Year: 2013
 Actual: 0

Patents listed

3. Publications (Standard General Output Measure)

Number of Peer Reviewed Publications

2013	Extension	Research	Total
Actual	0	0	0

V(F). State Defined Outputs

Output Target

Output #1

Output Measure

- Number of youth will participate in various workshops.

Year	Actual
2013	94

Output #2

Output Measure

- News articles will be generated around childhood obesity and specific to these efforts.

Year	Actual
2013	0

Output #3

Output Measure

- Number of adults will participate in educational sessions.

Year	Actual
------	--------

2013

6

Output #4

Output Measure

- New shopping venues will be available in food desserts.
Not reporting on this Output for this Annual Report

Output #5

Output Measure

- Safe new green spaces will be created to encourage community active lifestyle activities.
Not reporting on this Output for this Annual Report

Output #6

Output Measure

- Number of youth will participate in the Fast Track health and nutrition program.

Year	Actual
2013	94

Output #7

Output Measure

- Middle School youth in the Fast Track program will demonstrate improved safety and food preparation skills.

Year	Actual
2013	94

Output #8

Output Measure

- Fast Track participants will report an increased knowledge and practice of healthier food consumption.

Year	Actual
2013	94

V(G). State Defined Outcomes

V. State Defined Outcomes Table of Content

O. No.	OUTCOME NAME
1	Youth and Families will increase knowledge and awareness of nutrition
2	Youth and Families will increase knowledge of physical fitness activities
3	Youth, Families and Communities will increase social competency through community sustainable gardening
4	Youth Families and communities will increase demand for healthy food options in their communities
5	Youth will make positive health choices including selection of healthy foods and increasing active lifestyle activities
6	Families will make positive health choices including selection of healthy foods and increasing active lifestyle activities

Outcome #1

1. Outcome Measures

Youth and Families will increase knowledge and awareness of nutrition

2. Associated Institution Types

- 1890 Extension

3a. Outcome Type:

Change in Knowledge Outcome Measure

3b. Quantitative Outcome

Year	Actual
2013	0

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

The CDC (2010) cites the need for better youth health education to address problems related to childhood obesity in West Virginia. It is also a priority of the programs to educate the parents and caregivers of youth in order to assist them in making healthier decisions for our children.

What has been done

The Fast Track program provided lessons on key issues in childhood obesity such as lack of knowledge, interest, and skill to incorporate health and nutrition practices in daily life activity. Fast Track participants learned about kitchen and food safety, food preparation, healthy food selection, economical ways to practice healthy and nutrition, and engaged in physical activities. Community organizations such as local recreation centers assisted in the engagement of physical activity. Parental involvement was encouraged and requested throughout the program in order to educate the caregivers on the issues being addressed with their youth during the implementation of the program.

Results

Students have shown an increase in healthy eating and snacking. They are now more likely to incorporate fresh fruits and vegetables into their diets and meal planning with their families. Students have also shown they are making better choices in choosing drinks that accompany their meals. They are choosing milk, water and fruit juices instead of sodas. Snacking on items like potato chips and candy is now giving way to fruits and vegetables.

4. Associated Knowledge Areas

KA Code	Knowledge Area
701	Nutrient Composition of Food
724	Healthy Lifestyle

802 Human Development and Family Well-Being

Outcome #2

1. Outcome Measures

Youth and Families will increase knowledge of physical fitness activities

2. Associated Institution Types

- 1890 Extension

3a. Outcome Type:

Change in Knowledge Outcome Measure

3b. Quantitative Outcome

Year	Actual
2013	0

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

The CDC (2010) cites the need for better youth health education to address problems related to childhood obesity in West Virginia. It is also a priority of the programs to educate the parents and caregivers of youth in order to assist them in making healthier decisions for our children. Furthermore, the physical education program in schools has decreased in frequency and entertainment that encourages little mobility, which opens the door to more youth leading increased sedentary lifestyles.

What has been done

The Children Youth and Families at Risk funded WVSU Fast Track program aimed to improve awareness in these areas, reducing the rate of obesity amongst our youth. Middle school youth in the Charleston area were targeted for this program. Afterschool and summer day camps were provided. As an afterschool setting, six week 2-hour a day sessions were offered to the schools and neighborhood center. Two one week day camps, 7 hours a day, were offered during the summer. Lessons on food safety, food preparation, physical fitness, and financial literacy were offered. As youth participated in the program, they were provided examples of healthier, yet cost effective snacks, breakfast, lunch, and dinner options.

Results

Our results show that students spare time sedentary activities, such as video games and watching television, increased to larger episodes of physical activity. Students are now being active for at least one hour a day and burning more calories during that time. We have also seen an increase in the type of physical activities, such as, team sports, walking biking, etc. Along with this, we also see a greater awareness in the students of how important exercise and physical activity is for the body and healthy development.

4. Associated Knowledge Areas

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

Outcome #3

1. Outcome Measures

Youth, Families and Communities will increase social competency through community sustainable gardening

Not Reporting on this Outcome Measure

Outcome #4

1. Outcome Measures

Youth Families and communities will increase demand for healthy food options in their communities

Not Reporting on this Outcome Measure

Outcome #5

1. Outcome Measures

Youth will make positive health choices including selection of healthy foods and increasing active lifestyle activities

Not Reporting on this Outcome Measure

Outcome #6

1. Outcome Measures

Families will make positive health choices including selection of healthy foods and increasing active lifestyle activities

Not Reporting on this Outcome Measure

V(H). Planned Program (External Factors)

External factors which affected outcomes

- Natural Disasters (drought, weather extremes, etc.)
- Economy
- Appropriations changes

Brief Explanation

School and other site location schedules, weather conditions, changes in economy, appropriations changes all affected the program implementation. It was difficult to keep a consistent schedule due to changes in site location schedules, and funding cuts caused us to change some of the program deliverables.

V(I). Planned Program (Evaluation Studies)

Evaluation Results

The Fast Track program used four evaluation tools as pre and post surveys including the Student Background Questionnaire, Student Survey, 14-Item Resilience Scale (RS-14), and YAR-PET (Youth at Risk - Program Effectiveness Tool). From our pre and post surveys, we found that the Fast Track participants have reported an increased knowledge and interest in consuming healthier foods in home and while dining out, an increase in the amount of physical activity as well as an increase in the belief of the importance of physical activity, a decrease in consumption of drinks high in sugar and high calorie fast food items.

Key Items of Evaluation

V(A). Planned Program (Summary)

Program # 5

1. Name of the Planned Program

Food Safety

Reporting on this Program

V(B). Program Knowledge Area(s)

1. Program Knowledge Areas and Percentage

KA Code	Knowledge Area	%1862 Extension	%1890 Extension	%1862 Research	%1890 Research
703	Nutrition Education and Behavior		25%		0%
724	Healthy Lifestyle		25%		0%
802	Human Development and Family Well-Being		25%		0%
806	Youth Development		25%		0%
	Total		100%		0%

V(C). Planned Program (Inputs)

1. Actual amount of FTE/SYs expended this Program

Year: 2013	Extension		Research	
	1862	1890	1862	1890
Plan	0.0	5.0	0.0	0.0
Actual Paid Professional	0.0	1.2	0.0	0.0
Actual Volunteer	0.0	0.0	0.0	0.0

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

Extension		Research	
Smith-Lever 3b & 3c	1890 Extension	Hatch	Evans-Allen
0	69601	0	0
1862 Matching	1890 Matching	1862 Matching	1890 Matching
0	58781	0	0
1862 All Other	1890 All Other	1862 All Other	1890 All Other
0	0	0	0

V(D). Planned Program (Activity)

1. Brief description of the Activity

Expanded Food and Nutrition Education Program (EFNEP) -EFNEP is a federally funded educational program designed to assist limited resource children and families with children in improving the total

family's nutritional well-being and health through a series of practical lessons on basic nutrition and healthy lifestyles, resource management, and food safety.

Health Lifestyles Cooking Schools- Diabetes is a chronic health condition that affected 12.3% of West Virginians in 2009. Those afflicted with this disease must consistently focus on controlling blood sugar levels and preventing complications. The WVSU Diabetes Cooking School teaches meal planning and food preparation skills that reduce calories, control carbohydrates, modify fats and increase fiber of familiar food recipes.

Food Preservation-is the process of treating and handling food to stop or slow down Food spoilage, loss of quality, edibility or nutritional value and thus allow for longer food storage. Preservation usually involves preventing the growth of bacteria, fungi(such as yeasts), and other micro-organisms(although some methods work by introducing benign bacteria, or fungi to the food), as well as retarding the oxidation of fats which cause rancidity.

Use the Germ City tunnel to physically show participants the importance of proper and frequent hand washing. Teaching the public through Extension programs the importance of following proper safe food handling practices - cleaning, washing hands; separating foods to avoid cross-contamination; cooking foods to proper internal temperatures to kill bacteria; and store leftovers quickly and properly.

2. Brief description of the target audience

The target audience for the first part of the year was the city of Charleston where there is a higher minority population (11% v. 4% for the state), food deserts, high crime rates, extreme poverty and high rates of childhood obesity. During the second part of the year, WVSU expanded their service location to offer programs in the western region portion of the state in Huntington, WV. There, the EFNEP program provided services to middle school youth and a new staff member was hired to conduct programming targeting adults from young to late adulthood.

3. How was eXtension used?

eXtension was not used in this program

V(E). Planned Program (Outputs)

1. Standard output measures

2013	Direct Contacts Adults	Indirect Contacts Adults	Direct Contacts Youth	Indirect Contacts Youth
Actual	102	249	2101	13245

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

Year: 2013
 Actual: 0

Patents listed

3. Publications (Standard General Output Measure)

Number of Peer Reviewed Publications

2013	Extension	Research	Total
Actual	0	0	0

V(F). State Defined Outputs

Output Target

Output #1

Output Measure

- After completing the healthy lifestyles education workshop, participants will be able to prepare, cook, and store food safely.

Year	Actual
2013	0

Output #2

Output Measure

- Number of participants that report an increased knowledge level about managing blood sugars through diabetes education.

Year	Actual
2013	0

Output #3

Output Measure

- Number of participants report; they had an opportunity to learn effective meal techniques through healthy lifestyles education programs.

Year	Actual
2013	0

Output #4

Output Measure

- Number of individuals will be provided with more tools for making better decisions about the dietary choices through the healthy lifestyles education programs.

Year	Actual
2013	0

Output #5

Output Measure

- Participants 18 years and under or 21 years of age with a disability, will receive one nutritious lunch per day through the Summer Food Service Program. Federal food guidelines will be followed in meal preparation. Appropriate temperature time and preparing of meals will be ensured prior to delivery. Meals will be served in an adequate time frame following delivery. Site staff will ensure that appropriate meal counts are received and ordered daily. Program administrators will conduct site and process training for site supervisors.

Year	Actual
2013	0

Output #6

Output Measure

- Number of participants graduating from EFNEP programming.

Year	Actual
2013	633

Output #7

Output Measure

- After completing the EFNEP program, participants will report having a better understanding of food handling practices.

Year	Actual
2013	633

Output #8

Output Measure

- Participants completing the EFNEP program, will report an increased knowledge about cooking appropriate times and temperatures.

Year	Actual
2013	633

Output #9

Output Measure

- Number of youth participants learned kitchen safety techniques, including using cooking appliances and knives

Year	Actual
-------------	---------------

2013 633

Output #10

Output Measure

- Number of youth participants learned safe practices to prevent food spoilage

Year	Actual
2013	633

Output #11

Output Measure

- Number of youth participants learned safe guidelines to prevent food bourne illness

Year	Actual
2013	633

Output #12

Output Measure

- Number of youth participants learned practices to prevent cross contamination of raw and fresh foods

Year	Actual
2013	633

V(G). State Defined Outcomes

V. State Defined Outcomes Table of Content

O. No.	OUTCOME NAME
1	After completing the healthy lifestyles education workshop, participants will be able to prepare, cook, and store food safely.
2	Individual's participating in diabetes education workshops, will monitor and record blood sugars regularly. This will be indicated through Pre/Post test, to determine that they are keeping adequate account of blood sugar levels.
3	As a result of the healthy lifestyles program; participants will report incorporating at least one effective meal planning technique in their daily lives.
4	After completing the healthy lifestyles programs; participants will report adopting of one or more tools for making better decisions about making dietary choices.
5	Participants engaging in healthy lifestyles programs will report using between one to two new food handling practices.
6	Youth will practice and decimate information about kitchen safety, especially safe operation of stoves, blenders and cooking appliances, and proper handling of knives
7	Youth will practice and decimate information to their families about food storage temperatures to prevent spoilage
8	Youth will practice and decimate information to their families about preventing food bourne illnesses from consumption of uncooked or spoiled food
9	Youth will practice and decimate information to their families about the prevention of cross contamination between raw and fresh food in cooking and during preparation.
10	Youth participating in the SFSP will receive one balanced, nutritionally correct meal per day that is prepared and held at safe temperatures.
11	Site supervisors operating the SFSP; will report having a complete understanding about, appropriate temperture times and prepartion of meals; the adequate time frame for serving meals and appropriate methods for counting, ordering, and storing meals daily. This information will be monitored by Pre/Post testing at the conclusion of the site supervisor training.
12	By attending the EFNEP, participants will be able to choose adequate portion sizes of foods, according to the MyPlate recommendations.
13	By completing EFNEP, participants will be able to explain safe food handling practices.
14	After completeing the EFNEP program, participants will demonstrate their ability to prepare safe, nutritious, and affordable meals.

Outcome #1

1. Outcome Measures

After completing the healthy lifestyles education workshop, participants will be able to prepare, cook, and store food safely.

Not Reporting on this Outcome Measure

Outcome #2

1. Outcome Measures

Individual's participating in diabetes education workshops, will monitor and record blood sugars regularly. This will be indicated through Pre/Post test, to determine that they are keeping adequate account of blood sugar levels.

2. Associated Institution Types

- 1890 Extension

3a. Outcome Type:

Change in Knowledge Outcome Measure

3b. Quantitative Outcome

Year	Actual
2013	18

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

According to the Centers for Disease Control (2014) healthy eating and regular physical activity can prevent injury, disability, and early death from many chronic conditions, including obesity, heart disease, stroke, some cancers, diabetes, depression, and osteoporosis. They also can help people maintain healthy weight. Unfortunately, few Americans make healthy food choices on a regular basis, and many do not get enough physical activity to receive health benefits

The "Healthy Lifestyles Cooking School" programs are designed to educate individuals with diabetes, those who have been diagnosed cardiac health issues, and those with chronic hypertension along with their family members learn about the fundamentals of nutrition; how to prepare foods by reducing carbohydrates, sugar, and salts; and how to be more aware of proper serving sizes.

What has been done

A three week cooking School was held.

A six month follow up to the cooking school was held to conduct another posttest which

determined how the participants had adopted the skills obtain during the cooking school. Demonstrations were conducted to show the methods of food preparation. These demo?s illustrated how to lower or eliminate fats, sodium and carbohydrates from the diet. Conversation and interaction between the participants was encouraged.

Results

Eighteen (18) participants observed each demonstration. All participants sampled each recipe. Each session they were encourage to replicate the recipes for their families. Ninety percent of the participants did replicate indicating that their families enjoyed the healthy recipes.

4. Associated Knowledge Areas

KA Code	Knowledge Area
703	Nutrition Education and Behavior
724	Healthy Lifestyle
802	Human Development and Family Well-Being

Outcome #3

1. Outcome Measures

As a result of the healthy lifestyles program; participants will report incorporating at least one effective meal planning technique in their daily lives.

Not Reporting on this Outcome Measure

Outcome #4

1. Outcome Measures

After completing the healthy lifestyles programs; participants will report adopting of one or more tools for making better decisions about making dietary choices.

Not Reporting on this Outcome Measure

Outcome #5

1. Outcome Measures

Participants engaging in healthy lifestyles programs will report using between one to two new food handling practices.

2. Associated Institution Types

- 1890 Extension

3a. Outcome Type:

Change in Knowledge Outcome Measure

3b. Quantitative Outcome

Year	Actual
2013	8

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

There has been an increase in community, box and backyard gardening. With that has come an excess of fruits and vegetables. This has caused a greater demand for families to learn how to preserve their fruits and vegetables. Food Preservation: Canning can be a safe and economical way to preserve quality food at home. Disregarding the value of your labor, canning homegrown food may save you half the cost of buying commercially canned food. Canning favorite and special products to be enjoyed by family and friends is a fulfilling experience and a source of pride for many people. It is important for the novel home canner to know the proper canning procedures, time and temperature control, to ensure quality products that will be safe for human consumption

What has been done

Eight (8) participants completed the Food Preservation program "I Can". Each participant received an incentive bag with a variety of small canning equipment which would enable them to return home and replicated the preservations methods they had learned. They had increased their knowledge about the safe method for preserving a variety of foods. Participants were hands on during the demonstration.

Results

Following a lecture and demonstration participants prepared apples and tomatoes for canning. They prepared the canning jars, rings and lids by washing and sanitizing the items. The fruit and vegetable were properly canned in a pressure canner for the appropriate time and pressure.

4. Associated Knowledge Areas

KA Code	Knowledge Area
703	Nutrition Education and Behavior
724	Healthy Lifestyle
802	Human Development and Family Well-Being

Outcome #6

1. Outcome Measures

Youth will practice and decimate information about kitchen safety, especially safe operation of stoves, blenders and cooking appliances, and proper handling of knives

2. Associated Institution Types

- 1890 Extension

3a. Outcome Type:

Change in Action Outcome Measure

3b. Quantitative Outcome

Year	Actual
2013	633

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

Many youth and their families are not aware of proper food handling recommendations, the prevalence of cross contamination and how to prevent it. They are also unaware of the guidelines they should use to prevent food borne illnesses. Lack of knowledge in this area could lead to increased hospital visits and even death.

What has been done

The youth were introduced to different types of kitchen appliances, utensils, and equipment and given proper and safe instruction on how to use such kitchen items. During the Fast Track program, you were also given lessons on food safety and how to prevent food borne illnesses and the spread of germs though accurate food temperature readings and as well as hand washing.

Results

As a result of the information that was given to the Fast Track youth, 100% percent of the students are now aware of the proper and safe use of at home kitchen appliances, utensils, and equipment. These outcomes will enable the Fast Track youth to be more confident in safe food preparation for themselves and their families.

4. Associated Knowledge Areas

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

Outcome #7

1. Outcome Measures

Youth will practice and decimate information to their families about food storage temperatures to prevent spoilage

Not Reporting on this Outcome Measure

Outcome #8

1. Outcome Measures

Youth will practice and decimate information to their families about preventing food borne illnesses from consumption of uncooked or spoiled food

Not Reporting on this Outcome Measure

Outcome #9

1. Outcome Measures

Youth will practice and decimate information to their families about the prevention of cross contamination between raw and fresh food in cooking and during preparation.

Not Reporting on this Outcome Measure

Outcome #10

1. Outcome Measures

Youth participating in the SFSP will receive one balanced, nutritionally correct meal per day that is prepared and held at safe temperatures.

Not Reporting on this Outcome Measure

Outcome #11

1. Outcome Measures

Site supervisors operating the SFSP; will report having a complete understanding about, appropriate temperature times and preparation of meals; the adequate time frame for serving meals and appropriate methods for counting, ordering, and storing meals daily. This information will be monitored by Pre/Post testing at the conclusion of the site supervisor training.

Not Reporting on this Outcome Measure

Outcome #12

1. Outcome Measures

By attending the EFNEP, participants will be able to choose adequate portion sizes of foods, according to the MyPlate recommendations.

2. Associated Institution Types

- 1890 Extension

3a. Outcome Type:

Change in Knowledge Outcome Measure

3b. Quantitative Outcome

Year	Actual
2013	633

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

The Expanded Food and Nutrition Education Program (EFNEP) is a health education program designed to assist limited-resource audiences in acquiring the knowledge, skills, attitudes and changed behavior necessary for nutritionally sound diets; to contribute to personal development; and to improve the total family diet and nutritional well-being. Limited resource audiences most often face many challenges with having access or financial resources to obtain nutrient-rich foods. In the state of West Virginia, there is a fast growing need for these unhealthy behaviors to change. Considering the child and adult obesity rates are high, especially in WV where the obesity rates have gradually increased and made the state one of the most obese states in the United States, it is necessary to reverse this course and alter the way that people view this obesity epidemic. EFNEP provides youth with useful and valuable information about the importance of eating healthy and physical activity, while also hoping that the youth will share the information with their family and friends.

What has been done

The students are introduced to "My Plate" and the importance of having half of your plate vegetables and fruit during your meals. My Plate recommendations ask youth to also include grains, which you should make half of your grains whole grains, and protein along with dairy. Youth are encouraged to stay away from sugary drinks. During the lesson, the youth have the opportunity to construct their own plates with the aid of various food models. They are able to visualize actual serving sizes, which amazed most of the youth participants because they were so "small." The participants were able to see this on a "Portion Plate," which is a color coded plate that separates the plate into half vegetables and fruits and ¼ meats and proteins with the other ¼ grains. Along with this information, they learned the vitamins and minerals that each food group provides. Additionally, the participants learned the importance of calcium, iron and folic acid and why it needed to be incorporated into their diets especially during this time in their development.

Results

During the EFNEP Program at the Stonewall Jackson Middle School, the participants learned to make sure that their plates always contained at least half vegetables and fruit. The "Portion Plate" is an excellent way for the kids to see how their plates should look when they sit down to eat their meals because kids can identify with seeing food on their plates. The plate is also a good visual tool for the youth participants to see what an actual serving size. They were amazed that 3-4 ounces of chicken is a serving size compared to two legs, a thigh and breast from KFC. They also learned the multiple benefits of physical activity and why it is important to engage in some type of physical activity at least 60 minutes daily as opposed to sitting inside and playing video games.

4. Associated Knowledge Areas

KA Code	Knowledge Area
703	Nutrition Education and Behavior
724	Healthy Lifestyle
802	Human Development and Family Well-Being

Outcome #13

1. Outcome Measures

By completing EFNEP, participants will be able to explain safe food handling practices.

Not Reporting on this Outcome Measure

Outcome #14

1. Outcome Measures

After completing the EFNEP program, participants will demonstrate their ability to prepare safe, nutritious, and affordable meals.

Not Reporting on this Outcome Measure

V(H). Planned Program (External Factors)

External factors which affected outcomes

- Natural Disasters (drought, weather extremes, etc.)
- Economy
- Appropriations changes
- Public Policy changes
- Government Regulations
- Competing Public priorities
- Competing Programmatic Challenges
- Populations changes (immigration, new cultural groupings, etc.)

Brief Explanation

Cooking school participants were conditioned to cook the way they had been taught by the generation that had preceded them. Breaking traditional cooking methods is very difficult. The participants may not have the adequate equipment in their kitchens to measure and cook with. They may also have limited incomes that have a significant impact on the foods they purchase.

School and other site location schedules, weather conditions, changes in economy, appropriations changes all affected the program implementation. It was difficult to keep a consistent schedule due to changes in site location schedules, and funding cuts caused us to change some of the program deliverables.

V(I). Planned Program (Evaluation Studies)

Evaluation Results

On a national level; WVSUES is a growing contributor in the small school sector; since the incorporation of 1890 EFNEP funding in 2007. In the 2012 Tier Data report, published by USDA's National Institute of Food and Agriculture (NIFA); there were a total of 633 youth that graduated through the university's EFNEP efforts. Total representation of 10% uprising middle school students, 90% middle school students served; 33% of the participants resided in suburban communities, 13% resided in rural communities; while the other 55% consisted of the urban population.

Youth participants from Enslow Middle School, located in Huntington, W.V. had the opportunity to visit Huntington Kitchen, which was showcased during the infamous Jamie Oliver broadcast on national television about the obesity epidemic in Huntington. The participants were privy to try different fruits such as star fruit, kiwis, etc. These are fruit that the youth may not have the opportunity to try on a regular basis. The youth were astonished at how good fruits can be. This is important because they are encouraged to grab a piece of fruit rather than candy or bag of chips when they want to snack.

100% of the cooking school Participants learned how to:

- Prepare food using less fat, sodium, and sugar.

- Flavor foods with spice and herbs that would not add the fat, sodium or sugar to their diets.
- Store food safely according to the USDA standards.
- Prepare foods safely without the fear of cross contamination.

Key Items of Evaluation

Evaluation is key and EFNEP continually illustrates a positive impact on the youths it serves. After participating in the EFNEP program with WVSU Extension Service, results have indicated:

- 75 percent increase in fruit consumption
- 20 percent increase in overall knowledge about healthy food choices and physical activity
- 50 percent decrease in television viewing
- 85 percent increase in food label reading (up from 45 percent in pre-test results)

The Fast Track project evaluations results show an upward trend of the students being more informed and empowered with a confidence that will help them prepare food for themselves. They also show students making healthier eating and snacking choices that they may not have made before taking part in the Fast track program.

V(A). Planned Program (Summary)

Program # 6

1. Name of the Planned Program

Resilient Youth and Families

Reporting on this Program

V(B). Program Knowledge Area(s)

1. Program Knowledge Areas and Percentage

KA Code	Knowledge Area	%1862 Extension	%1890 Extension	%1862 Research	%1890 Research
801	Individual and Family Resource Management		25%		0%
802	Human Development and Family Well-Being		25%		0%
803	Sociological and Technological Change Affecting Individuals, Families, and Communities		25%		0%
806	Youth Development		25%		0%
	Total		100%		0%

V(C). Planned Program (Inputs)

1. Actual amount of FTE/SYs expended this Program

Year: 2013	Extension		Research	
	1862	1890	1862	1890
Plan	0.0	9.0	0.0	0.0
Actual Paid Professional	0.0	10.2	0.0	0.0
Actual Volunteer	0.0	0.0	0.0	0.0

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

Extension		Research	
Smith-Lever 3b & 3c	1890 Extension	Hatch	Evans-Allen
0	570731	0	0
1862 Matching	1890 Matching	1862 Matching	1890 Matching
0	482006	0	0
1862 All Other	1890 All Other	1862 All Other	1890 All Other
0	0	0	0

V(D). Planned Program (Activity)

1. Brief description of the Activity

Tax Preparation: The federal Earned Income Tax Credit (EITC) is the nation's largest cash program directed at low-income families. It reduces the amount of income tax low- to moderate-income working families (with annual incomes of up to roughly \$35,000) are required to pay, and provides a wage supplement to some families. Free tax preparation is available to help workers fill out their tax returns.

Helping Our Undergraduates Succeed in Education (H.O.U.S.E.) /Phase II: The West Virginia State University H.O.U.S.E. program is the only program of its kind in the nation. The H.O.U.S.E. program is composed of two initiatives. The first component assists six at-risk 17-24 year olds with transition into college life; by providing for them with a residence in a small family home setting for their first four semesters. The second component assists three female victims of domestic violence or homelessness, who wish to succeed by graduating from college. Residents of the H.O.U.S.E. program are referred from local and state agencies as well as departments within the university.

Health Literacy: is a program that teaches adult and youth participants how to open the lines of communication with their health care provider(s). Participants are supplied with a Health History Journal to take with them to doctor's appointments, which includes individual sections on family and personal health history, medications, insurance, etc.

Active Lifestyles for Adults and Seniors: Programs developed to enhance gross motor enrichment, improved wellness and healthier lifestyle choices for adults/seniors. Active living is provided through experiential, motivational, and competitive programs to promote physical activity and positive cognitive selection. The program participants represent a host of clientele; from resident nursing home, active living facilities, individuals with limited mobility and even suffering from general medical condition. These programs may be continuous or episodic.

4-H Youth Development programming included after-school, in-school, and summer based enrichment opportunities across the spectrum of mission mandates of 4-H (STEM, Healthy Living, and Citizenship). These efforts focused on literacy, the arts and sciences, and were delivered through a variety of modalities including observational and experiential learning experiences. Activities focused on agriculture, creative and expressive arts, use of the scientific method, and mentoring were used most often

2. Brief description of the target audience

The target audience for the first part of the year was the city of Charleston where there is a higher minority population (11% v. 4% for the state), food deserts, high crime rates, extreme poverty and high rates of childhood obesity. During the second part of the year, WV SU expanded their service location to offer programs in the western region portion of the state in Huntington, WV. There, the EFNEP program provided services to middle school youth and a new staff member was hired to conduct programming targeting adults from young to late adulthood.

Youth K through 12th Grades in our service areas of central and southern West Virginia from low to moderate income level communities.

3. How was eXtension used?

eXtension was not used in this program

V(E). Planned Program (Outputs)

1. Standard output measures

2013	Direct Contacts Adults	Indirect Contacts Adults	Direct Contacts Youth	Indirect Contacts Youth
Actual	1885	5553	1101	5651

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

Patent Applications Submitted

Year: 2013
 Actual: 0

Patents listed

3. Publications (Standard General Output Measure)

Number of Peer Reviewed Publications

2013	Extension	Research	Total
Actual	2	0	0

V(F). State Defined Outputs

Output Target

Output #1

Output Measure

- Number of students that will be served by H.O.U.S.E and Phase II programming.

Year	Actual
2013	10

Output #2

Output Measure

- Number of contact hours for case management and skill development received by students in the H.O.U.S.E./Phase II programs.

Year	Actual
2013	350

Output #3

Output Measure

- Number of households being served by the Bounce Back Tax Program.

Year	Actual
2013	125

Output #4

Output Measure

- Number of participants served through Strengthening Families programs.

Year	Actual
2013	835

Output #5

Output Measure

- Number of individuals being served by the parenting education program.
Not reporting on this Output for this Annual Report

Output #6

Output Measure

- Number of individuals being served through relationship enhancement programs.
Not reporting on this Output for this Annual Report

Output #7

Output Measure

- Number of participants served with individual literacy and technology programming over a one year period.
Not reporting on this Output for this Annual Report

Output #8

Output Measure

- Number of individuals participating in workshops to better enhance financial management at home.

Year	Actual
2013	0

Output #9

Output Measure

- Number of clients receiving an adult health history journal.

Year	Actual
2013	693

Output #10

Output Measure

- Number of participants receiving a youth health history journal.

Year	Actual
2013	693

Output #11

Output Measure

- Number of senior citizens participating in six to eight weeks of active lifestyles programs.

Year	Actual
2013	377

Output #12

Output Measure

- Number of participants (youth and adult) being served by physical activity or programs to promote a more active lifestyle.

Year	Actual
2013	377

Output #13

Output Measure

- Through creative arts programming, youth will receive 8 hours per month of art enrichment.

Year	Actual
2013	0

Output #14

Output Measure

- Number of youth receiving ongoing exposure to adult service providers around a variety of educational topics including expressive arts, media literacy, 4-H SET, and STEM pipeline programs.

Year	Actual
2013	0

Output #15

Output Measure

- Students will participate in laboratory activities in the following topics: Blood typing and DNA analysis; handwriting analysis and thin layer chromatography; drug toxin identification; and fingerprint identification for a total of twenty hours per week.

Year	Actual
2013	0

Output #16

Output Measure

- Youth attending CASTEM camps receiving life skill, math and science skills over a two week period.

Year	Actual
2013	248

Output #17

Output Measure

- New adult volunteers recruited and retained.

Year	Actual
2013	0

Output #18

Output Measure

- Youth attending the expressive arts camp to be instructed in various aspects of expressive arts.

Year	Actual
2013	34

Output #19

Output Measure

- K-12 youth receiving STEM-related education through NASA-centered programming

Year	Actual
2013	2800

Output #20

Output Measure

- K-12 educators receiving STEM-related training.

Year	Actual
2013	18

Output #21

Output Measure

- Number of individuals reporting, they developed better money management and spending practices, over the past year.

Year	Actual
2013	0

Output #22

Output Measure

- Number of individuals reporting they developed better ways to save money over the past year.

Year	Actual
2013	0

Output #23

Output Measure

- Number of middle/high school youth participating in financial management programs.

Year	Actual
2013	0

Output #24

Output Measure

- Youth participating in the 4-H Family Growth program.

Year	Actual
2013	285

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

O. No.	OUTCOME NAME
1	Students who are able to maintain a 2.0 will be considered successful through participation in the H.O.U.S.E. and Phase II program.
2	Students attending the H.O.U.S.E./Phase II programs will indicate an increased knowledge on the Daniel Memorial Assessment.
3	Teens/Adults participating in the financial literacy programs indicate an increased knowledge of their personal financial management strategies.
4	Adults receiving relationship enhancement instruction, demonstrate harmful behavior avoidance.
5	Participants completing parenting education programs will indicate an increase in knowledge about beneficial parenting techniques.
6	Participants completing financial education programs, will use proper spending habits.
7	After completing financial management programs; participants will be able to save more finances in the next fiscal year.
8	After completing the health literacy workshop, participants will continue to use the personal health history journals and demonstrate improved patient physician interaction.
9	After completing the active lifestyle programs, participants will report the addition of better health management practices, including additional physical activity.
10	Youth attending expressive arts programs will demonstrate mastery of their creative art.
11	Youth will demonstrate financial literacy skills including budgeting, fiscal record keeping, and understanding financial management principles.
12	Youth will report making better choices about spending habits at the grocery store.
13	Youth will report an interest in pursuing a health, science, or technology-related career.
14	Youth will demonstrate knowledge of the scientific method.
15	Youth attending CASTEM camps will exhibit increased knowledge of math, science, and life-skills.
16	K-12 teachers trained by the program will incorporate more experiential STEM-learning activities for students.
17	Youth completing the 4-H Family Growth program will report an increased interest in reading and gardening activities.

Outcome #1

1. Outcome Measures

Students who are able to maintain a 2.0 will be considered successful through participation in the H.O.U.S.E. and Phase II program.

2. Associated Institution Types

- 1890 Extension

3a. Outcome Type:

Change in Knowledge Outcome Measure

3b. Quantitative Outcome

Year	Actual
2013	10

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

The students of WVSU participating in the HOUSE/Phase II Programs are typically ones that have experience many challenges in life. The individuals are diverse in a multitude of ways because stressors, they have overcome in order to enroll in college. Eligibility for the program includes youth that represent, first-time generation, formerly incarcerated, a history of homelessness, previous domestic violence issues and a lack of family support. Quite often, these students are not viewed as one's that would obtain a college degree. Most often, former students admit that their college experience would have been more difficult without the opportunity to have the transitional experience. It is the responsibility of staff working with this population, to ensure that each of the participant needs are carefully considered. This program is unique to the country and especially by its affiliation to an institution of higher education. It is most often considered a model for other agencies or professionals helping people achieve a better quality of life.

What has been done

Students attending the HOUSE program have a daily academic support system in place to assist the undergraduate with tools for being successful. The staff has an ongoing relationship with the WVSU Collegiate Support and Counseling Department. There are monthly presentations and workshops provide to the students by the counselors and services are continuously provided. Tutors were also obtained in order to also provide a resource to the participant when experiencing academic challenges. The HOUSE Program Coordinator also develops a relationship with each instructor for every student participating in the program. Professors serve as an extended network for keeping the coordinator informed about the individuals overall performance in the course. Class attendance and grades are strictly monitored in order to have a first line of engagement for keeping students on task. Mentoring and confidential consultation, are included for providing a

platform of encouragement for them to meet their educational goals.

Results

In May 2013, the average GPA for the program was 3.05 on a 4.0 scale. This reflects an increased average GPA of 36.77% from the when participants were first admitted to the program (2.23 avg.).

4. Associated Knowledge Areas

KA Code	Knowledge Area
801	Individual and Family Resource Management
802	Human Development and Family Well-Being

Outcome #2

1. Outcome Measures

Students attending the H.O.U.S.E./Phase II programs will indicate an increased knowledge on the Daniel Memorial Assessment.

2. Associated Institution Types

- 1890 Extension

3a. Outcome Type:

Change in Knowledge Outcome Measure

3b. Quantitative Outcome

Year	Actual
2013	0

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

The students of WVSU participating in the HOUSE/Phase II Programs are typically ones that have experience many challenges in life. The individuals are diverse in a multitude of ways because stressors, they have overcome in order to enroll in college. Eligibility for the program includes youth that represent, first-time generation, formerly incarcerated, a history of homelessness, previous domestic violence issues and a lack of family support. Quite often, these students are not viewed as one's that would obtain a college degree. Most often, former students admit that their college experience would have been more difficult without the opportunity to have the transitional experience. It is the responsibility of staff working with this population, to ensure that each of the participant needs are carefully considered. This program is unique to the country and especially by its affiliation to an institution of higher education. It is most often considered a model for other agencies or professionals helping people achieve a better quality of life.

What has been done

The Daniel Memorial Life Skills Assessment Program assesses individuals on 16 different life skills needed to transition into adulthood and live independently. Program staff works diligently to assist clients with improving their skills in order to live independently and become successful with daily decision that affect their lives. Topics include Money Management, Food Management, Job Seeking, Job Maintenance, Education Planning, Housing, Transportation, Health, Interpersonal Skills, Emergency and Safety, Leisure Activities, Health, Job Maintenance Skills and a host of other live skill areas. Upon entering the HOUSE/Phase II programs, participants are administered the assessment to determine, what skills they possess and what items will need

Results

to be emphasized upon throughout their participation in the program. Over the course of the year, participants were randomly selected to retake the assessment as a means for monitoring student's progression. In addition, graduating seniors will be reassessed as they depart from the programs, in order to gain a holistic view. This allows the students and program coordinator; to reflect upon how the HOUSE/Phase II Programs have benefited the independent student and the level of skills they have developed to live independently. WVSUES staff also continues to provide ongoing support and regular programs for the resident of the HOUSE/Phase II Programs.

4. Associated Knowledge Areas

KA Code	Knowledge Area
801	Individual and Family Resource Management
802	Human Development and Family Well-Being

Outcome #3

1. Outcome Measures

Teens/Adults participating in the financial literacy programs indicate an increased knowledge of their personal financial management strategies.

2. Associated Institution Types

- 1890 Extension

3a. Outcome Type:

Change in Knowledge Outcome Measure

3b. Quantitative Outcome

Year	Actual
2013	500

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

According to the 2009 results of efforts conducted by the West Virginia Alliance for Sustainable Families (WVASF), the report details fifty three participating organizations who were asked to identify services they would like to be able to provide related to economic sustainability and/or financial literacy. Thirty-seven organizations responded to this question expressing interest in services that fell into the following categories: Financial Literacy, Workforce Development, and remainder twenty-six responses related to Financial Literacy. The need for basic money management skills (basic banking, etc.) was also identified with emphasis placed on teaching such skills early and targeting to levels that are appropriate for individuals at various life stages

What has been done

West Virginia State University (WVSUES) is currently offering Financial Literacy workshops. The have been presented them in five different counties (Kanawha, Lincoln, Logan, Putnam, and Cabell). Each workshop is for approximately 6 weeks, once a week for two hours. Our anticipation is to encourage better decision making for people seeking to complete high school, prepare for college, or sharpening skills to support current employment advancement. Our goal is to increase the confidence of individuals to manage their money efficiently while gaining the understanding of financial risks and benefits of saving.

Results

the end of the six week workshop each individual quickly understood how their habits, attitudes and values affected their financial decisions. As a result better opportunities were provided for them to transition to a better place in their job or community.

20% learned that you can achieve a goal by writing things down on paper versus keeping it in your head.

20% learned that they needed to be responsible by differentiating between needs and wants to achieve a goal.

60% of the students stated that they learned that needs and wants were different depending on the person.

5% of the students stated that they learned more of how to balance their budget than before.

75% of the students in the Lincoln County Excel Program stated that they learned something new from the money habitude cards in regards to how they viewed and handled money.

33.3% stated that ? managing your money? was the most helpful component.

33.3% identified ?learning how to budget? was best beneficial.

33.3% specified that ?the use of credit cards? was the greatest element.

25% stated that they learned the difference between a deficit and surplus in a budget.

4. Associated Knowledge Areas

KA Code	Knowledge Area
801	Individual and Family Resource Management
802	Human Development and Family Well-Being

Outcome #4

1. Outcome Measures

Adults receiving relationship enhancement instruction, demonstrate harmful behavior avoidance.

2. Associated Institution Types

- 1890 Extension

3a. Outcome Type:

Change in Knowledge Outcome Measure

3b. Quantitative Outcome

Year	Actual
2013	0

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

{No Data Entered}

What has been done

{No Data Entered}

Results

{No Data Entered}

4. Associated Knowledge Areas

KA Code	Knowledge Area
801	Individual and Family Resource Management
802	Human Development and Family Well-Being

Outcome #5

1. Outcome Measures

Participants completing parenting education programs will indicate an increase in knowledge about beneficial parenting techniques.

2. Associated Institution Types

- 1890 Extension

3a. Outcome Type:

Change in Knowledge Outcome Measure

3b. Quantitative Outcome

Year	Actual
2013	0

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)
{No Data Entered}

What has been done
{No Data Entered}

Results
{No Data Entered}

4. Associated Knowledge Areas

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

Outcome #6

1. Outcome Measures

Participants completing financial education programs, will use proper spending habits.

2. Associated Institution Types

- 1890 Extension

3a. Outcome Type:

Change in Knowledge Outcome Measure

3b. Quantitative Outcome

Year	Actual
------	--------

2013 0

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)
{No Data Entered}

What has been done
{No Data Entered}

Results
{No Data Entered}

4. Associated Knowledge Areas

KA Code	Knowledge Area
801	Individual and Family Resource Management
802	Human Development and Family Well-Being

Outcome #7

1. Outcome Measures

After completing financial management programs; participants will be able to save more finances in the next fiscal year.

2. Associated Institution Types

- 1890 Extension

3a. Outcome Type:

Change in Knowledge Outcome Measure

3b. Quantitative Outcome

Year	Actual
2013	0

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)
{No Data Entered}

What has been done

{No Data Entered}

Results

{No Data Entered}

4. Associated Knowledge Areas

KA Code	Knowledge Area
801	Individual and Family Resource Management
802	Human Development and Family Well-Being

Outcome #8

1. Outcome Measures

After completing the health literacy workshop, participants will continue to use the personal health history journals and demonstrate improved patient physician interaction.

2. Associated Institution Types

- 1890 Extension

3a. Outcome Type:

Change in Knowledge Outcome Measure

3b. Quantitative Outcome

Year	Actual
2013	0

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

In today's climate, people have to be more conscientious about their health care needs. A large factor in that is being able to monitor one's health more closely through maximizing time with their physician to effective record keeping. Americans, who make more visits to their health care provider, have increased medical expenses. Individuals that have been trained in the health literacy possess the ability to assist others with monitoring their overall quality of health and being more of a contributor of the needs, opposed to simply a receiver. According to the National Network of Libraries of Medicine (NNLM) (2012), in addition to the effects of low health literacy on the individual patient, there are economic consequences of low health literacy to society. According to the report Low Health Literacy: Implications for National Health Policy "Low health literacy is a major source of economic inefficiency in the U.S. health care system." The report estimates that the cost of low health literacy to the U.S. economy is between \$106 billion to \$238 billion annually. This cost remains the same. To put this in perspective, the cost represents an amount equal to the cost of insuring every one of the more than 47 million people who lacked coverage in the United States in 2006. Improving health communication reduces health care

costs and increases the quality of health care.

What has been done

The FCS Nutrition and Health Specialist continues to serve on the North Central ISFAC (Inter-Service Family Assistance Committee) in the north central part of the state. Funding (\$29,000) to provide this program has continued to come from the Harrison County Family Resource Network for the 13 north central counties. In the 2013 year funding was not only provided for the military families but a program was implemented for the families that the FRN serves on a day to day basis. Programs were provided to one of the Catholic Parishes and the Association of Retired Federal Employees.

Results

Families who attended the health literacy program were, better equipped to track and maintain the family medical records. Caregivers were empowered to better advocate for their patients/loved ones.

4. Associated Knowledge Areas

KA Code	Knowledge Area
801	Individual and Family Resource Management
802	Human Development and Family Well-Being

Outcome #9

1. Outcome Measures

After completing the active lifestyle programs, participants will report the addition of better health management practices, including additional physical activity.

2. Associated Institution Types

- 1890 Extension

3a. Outcome Type:

Change in Knowledge Outcome Measure

3b. Quantitative Outcome

Year	Actual
2013	350

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

This past year, WVSUES continued to focus on the expansion of our healthy lifestyles programs for seniors. The generations of older Americans are rapidly growing throughout the United States. Quite often these individuals are raising a younger child and there is an overwhelming need for them, to take more steps for being active. According to the Centers for Disease Control

and Prevention (2012), physical activities among seniors; helps maintain the ability to live independently and reduces the risk of falling and fracturing bones, reduces the risk of dying from coronary heart disease and of developing high blood pressure, colon cancer, and diabetes, helps people with chronic, disabling conditions improve their stamina and muscle strength, Reduces symptoms of anxiety and depression and fosters improvements in mood and feelings of well-being. Finally regular physical activity helps maintain healthy bones, muscles, and joints and helps control joint swelling and pain associated with arthritis.

What has been done

- 1.Developed and published a planning document and history designed to help local nursing homes implement their own local Geri Olympic program.
- 2.Expanded use of the Facebook site and email data base for sharing research and information relevant to senior wellness and quality of life.
- 3.Began development of a state wide data base or email file that could be used to promote Geri Olympics its benefits.
- 4.Conducted 10 Geri Olympics on the move programs in rural hospitals for residents unable to attend regular Geri Olympics programs in Charleston.
- 5.Presented and set up exhibits at two state conferences presenting the values, benefits and goals of Geri Olympics. (SHEC Conference and Senior Conference at Cedar Lakes)
- 6.Completed and published an evaluation at Geri Olympics that includes feedback, enabling the improvement of the Geri Olympics program and involvement of the resident athletes as well as volunteers and health care professionals.

Results

Over the past year, 350 nursing home residents have experienced Geri Olympics programs focused on reducing the effects of living a sedentary life and other issues revolving around being lonely, hopeless and boredom. The overall goals have been to promote quality of life, wellness, active living and an opportunity to be socially and intellectually connected to peers and the community. As a result of the \$25,000 grant that was awarded by the WV Department of Health and Human Services in 2012, the program has continued to grow in geographic expansion. Geri Olympics Programs are also inclusive of an outreach program (Geri Olympics on the Move) having the same benefits and goals for nursing homes in rural areas and community hospitals. This past year, the program served 155 residents through the central, northern, and southwest regions of the state.

4. Associated Knowledge Areas

KA Code	Knowledge Area
801	Individual and Family Resource Management
802	Human Development and Family Well-Being

Outcome #10

1. Outcome Measures

Youth attending expressive arts programs will demonstrate mastery of their creative art.

2. Associated Institution Types

- 1890 Extension

3a. Outcome Type:

Change in Knowledge Outcome Measure

3b. Quantitative Outcome

Year	Actual
2013	0

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

With cuts to school art and music programming, youth have less outlets and access to this type of programming. The WVSU 4-H Hip Hop Camp, 4-H Young Film Makers Club, 4-H Dance Camp and 4-H Theatre Club were created to provide distinct programming to address the growing needs that youth have in developing life skills and becoming more productive members of their society. In order to achieve this, we provided activities that were delivered in Hip Hop and classical genres including music production, DJ (turntables), dance, song writing, recording, theatre and film/visual arts. Through partnerships with volunteers, local businesses and community organizations, youth between the ages of 9 and 18 are able to foster their desires to learn certain expressive arts skills with caring adults who have already mastered the skills. Providing this healthy and nurturing way as an outlet for youth to express themselves will ensure less criminal acts in the community, higher student achievement by these participating youth and an increased sense of self-worth by participants while being given productive ways to spend their time.

What has been done

WVSU Extension Service provided two separate 5 day long day Hip Hop Camp and 4-H Dance Camps at the Roosevelt Neighborhood Center attended by a total of 34 middle school youth. The activities that were delivered in Hip Hop and classical genres including music production, DJ (turntables), dance, song writing, recording, and visual arts. These camps were staffed by local artists to serve as teachers, mentors and counselors and they fostered the youth daily, providing step by step instruction on the youth's chosen track (music production, dance, recording, etc.). The teachers were trained to provide the essential elements of 4-H throughout the duration of the camp. At the culmination of the camps, youth demonstrated the skills obtained by providing a closing presentation to their parents, family members, community members and WVSU staff. So far the Theatre Club has one presentation at a 4-H Mentoring Family Night event and one in the Davis Fine Arts Theatre on campus and the 4-H Young Film Makers club has completed several full film projects.

Results

At the culmination of the camp and the completion of every theatre and film project, 100% of youth have demonstrated their newly obtained skills and confidence by providing a presentation to the parents, family members, community members, the club members and WVSU staff. Every youth demonstrated an increased knowledge in and an increased mastery of their chosen area by completing their presentation. Even the youth who began the camp/club with a fear of public speaking/performing were able to publicly display their knowledge gained by presenting or

performing their work.

4. Associated Knowledge Areas

KA Code	Knowledge Area
802	Human Development and Family Well-Being
803	Sociological and Technological Change Affecting Individuals, Families, and Communities
806	Youth Development

Outcome #11

1. Outcome Measures

Youth will demonstrate financial literacy skills including budgeting, fiscal record keeping, and understanding financial management principles.

Not Reporting on this Outcome Measure

Outcome #12

1. Outcome Measures

Youth will report making better choices about spending habits at the grocery store.

2. Associated Institution Types

- 1890 Extension

3a. Outcome Type:

Change in Action Outcome Measure

3b. Quantitative Outcome

Year	Actual
2013	0

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

Obesity is a national epidemic that continues to grow, especially in WV. One of the reasons obesity is so prevalent in West Virginians is because there is not enough knowledge on how to eat healthier on a budget, nor is there a desire to do so. The more unhealthy food that is purchased and consumed, the more obesity the state and nation becomes, which leads to increased medical costs applied to obesity related illnesses such as diabetes and high blood pressure.

What has been done

The Children Youth and Families at Risk funded WVSU Fast Track program aimed to increase knowledge in these areas, reducing the rate of obesity amongst our youth. Middle school youth in the Charleston area were targeted for this program. Afterschool and summer day camps were provided. As an afterschool setting, six week 2-hour a day sessions were offered to the schools and neighborhood center. Two one week day camps, 7 hours a day, were offered during the summer. Lessons on food safety, food preparation, physical fitness, and financial literacy were offered. As youth participated in the program, they were provided examples of healthier, yet cost effective snack, breakfast, lunch, and dinner options. They were provided lessons on how to calculate their spending, how, and when to purchase the items.

Results

By the completion of the Fast Track program, 100% of youth were able to demonstrate in their lesson the methods used to budget and purchase a meal healthier than the meals they usually consume, while staying within their budget.

4. Associated Knowledge Areas

KA Code	Knowledge Area
801	Individual and Family Resource Management
802	Human Development and Family Well-Being
806	Youth Development

Outcome #13

1. Outcome Measures

Youth will report an interest in pursuing a health, science, or technology-related career.

2. Associated Institution Types

- 1890 Extension

3a. Outcome Type:

Change in Condition Outcome Measure

3b. Quantitative Outcome

Year	Actual
2013	0

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

Research has found that only 5% of current US college graduates earn science, engineering, or technology degrees compared to 66% in Japan and 59% in China. Fewer youth in the US pursue these careers and we believe that is due to a lack of interest, which comes from a lack of

enjoyable, yet educational opportunities to gain knowledge in the STEM areas.

What has been done

The HSTA summer program and Summer Transportation Institute are proud to represent the initiative of increasing youth participating in Science, Technology, Mathematics, and Engineering. WVSU provides youth with hands-on learning experiences that has proven to spark their interests in the STEM fields by providing time on the college campus while learning in the classrooms and laboratories.

Results

After completion of the HSTA post survey, 72% reported an increased interest in science; 48% increased interest in math, and; 79% reported that HSTA had a moderate to very high impact on their interest in pursuing health care careers.

After completion of the STI post survey, 58% reported an increased interest in science, technology, and engineering.

4. Associated Knowledge Areas

KA Code	Knowledge Area
803	Sociological and Technological Change Affecting Individuals, Families, and Communities
806	Youth Development

Outcome #14

1. Outcome Measures

Youth will demonstrate knowledge of the scientific method.

Not Reporting on this Outcome Measure

Outcome #15

1. Outcome Measures

Youth attending CASTEM camps will exhibit increased knowledge of math, science, and life-skills.

Not Reporting on this Outcome Measure

Outcome #16

1. Outcome Measures

K-12 teachers trained by the program will incorporate more experiential STEM-learning activities for students.

Not Reporting on this Outcome Measure

Outcome #17

1. Outcome Measures

Youth completing the 4-H Family Growth program will report an increased interest in reading and gardening activities.

Not Reporting on this Outcome Measure

V(H). Planned Program (External Factors)

External factors which affected outcomes

- Economy
- Appropriations changes
- Public Policy changes
- Competing Public priorities
- Competing Programmatic Challenges
- Populations changes (immigration, new cultural groupings, etc.)

Brief Explanation

School and other site location schedules, weather conditions, changes in economy, appropriations changes all affected the program implementation. It was difficult to keep a consistent schedule due to changes in site location schedules, and funding cuts caused us to change some of the program deliverables.

V(I). Planned Program (Evaluation Studies)

Evaluation Results

Each youth completed a survey about their knowledge of the topics before and after the program. The survey's indicated that 100% of the youth reported knowledge gained in all areas of the financial literacy curriculum. Group discussions proved that youth were unaware of the amount of funds it takes to maintain a certain lifestyle from month to month. They learned that it is necessary to begin making plans for their futures now; starting by improving or maintaining adequate grades in order to pursue the career they have chosen. Through the program, youth also gained knowledge of various occupations that are available.

This year's G.O., played host to over 199 nursing home or assisted living residents, from 22 facilities around the state that competed, in activities designed to enhance their active lifestyles capacity. The Geri Olympics started as a small event to provide students with out of class learning experiences, community agencies assistance in programming for seniors and nursing home residents, an exciting competitive event for nursing home resident athletes that provided an opportunity for competition, socialization and involvement.

There were 160 volunteers that represented a host of community and collegiate

organization. There were 30 students that participated as volunteers from the Allied Health Department of Kanawha Valley Community and Technical College and 32 that represented the Marshall University School of Pharmacy. In September 2014, the first annual Geri Symposium will be hosted at Marshall University being co-hosted by the pharmacy school which bears its name and the Institute for Geri Olympics and Active Living, which was established in 2013.

Key Items of Evaluation

There has been an average of 48 Financial Literacy Programs and in attendance a standard participation of approximately 500 individuals. Program results have shown that each participants knowledge of managing money as a whole increased by 13% by the end of the one hour long workshop as well as 100% stating the course was helpful overall and would recommend it to others.

By the completion of the Fast Track program, 100% of youth were able to demonstrate in their lesson the methods used to budget and purchase a meal healthier than the meals they usually consume, while staying within their budget.

After completion of the HSTA post survey, 72% reported an increased interest in science; 48% increased interest in math, and; 79% reported that HSTA had a moderate to very high impact on their interest in pursuing health care careers. After completion of the STI post survey, 58% reported an increased interest in science, technology, and engineering.

V(A). Planned Program (Summary)

Program # 7

1. Name of the Planned Program

Community Vitality

Reporting on this Program

V(B). Program Knowledge Area(s)

1. Program Knowledge Areas and Percentage

KA Code	Knowledge Area	%1862 Extension	%1890 Extension	%1862 Research	%1890 Research
403	Waste Disposal, Recycling, and Reuse		5%		5%
502	New and Improved Food Products		5%		5%
602	Business Management, Finance, and Taxation		30%		30%
604	Marketing and Distribution Practices		10%		10%
605	Natural Resource and Environmental Economics		10%		10%
608	Community Resource Planning and Development		40%		40%
	Total		100%		100%

V(C). Planned Program (Inputs)

1. Actual amount of FTE/SYs expended this Program

Year: 2013	Extension		Research	
	1862	1890	1862	1890
Plan	0.0	12.0	0.0	1.0
Actual Paid Professional	0.0	6.0	0.0	0.0
Actual Volunteer	0.0	0.0	0.0	0.0

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

Extension		Research	
Smith-Lever 3b & 3c	1890 Extension	Hatch	Evans-Allen
0	334087	0	0
1862 Matching	1890 Matching	1862 Matching	1890 Matching
0	282150	0	0
1862 All Other	1890 All Other	1862 All Other	1890 All Other
0	0	0	0

V(D). Planned Program (Activity)

1. Brief description of the Activity

Community Development and Revitalization: Beautification Toolkit Presentations, Regional Litter Sweeps, Hawks Nest Golf Course Sustainability Plan, Regional Design Guidelines, Chair Farmland Protection Board; assisted in planning statewide Create WV Conference on the Future in Richwood, WV and The Building Conference; Morgantown, WV, two agents attended Sustainable Land Use and Planning certification training.

Regional and Local Economic Development: Meadow River Trail (Rail to Trail development); Designed and supported launch and management of three crowdfunding initiatives

Micro-Enterprise and Small Business Development: Established free weekly and monthly workshops for Website development, Social Media, Business Marketing, Business Law and Finance, 50+ Encore Entrepreneurs Program for "second stage" start ups; Black Business Association Supporting Entrepreneurs; Co-marketing and service development with WV Small Business Administration for business certification information and Affordable Care Act information.

Workforce Education and Individual Resource Development: Offered public workshops: Business of Film-Working with the Film Office; 10 Commandments for Creative Success; Independent Publishing; Producing 101; Composing for New Media 101; Screen and Graphic Novel Writing 101; Entertainment Law 101, Step Up for Women (Skilled Trades Training Program)

2. Brief description of the target audience

Community leaders, government officials and agencies, community members, small business owners, potential business start-ups, un-employed and under-employed workforce members (with focus on low-to-mod income) and regional economic development authorities, tech/innovation oriented start ups, community organizations, entrepreneurs, inventors, community and economic developers, community volunteers, business leaders, city managers, students, artists

3. How was eXtension used?

WVSU EDC specialist participated in several eXtension webinars to expand knowledge in topics related to community and economic development. Specific areas included Community Planning and Zoning, Cooperatives, Creating Healthy Communities, Diversity, Equity and Inclusion, Entrepreneurs & Their Communities, Geospatial Technology, Program Evaluation, Volunteer Administration

V(E). Planned Program (Outputs)

1. Standard output measures

2013	Direct Contacts Adults	Indirect Contacts Adults	Direct Contacts Youth	Indirect Contacts Youth
Actual	9952	58000	0	0

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

Patent Applications Submitted

Year: 2013
 Actual: 0

Patents listed

3. Publications (Standard General Output Measure)

Number of Peer Reviewed Publications

2013	Extension	Research	Total
Actual	0	0	0

V(F). State Defined Outputs

Output Target

Output #1

Output Measure

- WVSUES will provide technical assistance with various community planning, disaster preparedness and/or re-development efforts.

Year	Actual
2013	8

Output #2

Output Measure

- Number of potential, start-up and existing small business owners served with training, mentoring and other assistance programs.

Year	Actual
2013	250

Output #3

Output Measure

- Educational programs and initiatives related to community revitalization including green projects, will be provided and/or supported.

Year	Actual
2013	27

Output #4

Output Measure

- Workforce development participants receiving necessary training and placement assistance for targeted industries.

Year	Actual
2013	30

Output #5

Output Measure

- Grants, financial awards or new partnerships to support initiatives will be developed, received and utilized.

Year	Actual
2013	15

Output #6

Output Measure

- Number of regional and local economic development initiatives initiated, led, and supported by faculty and staff members.

Year	Actual
2013	10

Output #7

Output Measure

- Number of volunteers, community members, and stakeholders actively involved in initiatives.

Year	Actual
2013	821

Output #8

Output Measure

- Number of small business owners working on facade renovations.

Year	Actual
2013	2

V(G). State Defined Outcomes

V. State Defined Outcomes Table of Content

O. No.	OUTCOME NAME
1	Communities will implement components of their strategic action plans or regional economic development plans.
2	Potential business owners or existing small businesses received financial assistance, obtained a business licenses or reported an increased knowledge of relevant business issues as a result of participation in CED programs.
3	Participants of workforce training programs successfully complete training programs resulting in certification for job placement, enhanced industry skills or employment.
4	Grants, financial awards or partnerships will be awarded or developed for use to support CED initiatives.
5	Participants report increased comprehension of revitalization or green development principles.

Outcome #1

1. Outcome Measures

Communities will implement components of their strategic action plans or regional economic development plans.

2. Associated Institution Types

- 1890 Extension

3a. Outcome Type:

Change in Action Outcome Measure

3b. Quantitative Outcome

Year	Actual
2013	0

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

In 2012, the U.S. Census Bureau reported one in three counties across America was dying. West Virginians in many communities are struggling now to save their place. For example, since 1950, McDowell County, W.Va., has lost 80 percent of its population. Census data indicates at least 10 West Virginia communities are projected to vanish within in the next decade.

Creative people play a powerful role in innovation-based economic growth. The people who create the highest paying jobs, contribute to communities, and start innovative businesses are members of the creative economy, and these are the most coveted demographic. Creatives are interested in quality of life over many other factors, and they tend to be able to work anywhere, as long as they have broadband. With West Virginia's rural quality of life, abundance of natural resources, outdoor recreational assets and geographical proximity to major population centers on the east coast, we've strategically aligned our program development to assist communities across the state in attracting and retaining innovation/creative economy workers. Communities must align their strategic planning efforts to be more regional, and to capitalize and natural, recreational, and quality of life assets as never before to attract and retain innovators.

What has been done

WVSU Extension Service is working in traditional and creative new ways to help West Virginians understand our collective potential in the new global economy. We've reorganized our programs to streamline our efforts to work on targeted initiatives. We've hired new agents with expertise in historic preservation, cultural tourism, and agribusiness who are working with community leaders, existing and future business owners, entrepreneurs and youth to connect diverse collaborative projects, technology, research and dialogue. Our work is focused on sustainable communities, innovation economy growth and helping others reposition natural and human capital assets in ways that welcome and support new economy growth.

We develop programs and provide planning support to help communities attract and retain innovators in arts, technology, tourism and entrepreneurship. And we assist in plans for community-wide beautification, deconstruction, and regional asset mapping.

Agents partner in local government initiatives and regional planning initiatives. WVSU Extension agents led and will likely continue to lead and participate in the design and delivery of two leading statewide training conferences focused on innovation and sustainability as economic drivers. These conferences include training for community and economic developers, municipal leaders, educators, business leaders, entrepreneurs, and community advocates from across the state. Agents also continue to lead regional efforts to help communities help communities benefit from the Boy Scout Jamboree site in Southern WV.

Results

We're now working closely with regional stakeholders as they develop new comprehensive plans. CED agents provide comprehensive planning facilitation, GIS Community Analyst services, regional planning facilitation, Disaster Preparedness expertise and planning facilitation, community building and networking event planning expertise, green building and sustainable community development technical information and consulting.

Participation in statewide conferences is diverse and growing, with more leaders and decision makers attending than ever before.

4. Associated Knowledge Areas

KA Code	Knowledge Area
403	Waste Disposal, Recycling, and Reuse
608	Community Resource Planning and Development

Outcome #2

1. Outcome Measures

Potential business owners or existing small businesses received financial assistance, obtained a business licenses or reported an increased knowledge of relevant business issues as a result of participation in CED programs.

2. Associated Institution Types

- 1890 Extension

3a. Outcome Type:

Change in Condition Outcome Measure

3b. Quantitative Outcome

Year	Actual
2013	0

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

WVSU CED agents have never met a small business owner, entrepreneur, or individual interested in starting a business who didn't have questions about legal structure, marketing, finance, intellectual property, and strategy. But we've met plenty of people who say they didn't know of the WVSU Extension and other resources that would help them plan, marketing, track financials, or increase revenue. In a rural state, connecting resources face to face is difficult, expensive and time consuming.

West Virginia often competes for last position in nearly all business related categories. WVSU EDC professionals have worked with statewide service providers for more than one year piloting joint training events, examining data related to small business engagement and participation in certification and set aside programs. Small business participation rates in government contracts are very low, and among all small businesses, women owned businesses lead all other demographics. All agree that West Virginia needs to develop a new, bold, fresh approach to small business development, from engagement to market.

What has been done

Last year we officially adopted a CED program focus on innovation economy development and sustainability, and we built capacity to connect our programs and resources via mobile and broadband technologies, to increase access to a wide variety of programs aimed at offering small businesses the kind of targeted expertise they need to grow.

The DigiSo initiative, housed at the WVSU Economic Development Center, along with the Creators Program of professional development workshops, offers weekly, monthly free and low cost clinics featuring assistance in Web development, social media strategy, small business finance and investment, law, intellectual property, marketing, and even virtual networking opportunities. An ?incubator? component and production facility is available to the public. The EDC also offers co-working space and opportunities, including co-working electronically via Google Hangout or Skype.

The planned establishment of a 'civic innovation lab', called the DigiSo Makerspace, will offer growers, inventors, artists, students, families and tinkerers unprecedented access to 3D printing, open-source software and equipment, and connectivity to campus programs.

Results

More than 80% of attendees in our business clinics and public workshops report that they have a better understanding of how to organize and promote their business as well as connect with other useful resources in finance and investment.

Ninety percent polled reported they have a better understanding of how to protect their ideas after attending our IP workshops.

We supported clients participation in three different statewide crowd funding initiatives that involved business pitches from every industry.

We increased individual engagement with digital/social media for business development, business finance, intellectual property and business law information through training sessions and

consistent weekly and monthly events.

4. Associated Knowledge Areas

KA Code	Knowledge Area
502	New and Improved Food Products
602	Business Management, Finance, and Taxation
604	Marketing and Distribution Practices

Outcome #3

1. Outcome Measures

Participants of workforce training programs successfully complete training programs resulting in certification for job placement, enhanced industry skills or employment.

2. Associated Institution Types

- 1890 Extension

3a. Outcome Type:

Change in Knowledge Outcome Measure

3b. Quantitative Outcome

Year	Actual
2013	0

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

Construction is still a male dominated occupation. But in 2010, there were about 800,000 women working in the construction industry nationally. That amounts to approximately nine percent of the industry workforce.

According to informal surveys of small business owners across several different industries, there was a need for Quickbooks training, Website design, business law, corporate structure, self-publishing, composing music for digital media applications, and film-making.

Furthermore, small businesses and creatives expressed the need for studio space to produce promotional and professional videos and to learn how to edit digital media.

What has been done

We partnered with West Virginia Women Work, a statewide nonprofit organization that supports and advocates for the education, employment and economic equity for all women to support the training efforts of two cohorts of trainees, in partnership with Step Up for Women / West Virginia

Women Work leadership.

We piloted Quickbooks training for small businesses, artists, and non profits. We also piloted clinics for individuals to work one-on-one with Extension professionals and volunteer experts to gain the skills in Web design, social media, and other professional development topics to increase workplace readiness and employability.

Our production studios, equipment and co-working space is open to the public, encouraging co-learning, collaboration, and accelerated learning for many attending workshops at the WVSU Economic Development Center.

Results

Thirty women graduated from the Step Up for Women/Women Work program in 2013. Program leadership reports an 80% placement rate and a significant change in earning power, demonstrated by starting wages as high as \$15/hour for union jobs. Residential jobs start at \$9/hour.

One hundred percent of graduates reported increased knowledge which improved employability.

Ninety eight percent of participants in our Quickbooks training and business development workshops reported an increase in knowledge, and in confidence with technology and business planning.

4. Associated Knowledge Areas

KA Code	Knowledge Area
608	Community Resource Planning and Development

Outcome #4

1. Outcome Measures

Grants, financial awards or partnerships will be awarded or developed for use to support CED initiatives.

2. Associated Institution Types

- 1890 Extension

3a. Outcome Type:

Change in Condition Outcome Measure

3b. Quantitative Outcome

Year	Actual
2013	0

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

With increasingly difficult economic times, budgets are dwindling, and WVSU Extension professionals have to seek additional and alternative funding to support the community and programmatic work that so desperately needs to be done.

What has been done

Agents in southern West Virginia worked with regional development agencies to write grants to various foundations. West Side Main Street wrote funding proposals to community based funding organizations and to the WV Legislature. And the WVSU Economic Development Center participated in writing an integrated proposal for USDA funding. Agents working with the Economic Development Center have also worked to build contract education opportunities, and have applied for Neighborhood Investment Program tax credits.

Results

Combined, WVSU CED professionals have been awarded \$320,940 in additional funding for innovative program development. We are able to promote sustainable community training and technical assistance statewide, continue to build connections with rural communities to share business development resources, and we're engaging in national research on best practices in online learning. Our capacity to serve rural communities through our "makerspace" equipment inventory is growing, and as a result, so are our innovation-oriented programs and STEAM workshops for co-learners, families, students and minorities.

4. Associated Knowledge Areas

KA Code	Knowledge Area
608	Community Resource Planning and Development

Outcome #5

1. Outcome Measures

Participants report increased comprehension of revitalization or green development principles.

2. Associated Institution Types

- 1890 Extension

3a. Outcome Type:

Change in Knowledge Outcome Measure

3b. Quantitative Outcome

Year	Actual
2013	0

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

Communities are stressed more than ever with shrinking populations, shrinking budgets, and shrinking resources making it difficult to address aging transportation, water, waste water infrastructure; and building stock. West Virginia communities have an overwhelming number of abandoned, dilapidated properties, and a litter problem, and no budget to deal with these issues.

Municipalities struggle also with growing costs and complexities of storm water management, waste disposal, recycling, and reuse. These issues combined lower not only individual or community property value, but that of the entire region. Communities statewide engaged in updating comprehensive planning this year, and under these present conditions, more community leaders are looking for the low hanging fruit in terms of cost savings, that sustainability can offer. Communities need excellent, reliable information on how to make the best of what they've got, adapting resources to fit current or future needs, and implementing energy efficiency, healthier practices into their development and redevelopment efforts.

What has been done

Two agents participated in land use and planning certification workshops, so we could be of assistance to comprehensive planning efforts around the state.

We also actively engaged in planning two statewide conference focused on sustainable community and economic development and green/high performance building and community design.

We support the community and knowledge building efforts of the United States Green Building Council nationally and statewide, and we facilitate community-based and building owner based conversations on a variety of topics related to green building, smart growth planning, adaptive reuse, food safety, storm water mitigation strategies, etc. We often invite researchers and other Extension professionals to share their knowledge in new, diverse circles of influence.

Results

Six communities have included WVSU Extension agents in their revitalization efforts. Agents are or have provided technical assistance to five building owners and three developers interested in deconstruction, adaptive reuse, deep energy retrofits for commercial and residential properties, and brownfield redevelopment. More than 600 economic development professionals, builders, homeowners, commercial building owners, facilities professionals, architects, educators, engineers and community advocates attended Create WV and The Building Conference. As a result of our commitment to working with key stakeholders over the long term, statewide building code was updated and aligned so residential and commercial buildings, along with state funded projects must meet or exceed the 2009 International Conservation Code, saving hundreds of dollars per year in energy costs for a typical house or commercial building.

Leaders and nonprofit organizations are demonstrating their understanding of adaptive reuse and deconstruction as an alternative to demolition by asking for WVSU CED support in policy development related to dilapidated buildings, tax credits for renewable energy retrofits, sustainable planning, research, and high performance building and smart growth initiatives.

We have made a visible impact on the appearance of the region via continued litter sweeps and

beautification efforts. We are supporting a growing network of individuals who will continue this annual sweep in future years.

Residential and Commercial energy codes were adopted in 2013 to mandate that all new buildings be designed and built to meet the 2009 International Conservation Code.

4. Associated Knowledge Areas

KA Code	Knowledge Area
403	Waste Disposal, Recycling, and Reuse
605	Natural Resource and Environmental Economics
608	Community Resource Planning and Development

V(H). Planned Program (External Factors)

External factors which affected outcomes

- Natural Disasters (drought, weather extremes, etc.)
- Economy
- Appropriations changes
- Public Policy changes
- Competing Public priorities

Brief Explanation

In 2009, we began working with the USDA SET (Stronger Economies Together) program. Five agents were trained to facilitate SET principles in five counties. Between December 2012 and April 2013, our Community and Economic Development program lost two agents and a program leader. The former program champion left earlier in 2012. SET facilitation has not continued due to current staffing levels; however, the excellent skills of the current staff have shaped how we continue to assist communities with their strategic planning and regional economic development activities. Counties still receive assistance, support and expertise in strategic planning, just not officially as part of the SET program.

The budget cuts and struggling economy impacted current staffing levels. Losing four agents within a year's time meant that our CED program had to get lean if it was to remain an effective resource to small businesses and the push to create a culture of entrepreneurship and innovation statewide. We focused on positioning the WVSU Economic Development Center as a hub for programs and resources to be collected, created, and disseminated via broadband and mobile technology. We are now able to connect quality programs and people as never before.

V(I). Planned Program (Evaluation Studies)

Evaluation Results

There was a substantial increase in the number of participants across the region committed to regional planning activities; Deconstruction was officially adopted as an

alternative to demolition of dilapidated properties across nine counties, regional development authorities and multiple county commissions attended the last Create WV statewide conference, attending planning and training sessions focused on innovation economy strategies for rural and micropolitan communities.

We set a goal to have agents trained in formal land use and planning. Two CED agents completed the WVU Law Clinic's Sustainable Communities Land Use and Planning Certification Workshop in 2013.

Ninety two percent of business clients polled reported increased knowledge in planning, marketing and accessing finance, and basic business knowledge.

A growing number of businesses are connecting with WVSU Economic Development Center resources to learn how to develop and manage their own Website, including a shopping cart component for e-commerce, and social media platforms.

We are working on tracking increased revenue, industry sector, and the number of SBA certified small business start ups as a result of engagement with WVSU agents.

Key Items of Evaluation

92% of business clients polled reported increased knowledge in planning, marketing and accessing finance, and basic business knowledge.

We met our target of 30 graduates in 2013, and exceeded our placement goals by connecting more than 80% of our graduates in fulltime positions within the construction industry.