

**Penn State Cooperative Extension  
ANNUAL REPORT OF  
ACCOMPLISHMENTS  
AND RESULTS  
FY2004**

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Daney G. Jackson, Associate Vice President for Outreach  
Director, Penn State Cooperative Extension

[djackson@psu.edu](mailto:djackson@psu.edu)

College of Agricultural Sciences  
The Pennsylvania State University  
217 Agricultural Administration Building  
University Park, PA 16802  
Phone: 814-863-3438  
Fax: 814-863-7905

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## GOAL 1

**Through research and education, empower the agricultural system with knowledge that will improve competitiveness in domestic production, processing, and marketing.**

### Overview

Penn State Cooperative Extension accomplishments in Goal 1 for the last year of the five-year plans of work were highly satisfactory. Penn State is dedicated to the integration of research and extension, and faculty and county-based educators collaborate to develop and successfully implement the objectives of the five-year plans, seeking continuous input from citizens, local advisory groups and boards, the Pennsylvania Council of Cooperative Extension Associations, and the Penn State Agricultural Advisory Council. Pennsylvania farmers, like those in many other parts of the nation, face major challenges in maintaining and improving the profitability of their operations.

The market environment for key Pennsylvania commodities, such as dairy and livestock products, changes rapidly due to shifts in regional and national supply and demand. Ongoing management challenges affect Pennsylvania's food and agricultural system, and concerns about the safety and security of the system continue. Penn State Cooperative Extension addressed these challenges in Goal 1 through three overarching program goals: (1) improving the profitability and sustainability of agri-food system enterprises; (2) improving agricultural productivity and efficiency; and (3) increasing knowledge and skills to manage animal waste and nutrients. Within each of these areas, issues critical to a diverse clientele were addressed, particularly for underserved groups such as Anabaptists (Amish and Mennonites), groups for whom Spanish is the first language, and in regions of the state where the population is geographically dispersed.

Significant efforts were devoted by Cooperative Extension faculty and field-based educators to improving the business skills and risk management skills of farmers and agribusiness managers. Many programs, some offered in partnership with community institutions, teach the important aspects of business planning and entrepreneurship. Financial and production management analysis trainings and a range of crop insurance programs led to the use of strategies that reduce costs and increase profits. Additionally, effective personnel management is an increasingly important factor for the financial performance of farms and agribusinesses and for their ability to meet exacting quality and food safety standards.

The food system in the United States is increasingly a consumer-driven system, and programs on developing new market opportunities, the creation of new cooperative marketing ventures by farmers, value added activities and entrepreneurship help farmers improve profitability. Extension field-based educators and faculty report that 22,315 individuals engaged in programs related to profitability and sustainability of agri-food system enterprises; 8,489 indicated increased knowledge, skills and abilities related to profitable and sustainable operation of farm and agri-food businesses.

Food safety and biosecurity were increasingly important issues for Pennsylvania’s food producers, agribusinesses and consumers. Cooperative Extension staff and faculty used a variety of educational programs and events to improve understanding of potential threats posed by a range of animal diseases and the counter measures to be taken. As in previous years, educational effort was also directed to improving understanding and application of the Food Quality Protection Act (FQPA). A total of 5,048 persons participated in programs related to FQPA and 2,945 demonstrated incorporation of FQPA principles into their operations. An additional 18,474 persons took part in programs oriented to improving production management strategies with 8,750 demonstrating the application of increased knowledge and skills in this area.

Given the importance of animal agriculture in the Commonwealth of Pennsylvania, issues relating to animal waste and nutrient management continue to be a high priority for many farmers and for the public at large. A total of 1,218 persons attended programs related to animal waste and nutrient management, with 656 demonstrating increased knowledge and skills to manage animal waste and nutrients.

Highlights of successful Penn State Cooperative Extension activities and documentation of their benefits are noted in the following section. A complete listing of programs is available at <<http://pow.cas.psu.edu>>.

	<b>FY2004</b>
Human Resources (FTEs)	104.15
Fiscal Resources (Smith-Lever)	\$3,312,349
Fiscal Resources (match)	\$3,312,349

## GOAL 1

**Through research and education, empower the agricultural system with knowledge that will improve competitiveness in domestic production, processing, and marketing.**

**Planned Program – *Operating Agri-Food Systems for Profitability and Sustainability***

### **KEY THEME – Agricultural Profitability**

Cooperative Extension offers a variety of programs on business planning, financial planning and risk management for farm owners. Several examples are provided below.

#### **Business Planning and Management**

*a. Brief description of activity:*

The Tilling the Soil of Opportunity course provides participants with information on important aspects of business planning and entrepreneurship. The course is offered in partnership with community institutions, and local speakers, such as lending officers, participate in the program. The course was offered in 14 locations with 154 people participating in sessions across the state. To accommodate participants in one region, the training course has been revised from 12 weeks to a four-day format. Additionally, a training program is underway to enhance the skills of extension educators in the Northeastern region of the state which will enable them to develop business and market planning programs.

*b. Impact/Accomplishment:*

- Of the 22 individuals in one course, 16 have either started a business or plan to expand an existing business within six months; this business growth resulted in at least 10 new jobs being created in the first year; anecdotal information revealed that seven attendees are now doing business with each other; all attendees became clients of the Small Business Development Center and are eligible for services.
- 33% of attendees in another course completed a business plan.

*a. Brief description of activity:*

Business planning programs are offered through a variety of formats. For example, the annual Income Opportunities in Agriculture Conference was held for farmers and new land owners. Topics included an introduction to agricultural alternatives and to good business practices. Other opportunity programming for rural audiences and an example of direct assistance provided by many educators are described below.

*b. Impact/Accomplishment:*

- Evaluations of participant knowledge and understanding were conducted before and after the Income Opportunities conference.
  - Before the conference, 48% understood good business practices, 49% used good

- business practices, and 42% considered them important.
    - AFTER the event 100% understood good business practices, 85% intend to use good business practices and 89% considered good practices as important.
  - 4 families received direct assistance in the development of their business plans. These start up agriculture enterprises focused on agri-tourism and value-added agricultural products.
    - 18 people will be employed by the end of the first year of operation.
    - 24 will be employed by the end of year two.
  - 31 additional clients are developing business/marketing plans with several planning to begin operations in Spring 2005. More than 100 other program participants are evaluating various enterprise opportunities.
- a. *Brief description of activity:*  
Other financial management programs were delivered across the state for fruit and vegetable as well as dairy and crop operations.
- b. *Impact/Accomplishment:*
- A survey of one program was completed eight months after the program. Results indicated that:
    - 100% (N=9) completed a mission statement and an enterprise budget.
    - 78% (N=7) set business goals.
    - 100% (N=9) improved decision making and focused their business efforts.
  - In other programs, financial analyses resulted in dairy farming start ups, expansions and facility additions. In other cases, analyses resulted in significant downsizing or debt restructuring instead of business dissolution.

### **Agricultural Financial Planning and Risk Management**

- a. *Brief description of activity:*  
The Farm Finance Analysis Training course (FFAT) and the Production Management Analysis Training course (PMAT) were offered in Pennsylvania. PMAT was completely revised for 2004. The course now includes more information on basic production management that is applicable to all producers as well as an innovative self-assessment Production-Impact Plan to improve 2005 cash flows. The Farm Financial Analysis Training (FFAT) course was also revised to include the new Web Equity financial statement format adopted by the FSA in 2004.
- b. *Impact/Accomplishment:*
- 84 FSA farm loan office trainees participated in the Credit Finance Analysis Training.
  - 154 received FFAT and/or PMAT training.
  - An in-depth impact plan of 32 FSA borrowers involved in PMAT training projected a three year cash flow improvement of between \$450,000 and \$460,000.
  - Evaluations completed by operators indicate:
    - 75% of participants continue to keep track of business goals.
    - 80% of farmers use financial statements.
    - 90% of participants use enterprise budgets in their planning.

- a. *Brief description of activity:*  
 Volatile milk prices at the farm level make it very difficult for farm managers to budget expenses and control cash flow, which often leads to poor profitability. A team of field-based educators and campus faculty offered 23 farm management and risk management trainings for agricultural professionals across the state. The training was partially funded by a \$87,000 grant from the Pennsylvania Department of Agriculture (PDA) and the USDA's Risk Management Agency with industry partner support as well. The audience of more than 70 individuals included bankers, government officials, accountants, coop managers, etc. Topics included basic and advanced training, dairy risk management clubs, marketing clubs and marketing fundamentals.
- b. *Impact/Accomplishment:*
- 75 dairy producers determined their cost of production.
- a. *Brief description of activity:*  
 Cooperative Extension educators work closely PDA and USDA to expand Pennsylvania producers' participation in crop insurance. To demonstrate the popularity of the program, we highlight impact of one program.
- b. *Impact/Accomplishment:*
- State public policy change has increased the amount of state support to help producers pay crop insurance premiums.
  - Over the past 5 years, producers have received about \$125 million in loss payments.
  - Crop insurance usage within one club has increased to nearly 80% of the membership.

### **Agricultural Enterprise Development**

- a. *Brief description of activity:*  
 The Keystone Agricultural Innovation Center (KAIC), supported by grant funds from USDA-Rural Development, was created to provide education and technical assistance to farmers wishing to establish and maintain value-added agricultural activities. A network of three regional locations is coordinated and supported by faculty, extension specialists and food processing experts at the Pennsylvania Technical Assistance Program (PENNTAP) who work closely with extension educators to provide assistance statewide. A sample of the clients ranges from orchards, fruit growers, flour mills, milk bottling facilities, farm stands, greenhouses and various producers (pork, beef, bison, prawn, wine, grape, maple syrup) to the Chambers of Commerce.
- b. *Impact/Accomplishment:*
- 30 clients requested assistance to identify market options for value-added products. They created business plans to seek loan and grant opportunities.
  - Extension educators worked with PDA, Small Business Development Center, PENNTAP and producers.
    - Producers identified 3 main potential marketing alliance groups to increase their marketing power: wool and natural fiber yarns; dairy goat products; and

- farmstead and artisan cheeses.
  - 2 new ag-related businesses were established in 2004.
  - 4 other businesses expanded operations and extended their production seasons.
  - 5 producers reported improved profitability through a new farm market organized by Extension and a local economic development office.
  - 2 existing enterprises invested in a limited run of value-added orchard products after consultations.
  - Educators worked on a hog manure project involving a digester and phosphorus removal system. The facility owners were awarded an Energy Harvest Grant of \$327,000.
- c. *Source of Federal Funds—Smith-Lever 3b&c, State matching funds and USDA-Rural Development grant.*
- d. *Scope of Impact—State specific, Multistate Extension and Integrated Research and Extension.*

### **KEY THEME – Agricultural Competitiveness**

- a. *Brief description of activity:*  
Cooperative Extension educators work with producers and buyers to determine niche markets, develop local markets, develop new crops, and provide assistance in marketing and human resource management strategies.
- b. *Impact/Accomplishment:*
- The Williamsport Outdoor Growers Market
    - expanded membership and increased business by 25%.
    - increased collaboration with local agencies.
    - developed and distributed a direct farm market directory supported by a partnership.
  - As a result of programs, Anabaptist community members reduced insurance claims from \$110,000 to \$60,000 in just one calendar year. This represents a 54% reduction from the previous year.
  - 39 growers of the branded Pennsylvania Simply Sweet Onions® sought and received licenses in 2004, an increase of 20 growers compared with 2003.
  - One Amish farmer reported about \$8,000 profit from an investment of \$12,000 last year.
  - The Feeder Calf Marketing program (with West Virginia Cooperative Extension) allows small beef producers to sell their cattle in more competitive markets.
    - The sale price that producers in the program receive continues a trend of \$15.00/cwt increase over market value.
- a. *Brief description of activity:*  
Cooperative Extension educators provided educational sessions to help firms be more successful managers through Managing the Hispanic Workforce conferences on communicating in Spanish for farmers. More than 190 participants from New York

and Pennsylvania attended two conferences. More focused local training sessions were also offered.

*b. Impact/Accomplishment:*

- 91% of the respondents attending a conference indicated they plan to modify at least one management strategy in the next 3 to 6 months based on knowledge gained.
- In one operation, a significantly lowered somatic cell count occurred for the first time in 5 years, increasing the premiums the farmer received.
- A study of another farm found an improvement in animal health and a 17% increase in milking efficiency.

*c. Source of Federal Funds—Smith-Lever 3b&c, and State matching funds.*

*d. Scope of Impact—State specific, Multistate Extension (WVA, NY) and Integrated Research and Extension.*

## **Planned Program – Agricultural Productivity and Efficiency**

### **KEY THEME – Animal Health and Animal Production Efficiency**

#### **Agri-security and Emergency Preparedness**

*a. Brief description of activity:*

Cooperative Extension educators and faculty in the College of Agricultural Sciences continue an active role in developing educational programs and applied research projects for Agri-security and Emergency Preparedness within the Commonwealth. A vast majority of programs that have been conducted in the past year have had at least a small component that included agri-security. For example, members of several departments are active in statewide and/or national agri-security eradication projects e.g., *Salmonella enteritis* and avian influenza in poultry, *Salmonella Newport* and Johne's disease in cattle, and PRRS eradication program in swine. Educational and risk avoidance programs to include prion associated disease such as BSE, scrapie, and CWD have been presented in multiple forums around the state. Over 500 bulk milk samples were examined for food safety pathogens. This data was incorporated into a program to educate the public on the potential dangers of drinking raw milk, validated newer and more sophisticated diagnostic testing strategies, and helped dairy producers identify and begin to correct food safety and milk quality concerns on their farms. Additionally, workshops on composting as a means to eliminate or control pathogens were held in three locations in the state. One special composting session was held for 60 Pennsylvania Department of Agriculture (PDA) officials.

Cooperative Extension is expanding the network of professional relationships important for Emergency Preparedness. The opportunity to participate in regional counter terrorism training sessions has occurred as the result of training sessions held last year, and educators have participated in sessions and table top exercises coordinated by the regional counter terrorism groups. A special grant provided funding to develop training around mass injury catastrophe. Penn State Cooperative

Extension, Public Broadcasting and the Office of Rural Health partnered with the University of Pittsburg to design, develop, deliver and evaluate this specialized training. Six County Cooperative Extension offices served as host sites for the training. Additionally, Pennsylvania has initiated the creation of State Animal Response Teams (SART), based on the North Carolina model. Extension educators serve on the state advisory committee for SART. Finally, extensive flooding in parts of Pennsylvania as the result of two hurricanes created the need for county emergency response contacts to collect and distribute flood information material to the citizens of their counties. Flood information was created and posted on every county extension Web site. Individuals and agency personnel obtained valuable information directly from their local cooperative extension offices and from Web sites. Numerous disaster response sites were established in areas dramatically affected by flooding.

*b. Impact/Accomplishment:*

- Pennsylvania flock prevalence (*Salmonella enteritidis*) has decreased from 34% to 8% in the past five years.
- A critical partnership with personnel from the PDA has developed as a result of extension educators teaming with them in promoting and assisting with the development of the county specific volunteer-based SART program.
- In Armstrong County, the Planning and Development office gained a new recognition of the value of Cooperative Extension related to municipal issues for providing information that could be used by their county team as they proceeded with their flood recovery efforts. Cooperative Extension's quick response in providing resources brought a note of thanks immediately from the municipal services coordinator.
- Cooperative Extension West Nile staff assistance enabled prompt action by municipal employees to averted mass hatches of a West Nile vector.
- Widespread flooding along streams and low lying areas in the county established conditions that could have resulted in mass hatches of *Ochlerotatus trivittatus* mosquitoes, an aggressive insect and potential West Nile Virus vector.
- Significant economic loss was averted as a result of an extension educator intervening with local Emergency Management and the utility company to restore electricity to a swine operator. A farm with 2,400 hogs was without electricity for 56 hours after the hurricane. Power was restored within 90 minutes after the educator intervened.
- Extension educators collaborate with community organizations to promote safety and educate adults and youth on safety issues. For example, in one county, the Red Cross collaborated with extension on a *Disaster Preparedness* workshop to emphasize the importance of evacuation and home emergency plans. As a result of the program - 86% (N=60) indicated they would take one positive action to be better prepared for an emergency in the future.

### **Animal Production**

*a. Brief description of activity:*

Several small dairy producers have formed a buying group as well as sponsored corn silage variety trials. The group meets monthly and Extension provides up-to-date market and production information, coordinates and evaluates field trials and translates the findings for the producers.

*b. Impact/Accomplishment:*

- The group is cooperatively buying about \$1.5 million of inputs annually.
- Savings amounted to about \$60 per cow as a result of group purchases.
- Forty participants have been reducing grain costs and increasing milk production.
- Participants reported routinely obtaining about 20 ton or higher per acre corn silage yields compared to the county 15 ton average.
- Grain feeding rates decreased by about 5%.
- A local mill customer reported increased milk production by 4 pounds per day, while reducing feed costs by \$20 per ton.

*a. Brief description of activity:*

Cooperative Extension has expanded program offerings through the use of technology. For example, a Goat Meat Home Study Course is available and was offered via the Web. Educators also provide producers with information about structural and/or management changes that lead to improved productive and labor efficiencies and improved animal health and stress reduction. Information is provided through farm visits and various workshops.

*b. Impact/Accomplishment:*

- 100% (N=18) of the participants in the Web course indicated improvement in their vaccination program.
- Evaluations indicated that 98% (N=118) of participants in grass-fed beef workshops intend to apply information presented at the workshop.
- 23 farms visits resulted in suggested improvements. Only 18% of the ventilations were performing adequately.
- One 140-cow dairy operator moved his herd from old facilities into a new freestall facility. As a result, his milk production increased by approximately \$43,800 per year.
- 40% (N=10) of the producers visited indicated they made modifications to their tie stalls and have noticed improved cow resting time and improved cow comfort.
- 70% of the dairy producers returning evaluations (N=31) planned to start new or modify existing procedures/facilities that were discussed at a workshop.
- 71% of participants at a calf and heifer housing workshop made changes to facilities or management or recommended changes to clients.
- 65% (N=20) of the producers visited indicated they made improvements based on the suggestions and reported improved freestall use and performance.

*c. Source of Federal Funds—Smith-Lever 3b&c, and State matching funds.*

*d. Scope of Impact—State specific and Integrated Research and Extension.*

**KEY THEME – Food Quality and Protection Act**

*a. Brief description of activity:*

The Food Quality Protection Act (FQPA) substantially changes the way food safety is determined and pesticides are regulated, and growers need to be aware of the changes

in pesticide law and usage. Applicator training was provided on new labeling, the proper use and handling of pesticides and changes occurring in the field. More than 800 copies of the Pesticide Education Program's FQPA fact sheets were distributed in FY2004.

Crop profiles for several minor use crops in Pennsylvania are in the development stages. The development of a Strategic Pest Management Plan for mushrooms is another significant undertaking underway, which will help provide a clear picture of the pest management needs for the mushroom industry. This 'grower driven' plan is especially significant because Pennsylvania produces 55 percent of the nation's mushroom crop, and mushrooms are the largest cash crop in Pennsylvania. Additionally, educators are working cooperatively with other specialists and growers in the development of a North East Strategic Pest Management Plan for sweet corn.

*b. Impact/Accomplishment:*

- More than 20 training programs were conducted for approximately 900 applicators. Survey data collected from growers include detailed pesticide use and pest management practice information, which is collected by the Pennsylvania division of the USDA's National Agricultural Statistics Service.
- Two workshops served as a train-the-trainer program for approximately 50 agricultural science instructors in the Commonwealth and across the nation. Workshop participants received Pesticide Safety Resource Kits, which included materials that visually demonstrated the concept of the FQPA risk cup decision-making process.

*a. Brief description of activity:*

Pesticides play a critical role in production agriculture today. Applicators need continuing education to maintain pesticide license. Educators provide opportunities for producers to learn about pest management and pesticide safety practices through various educational meetings, clinics and conferences.

*b. Impact/Accomplishment:*

- Over 6,000 licensed pesticide applicators received training.
- 82% indicated attitude change on pest management subjects.
- 79% reported increased skills and ability.
- Of those attending previous training
  - 62% reported using new pest management practices as a result of training.
  - 44% reported better pest control results.
  - 32% indicated they saved money as a result of training.
  - 50% reduced pesticide use.
- One cooperator saved 32 pounds of insecticide and 10 gallons of fuel (worth \$276) by not having to spray as often. In addition, this grower averted about \$500 worth of damage by knowing precisely when to spray.
- One sweet corn grower eliminated two early season sprays reducing in-season spray costs nearly 20%.
- Another grower reported reducing insecticide sprays nearly 60% as a result of the program.

- c. *Source of Federal Funds—Smith-Lever 3b&c, and State matching funds.*
- d. *Scope of Impact—State specific and Integrated Research and Extension.*

### **KEY THEME – Plant Production Efficiency**

Cooperative Extension faculty and field-based educators provide educational programs to enhance agronomic production for sustainability and profitability. Issues include diseases, insects, pesticide use and variety selection. A few examples are listed below.

a. *Brief description of activity:*

Pennsylvania's vegetable producers grow 5,500 acres of tomatoes and 14,000 acres of potatoes annually. The most important diseases affecting these crops are early blight and late blight. Cost of a regular preventive fungicide program to control blights for one season is high, averaging about \$112/A for tomatoes and \$55/A for potatoes. To save these crops from destruction, growers need to know when fungicide coverage is necessary relative to current environmental conditions.

Disease forecasters (FAST and TOMCAST for early blight; BLITECAST for late blight) have been implemented within Pennsylvania. Implementation involved the establishment of a 10-site environmental monitoring network, automating access of environmental data used to run the forecasters, development of effective ways (graphs, calendars, maps) to present disease forecast information, and use of rapid-dissemination technologies (1-800 phone messages, fax, internet) to get information to growers promptly enough to affect day-to-day decisions about blight control.

b. *Impact/Accomplishment:*

- During 2004, the program helped make it possible for growers to reduce fungicide use by an average of at least 44% for early blight control, a savings equivalent to about 98 tons of fungicide used each year in Pennsylvania resulting in reduced cost of production for producers, reduced exposure of farm and field workers to pesticides, reduced pesticide applied to food crops and reduced pesticide released into the environment.
- Since weather was extremely favorable for late blight, the primary benefit was that the program indicated when protective sprays were most important to save some fields from total loss. Grower use of the forecast program resulted in saving many fields from complete loss.

a. *Brief description of activity:*

Faculty members and extension educators were involved in the task of responding to concerns resulting from flooding in parts of Pennsylvania brought on by hurricanes this fall. A professor of agronomy led the College of Agricultural Sciences' efforts to provide research-based information to producers and agencies in a timely fashion. Information and management recommendations were posted on several Web sites and shared with agronomy and dairy educators across the state. Faculty and educators

brought together local, state and federal agency personnel to discuss concerns related to providing guidance and recommendations on marketing grain crops that had been exposed to flood waters. The meeting included PDA and other agency staff representatives (e.g., DEP, FSA and FSIS), several key grain dealers and representatives of farm groups.

*b. Impact/Accomplishment:*

- Penn State recommendations were used for a PDA press release for producers on the issues.
- A handout summarizing the proper handling of flood-damaged corn was developed based on information from key contacts at PDA and the Food and Drug Administration.
- A second news release was developed to get the latest information out to the agricultural community.

*a. Brief description of activity:*

Preservation of soils is critical to the sustainability of production agriculture. No-till crop production offers improved soil quality, better yields and labor advantages during the growing season. Educational opportunities are offered to producers across the state through programs such as field days, crops days, clinics and conferences. More than 600 growers attended the Southeast Pennsylvania Crops Conference which was held in 4 regional locations. Additionally, 75 people attended the Southwest Pennsylvania Tillage Conference, a cooperative effort of Cooperative Extension, USDA-NRCS and the Conservation Districts to educate farmers about the benefits of minimum or no-tillage soils management.

*b. Impact/Accomplishment:*

- Southeast PA Crops Conference evaluations indicated:
  - 87% of participants indicated they changed practices as a result of attending previously.
  - 38% (N=55) of participants responding to a follow-up survey indicated their bottom line was positively effected as a result of attending.
- More than 70 farmers attended a no-till planter and drill clinic. A post-meeting survey indicated:
  - 84% (N=31) of attendees plan to make adjustments to their corn planters and drills as a result of attending.
  - 55% of the attendees expect a yield improvement as a result of attending.
- Two annual field days in the Capital Region attracted about 100 participants.
  - 78% (N=89) reported they were likely to try or stay with no-till in the future.
  - 90% (N=109) of participants reported they now think no-till may work better than they thought it would in the region.

*c. Source of Federal Funds—Smith-Lever 3b&c, and State matching funds.*

*d. Scope of Impact—State specific and Integrated Research and Extension.*

## **KEY THEME – Small Farm Viability**

*a. Brief description of activity:*

“High tunnel” technology offers small/family farmers the opportunity to keep the family farm, increase cash flow and profitability, decrease dependence on off-farm jobs, and produce high quality, added-value horticultural crops. A one-day meeting was held for growers in southeastern Pennsylvania and New Jersey on the technology. Participants attended presentations, met with specialists and received a copy of the Penn State High Tunnel manual. The event was co-sponsored by the Pennsylvania Vegetable Growers Association.

*b. Impact/Accomplishment:*

- 35 growers, whose combined high tunnel production in 2004 included 4,010 sq. ft., attended the meeting.
- 47% of attendees indicated they plan to build a high tunnel in the 2005 growing season, and 41% indicated they plan to grow a new crop in a high tunnel as a result of attending the meeting.

*c. Source of Federal Funds—Smith-Lever 3b&c, and State matching funds.*

*d. Scope of Impact—State specific and Integrated Research and Extension.*

## **Planned Program – Animal Waste and Nutrient Management**

### **KEY THEME – Nutrient Management**

*a. Brief description of activity:*

Public concern regarding livestock production has intensified in recent years. Hog production appears to draw most of the criticism, due in part to highly publicized manure spills as well as the emission of offensive odors. Other livestock enterprises are not free from public scrutiny. While livestock producers have been increasingly proactive in adopting best management practices in regard to manure handling and odor and fly control, much of the farming community has not yet developed strategies for minimizing odor emissions and for optimizing manure utilization. Faculty and extension educators assist producers in adopting best management practices, not only to improve public opinion, but also to protect the environment. Through various programming efforts, educators facilitate the adoption of mandatory and voluntary nutrient management plans and provide livestock producers with management strategies aimed at minimizing the loss of manure nutrients.

*b. Impact/Accomplishment:*

- 40 livestock and poultry producers participated in nutrient management certification training, and 75 commercial and public planners participated in the training. A total of 102 individuals participated in advanced phosphorus training.
  - 10 producers who had Concentrated Animal Operations (as defined by PA Act 6) developed a nutrient management plan.

- 2,118 other producers developed approved plans on a voluntary basis.
  - 170 participants attended the Manure Hauler Certification classroom training or calibration workshops. An evaluation was conducted using 41 of these participants.
    - 40 out of 41 people taking the certification test for the first time scored a passing grade of 80% or higher.
    - 123 individuals participated in one of the field days.
  - 2 major swine integrators (annual production approximately 1,000,000 market hogs), at least 4 major poultry integrators, and approximately 200 dairy producers use feed formulations to minimize nutrient excretion.
- a. *Brief description of activity:*  
 To respond to increasing complaints about flies around major animal facilities an inter-departmental and multi-county team was formed including participants from industry. A program was developed consisting of a data collection tool (survey) that allowed for the appraisal of conditions both from the complainant and production units. As data collection is executed, best management practices and other information pertaining to fly control is given. A written report is sent back to all parties (if requested) detailing any clear findings. Extension activities include the monitoring of fly numbers at the source and in the nearby community, as well as providing responses and information to the complainant and to production unit managers.
- b. *Impact/Accomplishment:*
- 29 site visits (including a dairy and a municipal sewage treatment plant) have been made by the team resulting in actions taken to examine the source of fly outbreaks (blooms). For the first time in three years one complaint involved one farmer complaining of excessive fly counts from another farm in the neighborhood.
- c. *Source of Federal Funds—Smith-Lever 3b&c, and State matching funds.*
- d. *Scope of Impact—State specific and Integrated Research and Extension.*

## GOAL 2

**To ensure an adequate food and fiber supply and food safety through improved science-based detection, surveillance, prevention, and education.**

### Overview

Penn State Cooperative Extension accomplishments in Goal 2 for the last year of the five-year plans of work were highly satisfactory. Penn State is dedicated to the integration of research and extension, and faculty and county-based educators collaborate to develop and successfully implement the objectives of the five-year plans, seeking continuous input from citizens, local advisory groups and boards, the Pennsylvania Council of Cooperative Extension Associations, and the Penn State Agricultural Advisory Council. As outlined in the plan of work, Cooperative Extension emphasizes the overarching goal of developing a systems approach to food safety. Within this area, sub-goals and objectives guide Cooperative Extension faculty and field-based educators in solving issues critical to a diverse clientele.

Food safety is a serious concern throughout the food system. Any solutions must take a broad, farm-to-table approach and must involve farmers/producers, food processors, food handlers, food retailers, consumers and government regulators. Penn State Cooperative Extension provided assistance and specialized training to groups such as livestock, fruit, vegetable and other crop producers; meat, poultry and other food processors; retailers, restaurant owners and workers, and other volunteer cooks, as well as food safety practices for consumers. All over Pennsylvania, several thousand practitioners were trained, tested and certified, who in turn, trained additional people or changed their behavior. The result was an increased awareness of food safety practices throughout the food system, and a safer food supply for the consumer.

Cooperative Extension educators continue their training efforts to help clients in food establishments meet the requirements of the Pennsylvania Food Service Employee Certification Act. Since implementation of the Statewide Food Safety Certification Program in fall 2001, approximately 7,000 students have completed the program, and the results of this training are outstanding. Excellent progress on reaching underserved audiences with food safety programming has been made, particularly in accommodating non-English speaking audiences.

By keeping a broad, farm-to-table focus when applying solutions to our food safety problems and taking careful, multiple steps, we can ensure that real progress will occur. Extension educators are actively involved in providing training for food producers and processors related to food safety and sanitation practices. Programs for other types of food certification, such as Beef and Pork Quality Assurance are offered. In all, 1,293 participants were reported to have received these types of certification.

Additionally, county-based educators offer an array of food safety programs for non-profit organizations that serve and distribute food. They also reach very diverse

audiences, from kindergarten and elementary students to senior citizens. This fiscal year, a total of 12,419 individuals participated in programs related to food safety, and 7,808 participants demonstrated increased knowledge and understanding of practices to ensure safety of the food system. A total of 5,346 participants completed state-approved curricula and passed certification/recertification requirements.

Highlights of successful Penn State Cooperative Extension activities and documentation of their benefits are noted in the following section. A complete listing of programs is available at <<http://pow.cas.psu.edu>>.

	<b>FY2004</b>
Human Resources (FTEs)	11.06
Fiscal Resources (Smith-Lever)	\$313,772
Fiscal Resources (match)	\$313,772

## GOAL 2

**To ensure an adequate food and fiber supply and food safety through improved science-based detection, surveillance, prevention, and education.**

### **Planned Program – *A Systems Approach to Food Safety***

#### **KEY THEME – Food Quality**

Food safety is an issue that needs the attention of everyone involved in the food system, from producers, processors, and government regulators to food handlers, food retailers, and consumers. By keeping a broad, farm-to-table focus when applying solutions to our food safety problems and taking careful, multiple steps, we can ensure that real progress will occur. Cooperative extension educators provide programming relevant to a variety of constituents such as livestock, fruit, vegetable and crop producers; meat and poultry processors; professional food processors and volunteer cooks, as well as consumers.

#### **Livestock Quality Assurance**

*a. Brief description of activity:*

Beef, dairy and swine producers have participated in Quality Assurance programs to enhance the quality and safety of animal products to eliminate hazards such as antibiotics from milk and meat produced in Pennsylvania. Nearly 1,300 individuals received certification through Beef Quality Assurance (BQA), Pork Quality Assurance (PQA), Process Control or similar certification trainings. Meat Animal Quality Assurance (MAQA) programs are offered to 4-H youths across the state, with parents and youths receiving certification. More than 3,200 youth have participated in these trainings during the year.

*b. Impact/Accomplishment:*

- Truckers Quality Assurance and PQA educational efforts of an education committee of the Animal Handling Advisory Board resulted in a 53% reduction in the number of deceased and/or crippled hogs delivered to the processing plant from 2001 to 2004.
- An animal handling audit at the processing plant in 2004 earned a near perfect score of 99%, a tribute to the educational programs completed by swine transporters.
- A 2004 USDA report revealed that annually 70,000 more hogs are arriving at packing plants alive because of improved animal handling.
- 52% (N=25) of BQA participants in one group increased their implementation of the 15 recommended practices by 7 to 10 compared to before training.
- A PQA survey of 78 swine farms indicated high levels of compliance in areas noted:
  - 86% (N=78) of producers reported identification system appropriate to comply with proper drug withdrawal.
  - 96% (N=74) indicated administering injections in proper location.
  - 86% (N=74) utilize appropriate needles.
  - 92% (N=78) use equipment for moving hogs that minimizes stress.
- 93.3% (N=253) of 4-H youths participating in MAQA training reported having project animals properly identified and reading labels of drug products before use.

## **HACCP Training for Processors**

### *a. Brief description of activity:*

Introductory and advanced HACCP programs are offered to meet the needs of meat and poultry processors. Evaluations of these programs indicate that participants increase levels of knowledge about HACCP concepts and benefit from the interchange of information among attendees.

### *b. Impact/Accomplishment:*

- Participants indicate they are better equipped to make changes to their HACCP plans as a result of attending the programs.
- Participants have had an examination pass rate of >95%, since 2001.

### *c. Source of Federal Funds—Smith-Lever 3b&c, and State matching funds.*

### *d. Scope of Impact—State specific and Integrated Research and Extension.*

## **KEY THEME – Food Handling**

### **Home Food Preservation**

#### *a. Brief description of activity:*

Many consumers in Pennsylvania continue to preserve food at home, and they need to understand the importance of using up-to-date information to preserve food safely for their families. Extension educators provide current information through a variety of educational programs, as well as news releases, fact sheets, exhibits and displays.

Home food preservation was featured at two major College events this year. At one event, the Pennsylvania Farm Show, visitors participated in an interactive quiz which provided an opportunity to educate participants on correct methods. Evidence from the estimated 400 visitors who participated in the quiz shows that consumers have a great deal of incorrect information about home preservation methods. For example, less than one-half of the participants knew how to properly prepared food for storage and only 40% knew to add lemon juice to properly acidify tomato products.

#### *b. Impact/Accomplishment:*

- At the conclusion of one hands-on workshop, 95% (N=76) of participants reported increased knowledge. Results of a follow-up evaluation indicate that
  - 82% of participants now add lemon to tomatoes when canning.
  - 76% use proper jars and equipment.
  - 71% plan to follow only approved recipes.
- Participants attending another workshop anticipated canning 172 quarts of food and sharing the information with others. As a result of the program, participants indicated confidence in the following:
  - 82% determining the type of pack to use - raw or hot.
  - 78% determining correct processing times.
  - 80% plan to buy and use a pressure canner and use tested recipes.

## **Hunter Food Safety**

### *a. Brief description of activity:*

Each year over 1 million hunting licenses are issued to Pennsylvania residents. It has been demonstrated in research by extension faculty at Penn State that pathogens such as *E. coli* 0157:H7 exist in the deer population and other wildlife species. County extension educators offered numerous game meat programs and reach many individuals through news media and the Wild Game Meat Display at various venues. Additionally, 800 pocket field guides have been distributed to meat processors and hunting license sellers for distribution.

### *b. Impact/Accomplishment:*

- 72% (N=102) of participants indicated they would use vinyl gloves when eviscerating their deer to prevent transmission of infectious diseases.
- 49% (N=102) of participants indicated they would not wash the insides of the carcass down, as in the past, to prevent the spread of E-coli over the entire carcass surface.

### *c. Source of Federal Funds—Smith-Lever 3b&c, and State matching funds.*

### *d. Scope of Impact—State specific and Integrated Research and Extension.*

## **KEY THEME – Food Safety**

### **Training for Professional Food Processors**

#### *a. Brief description of activity:*

As mandated by the Pennsylvania Department of Agriculture, one person from each Pennsylvania food establishment shall complete certification for the Pennsylvania Food Service Employee Certification Act by July 1, 2003. Penn State developed the Statewide Food Safety Certification Program (SFSCP), which consists of a 16-hour workshop taught by Cooperative Extension field-based educators. In several counties, the ServSafe<sup>®</sup> program is offered collaboratively with Penn State Continuing Education and Penn State campuses and/or with local organizations. To serve a wider ethnic base of food preparers, courses are offered in Spanish, Italian and Chinese. Courses are offered also to food preparers in schools, child-care, hospitals and nursing homes. Since fall 2001, approximately 7,000 people have participated in the ServSafe<sup>®</sup> program, with most educators reporting nearly 98% pass the exam. Evaluations from several programs are noted below.

#### *b. Impact/Accomplishment:*

- 113 food service managers and employees attended training in one county. All participants plan to convey information to their employees, reducing food borne illness for 14,000 customers due to improved handling practices.
  - 82% of participants plan to make at least one change to enhance food safety.
- In a survey of 127 participants in another area, 90% (N=43) indicated they are likely to use food thermometers to check food temperatures after attending class.

- In another survey of 75 people, 100% indicated they wash their hands often during the workday and 99% have shared the skills learned with others.
  - A trainee from one county, employed at a Chinese restaurant closed for safety violations, attended a workshop delivered in the Chinese. Subsequently, the restaurant's food safety issues were addressed and the establishment reopened.
- a. *Brief description of activity:*  
 Pennsylvania is the largest food processing state in the Northeast, with more than 1,000 food manufacturers and processors. The safety of good products often depends on front line employees who frequently get little or no formal training in food safety. Certified extension agents are now offering an on-site Front Line Food Safety Training program that addresses the specialized needs of dairy, meat and poultry, fruit and vegetables, cereals, and confectionery processing. This on-site training, which just began, simultaneously boosts the return on the company's investment, by saving travel and lost-time costs associated with sending employees to a workshop.
- b. *Impact/Accomplishment:*
- 75 employees of one company received on-site training in personal hygiene and on major factors affecting growth of microorganisms.
    - 100% (N=75) learned the proper hand washing techniques.
    - 100% (N=75) increased their knowledge of food safety techniques by 20%.

### **Cooking for Crowds – Training Volunteer Cooks**

- a. *Brief description of activity:*  
 Most small Pennsylvania communities are served by volunteer fire departments. Many other non-profit organizations serve dinners as fund raising projects so there are many volunteers who cook meals for large groups who have had no training in food safety. Cooking for Crowds was designed for these volunteer cooks. The program is offered in many locations across the state.
- b. *Impact/Accomplishment:*
- 25 volunteers from 13 non-profit organizations, estimated to serve 60,000 people, learned safe food handling techniques. Pre- post-tests results indicated an 18.7% knowledge gain.
  - Post-course evaluations of 79 attendees (55 responses) indicated that participants increased knowledge in the following content areas:
    - 78% in controlling time and temperature; 62% in preventing cross contamination; 56% in food-borne illness; 52% in cleaning and sanitizing.
  - A 3-month follow-up survey of 25 people (13 responses) revealed that 78% of the respondents changed or implemented safety practices in the safe handling of foods, cooking at proper temperatures, proper hand washing techniques, etc. Two of the trainees subsequently trained a total of 17 others in their organization.
- c. *Source of Federal Funds—Smith-Lever 3b&c, and State matching funds.*
- d. *Scope of Impact—State specific*

## GOAL 3

**Through research and education on nutrition and development of more nutritious foods, enable people to make health-promoting choices.**

### Overview

Penn State Cooperative Extension accomplishments in Goal 3 for the last year of the five-year plans of work were highly satisfactory. Penn State is dedicated to the integration of research and extension, and faculty and county-based educators collaborate to develop and successfully implement the objectives of the five-year plan of work, seeking continuous input from citizens, local advisory groups and boards, the Pennsylvania Council of Cooperative Extension Associations, and the Penn State Agricultural Advisory Council. As outlined in the plan of work, Cooperative Extension emphasizes the overarching goal of increasing healthy food choices among Pennsylvania adults and youths. Within this area, sub-goals and objectives guide Cooperative Extension faculty and field-based educators in solving issues critical to a diverse clientele.

Pennsylvania has the largest rural population and the second-largest senior population (16 percent) in the U.S. The population is largely White (88 percent) with increasing numbers of African Americans and Hispanics. Diseases that have lifestyle antecedents—heart disease, cancer, cerebrovascular disease, and diabetes—are among the six leading causes of death in Pennsylvania. According to the BHRFS of 1996, a significant portion of residents are physically inactive, overweight, not eating fruits and vegetables five or more times a day, and have elevated blood cholesterol, all predisposing risk factors for chronic diseases. Many Pennsylvanians are not following the principles embedded in the USDA Food Guide Pyramid and balancing caloric intake with regular physical activity. Cooperative Extension faculty and field-based educators create and offer a variety of programs that help people adopt lifestyle practices that promote health and wellness.

The incidence of diabetes increased by 33% during the last few years. On a different front, about one in two women and one in eight men will eventually develop osteoporosis, a highly debilitating disease. Therefore, prevention of both diseases is critical. Similarly, all adults and children must practice healthful eating in order to maintain or increase their wellness and health. The rates of obesity and overweight in Pennsylvania adults and children are also increasing dramatically. There is an urgent need within the state for sound nutrition and health information and training for health care and education professionals.

Educational programs addressing diabetes, obesity, osteoporosis, and diet and health were offered to a large number of Pennsylvania residents. As a result, thousands of people increased their knowledge about these diseases, understood better the prevention practices, and became more confident in making the proper diet and lifestyle changes. Similarly, thousands of participants increased their awareness of a more healthful diet and adopted diets consistent with dietary guidelines for good health.

Cooperative Extension has made significant progress in providing educational programming opportunities that increase healthy food choices among Pennsylvania adults and youths. During this fiscal year, 31,811 individuals participated in programs on nutrition across the life cycle. Of those participants, 13,906 demonstrated the use of the food guide pyramid and/or the nutrition facts panel to make healthy food choices.

Highlights of successful Penn State Cooperative Extension activities and documentation of their benefits are noted in the following section. A complete listing of programs is available at <<http://pow.cas.psu.edu>>.

	<b>FY2004</b>
Human Resources (FTEs)	15.20
Fiscal Resources (Smith-Lever)	\$405,548
Fiscal Resources (match)	\$405,548

## GOAL 3

**Through research and education on nutrition and development of more nutritious foods, enable people to make health-promoting choices.**

### **Planned Program – *Diet, Nutrition and Health***

#### **KEY THEME – Human Health and Human Nutrition**

##### **Childhood Overweight and Obesity**

*a. Brief description of activity:*

Creating Health is an outreach program based on a partnership among WPSX Public Broadcasting, Penn State Cooperative Extension and three colleges at Penn State. Created in 2001, it links a half-hour TV program on a specific health topic to community activities that are conducted by extension educators. The third program in the series, “Preventing Childhood Overweight and Obesity: Parents Can Make a Difference,” was launched in September 2003. The first Creating Health program successfully focused on preventing osteoporosis and the second on diabetes.

Cooperative Extension is partnering with The Pennsylvania Alliance for Nutrition and Activity (PANA) to build statewide capacity for developing an environment to support and promote active lifestyles and healthy food choices. The PANA initiative incorporates a broad range of activities to address obesity, including policy and environmental changes in the community, improving school health practices and promoting healthy weight in healthcare settings. The initiative operates through a diverse coalition of partners from state agencies, universities, non-profit organizations, professional associations, and the business community. Cooperative Extension facilitates Community Champion activities with schools and communities and hosts the satellite training conferences in over 30 sites across the state. Each school district completed an online assessment and 100 schools received \$2,000 mini-grants to address obesity and physical health. Evaluations of several programs are noted below.

*b. Impact/Accomplishment:*

- Over 3,000 students in grades K-5, participated in 10 minutes of moderate to vigorous physical activity integrated into the daily classroom schedule throughout the year.
  - 100% (N=1,991) of the students increased the amount of time they were physically active on the days they had the classroom activity.
  - 1,650 students participated in the sampling of fruits and vegetables per food service records.
  - 90% (N=80) listed two things they planned to do to improve their eating habits.
  - A school dietitian modified items offered to students: decreased cookie size, added peanut butter, apples, yogurt and string cheese to the menu. Student approval was reflected in cafeteria sales.
  - 83% of teachers returning surveys indicated they plan to continue the program.

- 91% of teachers would recommend the program to other teachers.

## **Diabetes**

### *a. Brief description of activity:*

The incidence of diabetes has increase 33% in the last several years so prevention is critical. Extension educators reach diverse audiences from seniors to high school students with programs related to diabetes prevention and management. For example, 64 health care aides were trained to help their clients. Many programs are presented in collaboration with community partners. Additionally, several educators have secured grants for video teleconferencing equipment and also are evaluating the effectiveness of this delivery method. Over 900 participants across the state participated in an evaluation, results of about 500 participants who completed consent forms are highlighted below.

### *b. Impact/Accomplishment:*

- 69%-71% (N=464-480) of the participants indicated they were ‘moderately’ or ‘very’ likely to take preventive actions in the next 3 months: have glucose tested, and change eating habits and physical activity to reduce the risk of diabetes.
- 36% (N=364) listed two changes they plan to make in their diet in the next 3 months.
- 63% (N=364) listed one change they plan to make in their diet in the next 3 months.

## **Food and Nutrition Life Skills Across the Life Cycle**

### *a. Brief description of activity:*

Many programs conducted by extension educators target underserved audiences, including children of low-income families and limited resource elderly. These programs have resulted in positive knowledge and behavior change toward healthful eating. For example, nutrition sessions for preschoolers at 3 child care centers reached 674 children and adults. A food inventory was conducted prior to the session and at the conclusion of the sixth session. Several other positive results of adult and youth evaluations are also noted below.

### *b. Impact/Accomplishment:*

- A pre-intervention lunch inventory for the children in child care centers indicated that 15% had one serving of fruit in their lunch. After the classes, 39% had at least one serving of fruit.
- 88% of the parents indicated children were now more willing to try different fruits.
- 97% (N=35) of the participating seniors increased their understanding of the dangers of high blood pressure.
- 59 participants in a nutrition and weight management program lost a total of 357 pounds.
- 100% (N=414) of youth indicated they plan to change one “unhealthy behavior” related to healthy eating or physical exercise as a result of attending the program.

### *c. Source of Federal Funds—Smith-Lever 3b&c, and State matching funds.*

### *d. Scope of Impact—State specific and Integrated Research and Extension.*

## GOAL 4

**Enhance the quality of the environment through better understanding of and building on agriculture's and forestry's complex links with soil, water, air, and biotic resources.**

### Overview

Penn State Cooperative Extension accomplishments in Goal 4 for the last year of the five-year plan of work were very satisfactory. Penn State is dedicated to the integration of research and extension, and faculty and county-based educators collaborate to develop and successfully implement the objectives of the five-year plan of work, seeking continuous input from citizens, local advisory groups and boards, the Pennsylvania Council of Cooperative Extension Associations, and the Penn State Agricultural Advisory Council.

Pennsylvania's water and forest resources are essential to our society's consumptive needs and environmental settings. These resources support water usage within our population, provide a source of raw materials for economic pursuits and serve as an ecological reserve for our environment and society's spatial needs. The management of this complex resource base is the focus for several key Cooperative Extension programs designed for resource owners and the general public. As outlined in the plan of work, Cooperative Extension emphasizes two overarching goals: (1) improving watershed management to enhance water quality; and (2) improving sustainability of Pennsylvania forests. Within each of these areas, sub-goals and objectives guide Cooperative Extension faculty and field-based educators in solving the issues critical to a diverse clientele.

The maintenance of water quality within private systems is of strategic importance to many rural populations. This includes engineering and resource issues tied to water supply systems, septic systems and farm ponds. Collectively, these water-resource issues have been addressed through a collaborative set of Cooperative Extension programs involving news releases, publications, water testing and educational sessions relating to supply systems and watershed awareness. Water-resource information was provided to 5,761 people through face-to-face educational programs. As a result, educators identified 1,794 individuals who took action to protect or enhance water quality.

Forest landowners need to understand the dynamics of forest growth and the ecological relationships inherent to these biological settings. Timber harvesting requires landowners to understand this selection process and the allied marketing process, while, at the same time, how to maintain and, potentially, build a forest's integrity and sustainability through time. Cooperative Extension educators have created an assembly of programs that instruct forest landowners on the growth mechanism inherent to forests and the intricate nature of this biological process. These programs and instructional materials provide an overview of silvicultural and management decisions confronting property owners through time. Extension personnel also recommend additional sources of professional assistance to landowners in need of detailed planning. Cooperative

Extension programming in private forest management and sustainability reached 2,053 adult participants. Of these participants, 1,427 indicated an increase in knowledge and skills needed to apply the practices and principles to ensure private forest management and sustainability. Timber harvesting is approached as an educational topic for landowners and loggers. These programs identify the timber products in demand by commercial markets, their measurement and value, and the subsequent need for insuring regeneration, sustainability, and continuity within the forest. The dynamics and complex nature of forest systems also serve as the basis for several youth education programs provided by Cooperative Extension. These programs reached 2,278 youth participants. Of these participants, 641 demonstrated their knowledge of basic forestry skills through structured events.

Highlights of successful Penn State Cooperative Extension activities and documentation of their benefits are noted in the following section. A complete listing of programs is available at <<http://pow.cas.psu.edu>>.

	<b>FY2004</b>
Human Resources (FTEs)	15.41
Fiscal Resources (Smith-Lever)	\$485,271
Fiscal Resources (match)	\$485,271

## GOAL 4

**Enhance the quality of the environment through better understanding of and building on agriculture's and forestry's complex links with soil, water, air, and biotic resources.**

### **Planned Program – *Watershed Management to Enhance Water Quality***

#### **KEY THEME – Water Quality**

*a. Brief description of activity:*

Pennsylvania is home to abundant water resources including 80 trillion gallons of groundwater, thousands of private ponds and reservoirs and 43,000 miles of streams. The state's large rural population utilizes over one million private water systems and about 1.5 million on-lot septic systems. Extension programs and resources are targeted at proper management of private water systems, ponds, on-lot septic systems and increasing understanding of watersheds and groundwater. Programs have been delivered in collaboration with federal, state and local government agencies; civic groups; schools and watershed organizations. A wide variety of program delivery methods are used including satellite downlinks, web pages, web casts, displays, publications, face-to-face programs, site visits, newspaper and radio stories and television programs.

The Water Resources Extension Web site continues to provide clients easy access to valuable educational resources and links to other sources of information. The site includes information on drinking water quality, pond management, water conservation and drought, and watershed management. It was visited 4,728 times in FY2004, a significant increase over the number of visits in 2003.

A new statewide Master Well Owner network was initiated this year, and Master Well Owner volunteers are being trained throughout Pennsylvania in 2004 and 2005. Training workshops for the well owner volunteers focus on topics such as well construction, well maintenance, water testing and treatment, septic systems and water conservation. These volunteers from each region will distribute education and resources to private water supply owners across the state.

*b. Impact/Accomplishment:*

- Water Resources Web site visits represent a large increase over the previous year.
  - An on-line web-page evaluation indicated:
    - \* 91% (N=32) found the site helpful.
    - \* 97% (N=32) had taken some action as a result of visiting the web site.
- 97 Master Well Owner volunteers were trained in 32 counties of the state. The volunteers have, in turn, educated 454 private water supply owners. This is an impressive result since many of these volunteers were not trained until very late in FY2004.

- Private Water Systems: Educators also provide drinking water education through Safe Drinking Clinics and home water testing. In September 2004, record precipitation from the remnants of hurricanes produced severe flooding in many parts of Pennsylvania and timely delivery of information to the public was a priority.
  - In response to flooding, fact sheets, Web site links, news releases and radio interviews provided valuable information related to flooded drinking water wells.
  - 14 local residents with flooded wells tested their water and 10 made changes in their water treatment equipment based on their test results.
  - 90% (N=48) individuals attending one program indicated they would test their water for bacteria.
  - 51% (N=78) of individuals requesting information reported taking action to have their water supplies tested.
  - A goat herd client who requested assistance to test water quality after one of his goats died, solved the problem and made permanent changes to the water source for his herd.
  
- Pond Management: There are over 100,000 private ponds in Pennsylvania, and surveys indicate that the majority of pond owners are dissatisfied with their pond. Seventy-seven percent of pond owners indicate they have management problems. Results of several program evaluations indicate:
  - 81% (N=52) of workshop participants learned a new skill or plan to make a change in their pond.
  - 72% (N=25) of workshop participants intend to implement a new fisheries management/technique.
  - Visits to the Pond Management Web site increased from 2,665 last year to 4,222 visits in FY2004.
  
- On-Lot Septic Systems: Programs related to on-lot septic system management were delivered during the year. Evaluations of several programs are noted below.
  - 77% (N=65) of attendees at one workshop intend to clean their septic system on a regular basis.
  - 86% (N=65) intend to perform routine maintenance and watch for possible failures.
  - 95% (N=25) of participants at another workshop intend to implement at least two on-lot sewage system management steps.
  
- Groundwater and Watershed Awareness: Watershed programs were delivered to a variety of adult and youth groups. For example, the Enviroscape model is used for demonstrations about the sources of pollutants with high school students, watershed groups, camps and at community days. Several program results are noted below.
  - 41 people attended Rain Barrel Workshops. 73% (N=36) of respondents indicated they plan to start using a rain barrel, and 78% indicated they could reduce their home water consumption as a result of attending the program.
  - A non-profit volunteer organization in one county was formed to address the issue of illegal dumping, especially abandonment of tires. In 5 separate events

during the year, 66 volunteers removed 4.7 tons of trash and 4,134 tires from dumps and river banks.

- 100% (N=1,189) of the youth participating in Hydromania programs correctly defined and identified erosion. This collaborative program, organized by a water suppliers group, was presented to students in grades 3 and 4 at 18 schools.

c. *Source of Federal Funds—Smith-Lever 3b&c, and State matching funds.*

d. *Scope of Impact—State specific.*

## **Planned Program – Sustaining Pennsylvania Forests**

### **KEY THEME – Forest Resource Management**

#### **Managing Private Forests**

a. *Brief description of activity:*

The main theme is to ensure the long-term productivity of private forests to supply ecological, social and economic value to Pennsylvanians. Activities include building partnerships and support for outreach activities by working with the forest industry, the Pennsylvania Bureau of Forestry, volunteers, and forest landowner associations. Extension educators deliver programs through conferences, workshops, woods walks, training and on-site consultations. Through a cooperative grant from the U.S. Forest Service and the Bureau of Forestry, extension published *Forest Leaves*, a quarterly publication that reaches more than 14,000 forest owners and other stakeholders.

b. *Impact/Accomplishment:*

- More than 800 woodland and private forest landowners attended conferences and workshops offered across the state on a variety of topics ranging from managing water and forest resources and non-traditional forest uses and products to taxation and financial planning. Examples of evaluation results of several programs are noted below.
  - 86% (N=140) of participants indicated they plan to change forest or wildlife property management as a result of the conference.
  - 88% (N=115) of participants attending the Non-traditional Forest Uses and Products conference plan to implement an idea that was presented.
  - 75% (N=12) of participants indicated they plan to incorporate 75-100% of what they learned at the workshop into future estate and tax plans.
  - A new 38-member Woodland Owners Association was formed in one county, and an established association in another region added 50 new members in 2004.
  - 21 Woodland Owners Associations covering nearly two-thirds of the state's counties now exist.
  - 4 forest landowner associations in one region coordinated 22 educational events reaching nearly 900 participants.
- 23 new forestry volunteers completed VIP Covert training, representing 7,387 acres of forest ownership across 11 counties in the state.

- a. *Brief description of activity:*  
Twenty-five landowners took part in the Sustainable Forestry and Silviculture for Landowners program. This program, originally designed for professionals, provided information to help landowners determine sustainable methods of timber harvesting on their own forestlands.
- b. *Impact/Accomplishment:*
- 100% of participants indicated they would use the information presented in the course, and 100% would use the sustainability key to insure future harvests are sustainable.
- a. *Brief description of activity:*  
The *Southwest Forester*, a quarterly forestry newsletter is distributed to over 1,400 recipients. Additionally, a Regional Natural Resources Web site has been developed. It is a comprehensive educational resource for landowners, loggers and foresters. <http://cambria.extension.psu.edu/second.asp?county=Cambria&table=NatRes>.
- b. *Impact/Accomplishment:*
- 94% of the *Southwest Forester* recipients indicated the newsletter is useful, and 83% of readers indicated a change in their forest management behaviors as a result of information contained in the newsletter.

### **Professional Development**

- a. *Brief description of activity:*  
360 natural resource professionals, responsible for managing over 7 million acres of forestland in Pennsylvania and New York, participated in Forest Health 2004 in cooperation with the Forest Pest Management Division of the Department of Conservation and Natural Resources. These professionals, representing 56 Pennsylvania counties, learned about the latest research and scientific information on insect and disease problems facing forest resource managers.
- b. *Impact/Accomplishment:*
- A follow-up survey of recent participants indicated that 97.3% have implemented or used knowledge and/or practices learned at a previous conference.
- a. *Brief description of activity:*  
36 Forest Resource Professionals participated in the week-long Allegheny Hardwood Silvicultural Training Sessions. These foresters are responsible for the management of over a million acres of forest land in three Northeastern states.
- b. *Impact/Accomplishment:*
- 97 % of the professionals indicated they plan to implement knowledge and techniques learned to manage forests under their care as a result of the training.
- c. *Source of Federal Funds—Smith-Lever 3b&c, State matching funds and RREA.*

- d. *Scope of Impact—State specific, Multistate Extension (NY) and Integrated Research and Extension.*

### **KEY THEME – Natural Resources and Youth**

- a. *Brief description of activity:*

Reaching youth about forest stewardship and sustainability is important as they are the next generation of decision makers. An estimated 1 in 9 households in Pennsylvania currently owns forestland, and many of these households or family groups have school-age youth. Outreach efforts include school enrichment programs and traditional 4-H clubs and projects. An important outreach audience is teachers who receive training to instruct to educational standards, to use demonstration areas and to develop and use web-based lesson plans.

More than 5,000 youth were involved in 4-H natural resource projects during the year, and approximately 1,200 youth participated in structured events (e.g., field days, day camps, and forestry events) designed to demonstrate their knowledge of basic forestry skills. Additionally, VIP Coverts interacted with over 7,500 young people with information on forest stewardship. Evaluation results of several programs are noted below.

- b. *Impact/Accomplishment:*

- More than 700 students from area schools visited a Conservation District's Environmental Center wetlands facility to learn about the importance of wetlands and how they help improve water quality. 187 students in 4th grade were given a pre- and post-test to verify learning about wetland environments. Evaluation results indicate:
  - Before the program, 30% (n=57) could list 3 benefits of wetland habitats; 81% (n=151) were able to list 3 benefits after the program.
- 401 urban youth (54% African American or Hispanic) learned about composting, recycling and how to reduce trash from their homes through a hands-on program.
  - 80% of the children at each site could correctly answer questions about composting and the time it takes for materials to break down.
- 568 elementary school students learned about tree identification during environmental education field days and at an annual camp experience.
  - 100% (N=215) of the students identified 4 or more trees using methods taught.
- A water resources education program was offered to 84 students in grade 6 and 9 teachers. Evaluation results indicate:
  - Following the program 68% (N=84) of the students were able to indicate where the water that has infiltrated the soil goes; 62% of the students were able to identify the land cover type that produced the cleanest water.
  - 75% of the teachers indicated they planned to incorporate 90% of the water resource education material/activities into their classroom curriculum.

- c. *Source of Federal Funds—Smith-Lever 3b&c, and State matching funds.*

- d. *Scope of Impact—State specific.*

## **KEY THEME – Other**

### **Urban and Community Forestry**

*a. Brief description of activity:*

The Pennsylvania Urban and Community Forestry Program, in partnership with the Department of Conservation and Natural Resources Bureau of Forestry, helps municipalities, volunteers and the green industry develop sustainable community forest management programs aimed at restoring, preserving and enhancing the residents' quality of life <<http://www.dcnr.state.pa.us/forestry/pucfc/>>. Urban foresters and a faculty members provide technical assistance; offer educational opportunities and publications; empower and train volunteers; and assist with grants that support tree planting, pruning, tree care to maintain health and safety, and build public support for community tree programs.

*b. Impact/Accomplishment:*

- Technical assistance, grant writing assistance and tree health programs are offered to communities across the state. Several accomplishments are noted below.
  - As a result of urban forestry work with communities and non-profit organizations in one 18 county region, \$600,000 in USDA Forest Service funds has been earmarked for Urban Forestry projects in Northeast Pennsylvania.
  - More than 100 hazardous Norway maples under utility lines were identified and removed in cooperation with the utility company and their contractor at no expense to the landowner, a collective savings to property owners of \$50,000.
- 8 successful Inner City grants totaling \$74,000 were received from organizations around Philadelphia. All grants leveraged matching funds and in kind services of at least \$87,137 additional funds towards their community efforts. As a result, a total of \$161,137 was available for community forestry use in the Southeast region.
- 45 landscapers, public works employees, park staff and ground managers attended a program on pruning techniques in one region of the state.
  - 75% of participants reported they intend to use the techniques learned at least once a month; 24% would use them daily.
- 37 participants were involved in a community awareness project on household stormwater management and water conservation and nonpoint source pollution to help protect water resources in the Chesapeake Bay.
  - 88% (N=32) of participants indicated their ability to reduce water usage at their household and 100% would share what they learned with others.
- Arborist Short Courses offered across the state provide the latest research and work practice information to community arborists, supervisors and administrators, and to prepare candidates for certification. More than 100 participants have attended.
  - 35 landscapers and tree care professionals in one course increased their test scores from an average of 56% prior to the class to 80% after the course.

*c. Source of Federal Funds—Smith-Lever 3b&c, State matching funds, and USDA Forest Service grants, matched by Penn State University.*

*d. Scope of Impact—State specific and Integrated Research and Extension.*

## GOAL 5

**Empower people and communities, through research-based information and education, to address the economic and social challenges facing our youths, families, and communities.**

### Overview

Penn State is dedicated to the integration of research and extension, and faculty and county-based educators collaborate to develop and successfully implement the objectives of the five-year plan of work, seeking continuous input from citizens, local advisory groups and boards, the Pennsylvania Council of Cooperative Extension Associations, and the Penn State Agricultural Advisory Council. Penn State Cooperative Extension accomplishments related to Goal 5 for the last year of the five-year plan of work were highly satisfactory. As outlined in the plan of work, Cooperative Extension emphasizes five overarching goals: (1) increasing the quality of child care, (2) strengthening the capacity of families and communities; (3) increasing youth life skills; (4) developing leadership capacity in adults and youth; and (5) increasing the understanding of public policy issues. Within each of these areas, sub-goals and objectives guide Cooperative Extension faculty and field-based educators in solving issues critical to a diverse clientele.

Our evolving contemporary society is clearly dictating that child care continues to be a major need within the Commonwealth. During 2004, 15,211 child care providers engaged in professional development activities through Cooperative Extension, and 13,579 providers increased their knowledge, skills, and abilities relative to proper child care practices. Penn State Cooperative Extension's Better Kid Care Program provides statewide educational materials and resources, directs training workshops, satellite broadcasts, Internet-based workshops, telephone help line, videos, and educational activities for child care providers, parents, and employers. More than 14,360 child care providers received state-mandated certification to operate in compliance with state law through participation in satellite workshops or direct training.

Social and economic changes continue to have a tremendous impact on children and families. Because Pennsylvania has the nation's second highest percentage of population older than 65, Cooperative Extension continues to broaden its aging and intergenerational programming across the lifespan. Extension educators provide parenting programs for audiences from grandparents and parents to underserved populations such as prison inmates. A total of 1,213 interagency collaborations were in effect during 2004 to ensure and improve outreach to families and especially to higher risk families. Through these collaborations and related programming, 11,359 youth and parents improved their social and communication skills.

The development of Pennsylvania's youth into productive, contributing members of society is the goal of 4-H and related youth development programming. A total of 84,254 youth participated in 4-H and other youth programming. Of these, 62,980 youth

demonstrated the development of life skills such as decision-making, recordkeeping, communication, and problem solving. This occurred through educational programming in the life, physical, and social sciences, leadership, citizenship, and personal development. Traditional club-focused programming continued but more efforts were concentrated on after-school youth programming and reaching underserved audiences.

The development of leaders continued as a major focus for Cooperative Extension programming. Consequently, 6,515 individuals participated in formal leadership and volunteer development programs. More than 7,860 individuals participated in ongoing volunteer and leadership activities such as extension boards, committees, 4-H and youth volunteers and Master Gardeners. As a result of leadership programming, 9,854 individuals increased their knowledge of and/or performance of leadership skills.

Community and public policy education and decision making in Pennsylvania are characterised by a mosaic of decentralized jurisdictions, authorities, and interests. Local governments continue to be involved in an increasing role in the decision making process. As well, an array of changes and constituents shape environmental and societal outcomes. The number of participants in programs related to public policy issues totalled 2,231 with 1,971 participants indicating increased knowledge and understanding of public policy issues such as local taxation, land use, the environment and natural resources and economic development.

Highlights of successful Penn State Cooperative Extension activities and documentation of their benefits are noted in the following section. A complete listing of programs is available at <http://pow.cas.psu.edu>.

	<b>FY2004</b>
Human Resources (FTEs)	173.30
Fiscal Resources (Smith-Lever)	\$4,879,851
Fiscal Resources (match)	\$4,879,851

## GOAL 5

**Empower people and communities, through research-based information and education, to address the economic and social challenges facing our youths, families, and communities.**

### **Planned Program – *Strengthen and Support Family Well-Being***

#### **KEY THEME – Child Care Issues**

*a. Brief description of activity:*

Penn State Cooperative Extension's Better Kid Care Program provides statewide educational materials and resources, direct training workshops, satellite broadcasts, internet-based workshops, telephone help line, videos, and educational activities for child care providers, parents and employers. Satellite training workshops, produced at Penn State, were downlinked on average to 55 Penn State Cooperative Extension sites across Pennsylvania and on average to 42 states nationwide.

*b. Impact/Accomplishment:*

- Over 39,890 child care providers were trained statewide enabling them to operate in compliance with state regulations.
- 14,365 child care providers received state-mandated certification to operate in compliance with state law through participation in satellite workshops or direct training.
- 5,734 legally unregulated child care providers received training through participation in satellite workshops or direct training.
- Over 21,000 child care providers received state-mandated certification through distance education video-based units or web-based units.
- Over 10,000 child care providers enrolled in and participated in the print-based training that enabled them to meet minimum state standards.
- Over 51,000 hours of training was delivered via distance education programs.
- Over 35,640 hours of training was provided to new centered-based staff during the first 90 days of employment units.
- More than 429,434 educational documents were accessed via the Better Kid Care web site <[www.betterkidcare.psu.edu](http://www.betterkidcare.psu.edu)>. This resulted in significant savings over mailing print materials.
- A study of Better Kid Care satellite workshops indicated that satellite delivery of educational information is an effective distance education method. The results of the study demonstrated that knowledge and skills obtained via satellite training were applied to improve the quality of child care.
  - 90% of the providers shared information they obtained via satellite with the children's parents.
  - 70% applied learned skills in their family homes and centers.
  - 45% used new knowledge in planning their curricula and making changes in their weekly plans within 3 months after the program.

Examples of various child care programs offered in different counties along with some of the evaluations that were completed follow.

*a. Brief description of activity:*

Research indicates that children entering school without essential skills will have a more difficult time throughout their school years. To reach low-income, low-literacy families, the school readiness program in one county incorporates the distribution of a free video, brochures—available in English and in Spanish—to parents and a direct training for 117 child care providers on pre-language skills.

*b. Impact/Accomplishment:*

- 23 providers attending the pre-language skills training reported the following, seven months after the first training:
  - 91% of the attendees had purchased new materials to promote school readiness.
  - 82% had talked to parents about school readiness and encouraged them to do some of the activities with their children at home.
  - 70% report they are reading with pre-schoolers more often.
  - 78% report they have observed moderate or great improvement in the pre-language skills of the children in their care as a result of their new efforts.

*a. Brief description of activity:*

Educators in 5 counties joined efforts to present a series of three trainings entitled “Communication and Stress,” a combination of two satellite-based and one direct training. Pre-and post-surveys for the direct training as well as a follow-up evaluation indicated:

*b. Impact/Accomplishment:*

- 100% (N=121) could list two effective forms of communication in the post-test.
- 96% (N=121) could list two ways to reduce stress at the workplace after the workshop.
- 50% (N=180) participants completing the follow-up evaluation used training tips to reduce work place stress.

*a. Brief description of activity:*

Educators offered direct trainings and conference workshops for childcare directors and providers. Some trainings have introduced assessment tools for charting personal education and training needs—the Core Body of Knowledge (CBK) and the Program Development Record (PDR) tools. Other conferences may provide training programs to meet the Department of Welfare training requirements. Evaluations from several county programs are noted.

*b. Impact/Accomplishment:*

- 100% (N=53) of participants intend to use both the PDR to keep a record of their trainings and the CBK to make a training needs plan for next year.

- 96% (N=118) of participants attending The Arts in Early Childhood conference indicated they intend to use what they learned in the workshop.
  - 99% (N=138) of participants in another conference indicated they could use the information provided; 98% would recommend that others attend the conference.
- a. *Brief description of activity:*  
 Extension educators provide many forms of diversity education designed to reduce stereotypes, dispel perceptions and encourage acceptance and understanding. For example, a workshop—Understanding the New Face of the American Family—was offered to 61 child care providers from several counties. Evaluations indicated:
- b. *Impact/Accomplishment:*
- 100% (N=61) of participants identified a need to develop a curriculum for children to reflect the diversity of family structures.
  - 100% intend to make at least two changes to their literature section, family news section or circle time to incorporate more material that reflects family diversity.
  - 100% will recognize the special needs of special families and incorporate more information for the family specific to their needs.
- c. *Source of Federal Funds—Smith-Lever 3b&c, and State matching funds.*
- d. *Scope of Impact—State specific, Multistate Extension (42 states across the country participate in Better Kid Care program) and Integrated Research and Extension.*

## **KEY THEME – Parenting Education**

- a. *Brief description of activity:*  
 Extension educators provide parenting programs for a variety of audiences across the Commonwealth, from underserved populations, service providers and families at risk to prison inmates.
- b. *Impact/Accomplishment:*
- A variety of programs for parents of teenage children are offered. A Parents College was held in collaboration with a school district for parents of 9 to 14 year olds in one county. A translator assisted the Spanish-speaking parents in several sessions. In another county, parents attended a program about how to handle stress in teenagers and another program focused on building strong relationships.
    - 80% (N=49) of parents attending Parents College were able to choose best practices when problem-solving with others.
    - 100% (N=46) of parents indicated they would encourage their teenager to engage in physical activity and 91% would help their child adopt musical or artistic outlets to reduce stress.
    - 86% (N=55) of parents planned to take at least one action during the holidays to build a stronger relationship with a teen in their community or family.

- 28 parenting workshops on a variety of topics were offered in several counties reaching 290 participants.
    - 58% (N=125) of respondents indicated they plan to implement at least one new parenting skill with their children.
    - 60% (N=40) indicated they plan to make changes in their own behaviors as a result of attending a temperament workshop.
  - 18 foster parents attended a series of workshops, offered in collaboration with the Children and Youth Department, focused on child development, behavior modification, communication skills, etc. Parents commented, “I need to interact more with the foster child I have now, despite my feelings and emotions,” and “I learned that positive reinforcement should be used.”
  - The Challenge of Being a Parent is a program conducted by an extension educator for participants mandated to attend by the court system. 156 parents attended the program which focuses on helping separated and divorced parents. 108 parents completed the series and received certificates for court requirements. An evaluation showed that:
    - 50% indicated that they improved their communication skills with their children and former spouse by eliminating communication roadblocks.
    - 62% indicated they understood their parenting style and were going to change to a loving and firm style.
    - 100% implemented at least one new rule with consequences and follow-through.
  - Satellite training on parenting practices, entitled Cultural Perspectives on Parenting, was offered to 18 professionals in several counties.
    - 100% increased their knowledge of the influence culture has on parenting, and knowledge of parenting challenges on new immigrants.
    - 100% increased their knowledge and skills needed to further develop work with culturally diverse families.
  - Parents of children in protective services, parents referred by schools, parents referred through the court system and those who self-refer enroll in a program, Parenting 101. Parent education in the Venango County Jail is a subdivision of Parenting 101. This year 36 parents attended the program, offered in collaboration with 4 other agencies.
    - 75% indicated at least one attitude change in a post-test for child development.
    - Parents scored 80% or better on a post-test demonstrating an increase in skills.
    - A relative of a prior inmate reported improvement in his parenting role.
- c. *Source of Federal Funds—Smith-Lever 3b&c, and State matching funds.*
- d. *Scope of Impact—State specific, Multistate Extension and Integrated Research and Extension.*

## **KEY THEME – Children, Youth and Families at Risk**

- a. *Brief description of activity:*  
 A New Community Project—Youth Engaged in Technology (YET)—is designed to enhance young people’s marketable skills (especially those related to information sciences and technology), social skills, and prosocial skills. The idea is to use technology as a vehicle through which young people are engaged in learning and

contributing. The primary audience involved in the YET program is high school youth. Specifically, freshman and sophomore high school youth are involved in the YET 4-H Club. These students are targeted through referrals from guidance counselors, nurses, teachers, principals and support staff. In addition, through community service activities, participating youth contribute to others in their community, such as senior citizens and elementary school children.

The program structure is an after-school club conducted at the local high school. The size of the clubs membership is approximately 17 members, and the club meetings are facilitated by the site coordinator. Skill development and learning, relationship building and opportunities to contribute are embedded in the design of program. The focus of the first year of programming was recruiting and initiation of the YET program, pilot testing the curriculum and collecting baseline data on the youth technology knowledge. The first year curriculum involved: team development, web development, robotics and community service activities. Schools at three sites are involved in the program.

*b. Impact/Accomplishment:*

- Pennsylvania YET members showed a significant increase in overall scores state wide for the general computer knowledge and robotics knowledge this year.
  - Scores increased in general computer knowledge from 49% to 61%.
  - Scores for robotics knowledge increased from 71% to 90%
- YET members were engaged in community service or “helping other” projects. One project involved teaching seniors basic computer skills. By teaching computers, YET members built their sense of mastery and developed a positive perception of seniors. A total of ten computer workshops were offered with over 90 community members trained. Three of the workshops were advanced computer skills, 20 community members took both the basic and advanced workshops.
- The high school principal for one of the sites reported that she had observed students’ interpersonal skills improving.
- Anecdotal information on youth behavior indicates many positive changes.
  - One youth previously hesitant to interact with certain peers has taken on the role of a YET Club youth leader.
  - Another youth, who previously spent weekends and after school hours with friends engaging in risky behaviors, has attended YET club meetings regularly, made new friends, and his mother reported saving money on computer repair bills, since her son completes repairs.

*a. Brief description of activity:*

Extension educators in Chester County work with at-risk youth through community collaborations. 4-H after-school programs are offered at a 21st Century Learning Center at the high school. In addition, 430 children and youth were enrolled in 4-H character education, creative arts, and agriculture and leadership projects through the Southern Chester County Literacy coalition. These programs traditionally serve underserved and resource-stressed audiences.

*b. Impact/Accomplishment:*

- 230 children, youth and parents were served through 10 community sites in southern Chester County communities.

*a. Brief description of activity:*

The Community Parent Involvement Coalition (CPIC) in one county consists of parents (n=8) willing to train, plan and volunteer their time with after-school programs at the Quinby Street Resource Center. The CPIC meets on a regularly basis with the resource center staff and have been instrumental in developing and revising rules for the center, planning events and providing hands-on assistance.

*b. Impact/Accomplishment:*

- CPIC members contributed a total of 453.25 volunteer hours during the year to meetings, planning, events held, field trips, after-school programs or other related functions by the CPIC.
- 4 CPIC members (50%) volunteered to help in the Strengthening Families program in the following areas: food management, room preparation and materials management, assistant youth facilitator.
- 3 CPIC members met with the resource center staff to plan and volunteer time for the Musser Elementary COOL program and 4-H collaboration expressive arts sessions.
- 4 CPIC members chaperoned the 4-H club at the 2004 4-H Annual Roundup and assisted with the preparation of the lunch meal for the club.
- 3 CPIC members volunteered during the three Summer mini-camps with materials preparation, snacks setup and youth monitors.

*c. Source of Federal Funds—Smith-Lever 3b&c, and State matching funds.*

*d. Scope of Impact—State specific and Integrated Research and Extension.*

**KEY THEME – Aging Issues**

Pennsylvania has the nation's second-largest percentage of population older than 65. During the past two decades, the 60-and-older population grew nearly twice as fast as the rest of the population. Penn State Cooperative Extension continues to broaden its aging program. This includes expanding educational services for senior adults and professionals who work with them as well as developing roles for senior adults in other Extension program areas. Programs provide information, resources and support to bridge generational issues and facilitate communication, and other program efforts increase awareness about kinship care.

*a. Brief description of activity:*

In one county, local agencies cooperated in distributing a newsletter, Grandparents Raising Grandchildren, and educators are preparing for a regional Kin and Kid Hand in Hand retreat in October 2004. Extension educators in another county are providing leadership for the development of a community task force to address the needs of 1,784 grandparents responsible for raising their grandchildren. A program,

Grandparents Raising Grandchildren – Is Anyone Helping? was initiated to assess needs and identify resources. Media was used to create awareness of the issues and promote a workshop. These community efforts have resulted in the following actions.

*b. Impact/Accomplishment:*

- Grants were written and \$11,360 in funds were procured to support family registrations and transportation to attend the Kin and Kid Hand in Hand retreat.
- A community guidebook of local resources for kinship care has been developed.
- A kinship care logo was designed and donated and an informational brochure has been distributed.
- An interactive display at a local Celebrating Kids event attracted hundreds of youth and adults creating awareness and making important community contacts.
- Key individuals and sites have been identified for the organization of support groups.
- 30 kinship care givers and 10 children attended the first workshop:
  - 23 attendees indicated interest in joining a support group.
  - Four key needs were identified: financial assistance, identification of community resources, emotional issues, and communication with children.

*a. Brief description of activity:*

An extension educator and director of the Area Agency on Aging in one county have collaborated to provide a program, Grandparents and Other Relatives Raising Children. Monthly intergenerational meetings include a family dinner followed by breakout sessions for adults and children with educational topics presented by extension educators and community resource professionals.

*b. Impact/Accomplishment:*

- 20 families that attend regularly have developed a strong support network.
- The program received a national grant of \$4,500 from Anheuser Busch and AARP to promote family activities for kinship care families.

*c. Source of Federal Funds—Smith-Lever 3b&c, and State matching funds.*

*d. Scope of Impact—State specific and Integrated Research and Extension.*

**KEY THEME – Other**

*a. Brief description of activity:*

The Mellon Community Bridge Project, a workforce development/work readiness program initiated through a \$1 million dollar grant from the Mellon Corporation, focuses on life skills and workplace skills training for low-income individuals currently not employed or under-employed. The program prepares participants to be reliable workers in a wide range of occupations. The ultimate goal of the project is to use community programs to assist in developing a reliable workforce that fulfills the employment needs of the community.

During 2004, the fourth year of the project, the urban site continued to grow and the educational sessions were expanded to reach more participants in Delaware County. The sessions have been enhanced and the evaluation of the curriculum impact was completed. Additionally, the Bridge Project has received recognition with awards such as the Community Service and Humanitarian Award, Community Service Leadership Certificate and the Community Partnership and Florence Hall Awards from the National Extension Association of Family and Consumer Science.

A total of 106 participants enrolled in the “Skills for Taking Control of Your Future” training. One hundred thirty nine agency personnel completed the “Skills for Taking Control of Your Future” train-the-trainer program that prepared them to be facilitators of the program within their own agencies or organizations. Additionally, 35 community members were trained and paired with program graduates as mentors. The majority of trained mentors were from Chester County’s business community. The Mellon project also collaborates with many agencies that assist graduates find and retain employment. For example, Wings for Success and Career Wardrobe are two agencies that serve as referral sources to provide clients with appropriate outfits for the workplace. Continuous efforts also are made to maintain and create ongoing collaborations between partners in human service agencies, community groups, businesses and educational institutions. A newly formed collaboration resulted in 462 low-income individuals being assisted by 14 trained volunteers to take advantage of the Earned Income Tax Credit. Several results of the program are noted.

*b. Impact/Accomplishment:*

- 83% of the 106 enrolled participants in Skills for Taking Control of Your Future completed the sessions.
- 60% of participants completing computer training and/or skills training are currently gainfully employed full or part-time.
- Pre- and post-tests showed that 61% of the participants increased communication skills, with most significant learning occurring among GED students. Men as well as women increased their communication skills.
- Using pre- post-tests, 59% of the participants increased their decision-making skills.
- Agency trained professionals reported using the curriculum with 78% low-income clients, 50% single parents, 28% single mothers, 20% homeless persons and 11% teen mothers to teach basic life skills.

*c. Source of Federal Funds—Smith-Lever 3b&c, and State matching funds.*

*d. Scope of Impact—State specific and Integrated Research and Extension.*

## **Planned Program – 4-H and Youth Development**

### **KEY THEME – Youth Development/4-H**

Cooperative Extension offers a variety of programs promoting and enhancing youth development and life skills through animal and plant sciences, family and consumer

sciences, natural resources, applied science and technology, leisure education and outdoor skills, personal development and cultural competency and citizenship. More than 110,000 youth participated in 4-H programs in Pennsylvania during FY2004. A few examples are listed below.

### **Science and Technology Education**

*a. Brief description of activity:*

Science, engineering and technology is a primary focus of the national 4-H Youth Development program. Teachers request support to meet required standards of the No Child Left Behind legislation and science and technology educational standards established for Pennsylvania schools. The 4-H program provides support through many curriculum areas including the animal and plant sciences, engineering and environmental sciences, natural resources, computer sciences, etc. More than 56,000 Pennsylvania youth participated in 4-H school enrichment projects. Additionally, approximately 22,000 youth participated in special interest projects, about 4,500 in camping programs, and nearly 25,000 youth participated in 4-H clubs.

*b. Impact/Accomplishment:*

- More than 46,000 youth participated in the 4-H embryology program in 2004. Classroom teachers continue to use this enrichment program, even though schools are under pressure to be efficient and are cutting many traditional activities. Cooperative extension educators continue their training of classroom teachers. The following evaluation results show the value of participation in the 4-H embryology project.
  - Teachers increased their comfort level as a result of the training. The average comfort level increased from 2.1 before training (on a scale of 1 to 5, with 5 being most comfortable) to 4.5 after the training.
  - Evaluations indicated that improved training, revision of teacher materials and increased teacher contact led to an improved hatch rate and increased understanding of how to correctly use and monitor incubators.
  - Typical staff comments include:
    - “The entire training program provided significant knowledge regarding the project.”
    - “Embryology provides a unique hands-on experience. It is a science and writing intensive unit with practical uses of math developed throughout.”
    - “Attendance is up during this project because kids don’t want to miss anything.”
  - All teachers who responded to the survey in 8 classrooms intend to use the program in 2005.
- Youth learn about the laws of physics by participating in 4-H rocketry related projects. Many schools use the Rockets Away program as a part of their curriculum when they study space science. Nearly 780 youth in several counties have been involved in rocketry related projects.
  - Teens were trained to teach rocketry and taught 33 youth to make model rockets.
  - 3 teachers learned to launch rockets and indicated they feel comfortable launching them alone next year.
- Nearly 400 youth learned about entomology through summer camp and after-school programs, some using the Creepy Crawlies curriculum. Other youth have participated in wildlife and forestry field days and natural resources camps.

- A grant for \$2,500 was received from the Pennsylvania Department of Agriculture to support minority youth at day camp. Campers at the three sites increased test scores an average of 10.34 points or 41% (N=86).
- 94% of the campers indicated they had learned more about insects, and 93% indicated they would return to camp next year.
- This programming was also provided for 18 mentally challenged campers.
- 50 youth attending the Outdoor Adventure camp noted a greater appreciation for the outdoors and the importance of renewable natural resources.

### **After-School Programs**

#### *a. Brief description of activity:*

Over the past year participation in 4-H programming in after-school settings has grown from slightly over 600 youth to more than 2,000 youth. As growth in this program area continues, 4-H Afterschool has a significant impact on the rural areas of Pennsylvania where child care in out-of-school hours is limited. After-school programs have been proven to protect youth from violence, crime and exposure to drugs, alcohol, and tobacco. Youth in after-school programs also tend to set higher future goals for themselves.

A recent statewide survey was conducted to determine needs for 4-H Afterschool programming and barriers to expanding after-school programming. 4-H youth and family and consumer sciences educators responded to the survey. They identified several needs and trends that support the development of 4-H Afterschool Resource Kits and a 4-H Afterschool Best Practices Conference.

#### *b. Impact/Accomplishment:*

- 45% (N= 64) of the educators surveyed have established 4-H clubs in existing after-school programs with the majority (69%) having started between 1 and 5 clubs.
- 73% (N= 64) have provided curricula and resources to existing after-school programs. Only 27% of the educators indicated they are administering an after-school program.
- Educators collaborate with more than 35 different agencies and organizations (i.e., Family Centers, Juvenile Justice, 21<sup>st</sup> Century, Migrant Education, Schools).
- A best practices conference on after-school programming was held for extension educators. Every county received an after-school tool kit containing sample curricula and resource materials on youth and community development.
- The Pennsylvania Migrant Education Program in one county has integrated the 4-H gardening curriculum into their summer program. The community garden held an open house at the end of the summer.
  - PA Migrant Education received an internal grant (\$2,180) to partially fund a 4-H summer assistant and to purchase gardening tools.
  - 114 students (all Hispanic) from PA Migrant Education and 25 youth from the Clinton Street Olivets Boys and Girls Club completed the 4-H Gardening Project.
  - An assessment at the end of the program indicated outstanding knowledge about plant science: 91% of the youth named all 6 of the basic needs of plants; 100% named the 4 basic parts of a plant; 70% accurately identified the parts of the plant that different vegetables we eat come from.

- a. *Brief description of activity:*  
 Many different kinds after-school programs have been initiated. In one county, for example, a 4-H after-school theater arts program was established, and the youth selected a skit to perform for the school's open house. In another county, 20 students in grades 3 and 4 participated in a variety of after-school 4-H club projects.
- b. *Impact/Accomplishment:*
- 40% of the theater arts program students increased their ability to interact with youth and adults; 31% increased their enjoyment level of working in small groups or teams; 56% of the students increased their comfort level of standing in front of groups; and 65% of the students increased their ability to try to see another person's point of view.
  - The 4-H club members brainstormed ideas for community services projects. They voted to hold a Penny Drive in their school to benefit SafeNet, a local shelter for battered women and children. The club raised over \$150 that was donated to SafeNet.
- c. *Source of Federal Funds—Smith-Lever 3b&c, and State matching funds.*
- d. *Scope of Impact—State specific.*

**Planned Program – Build Leadership Capacity and Volunteer Management and Development of Volunteer Skills**

**KEY THEME – Leadership Training and Development**

- a. *Brief description of activity:*  
 Penn State Cooperative Extension conducts leadership education to prepare adults and youth to meet the expectations of the 21st century. Leadership programs include workshops, leadership institutes and conferences and volunteer leader training. In some instances Cooperative Extension collaborates with other organizations to conduct these programs. Some examples of programs include 4-H Camp Counselor Training, the Challenge Leadership Program and 4-H County Council and Extension Advisory Committee Training. These programs give adults and youth opportunities to identify leadership styles; develop skills in getting along with others, decision making, and communications; and increase skills in working in groups and resolving conflict.
- b. *Impact/Accomplishment:*
- In one region of the state, the Youth Council is a mandated standing committee of the Workforce Investment Board (WIB) and is required to maintain membership and create strategic initiatives that align with the WIB's regional strategic plan. An extension educator provides leadership for the Youth Council, recruits and orients new members and helps the committee reach consensus on leadership priorities and action steps. Two parent representatives were recruited to serve on the Youth Council to achieve mandated membership compliance.
    - 17 Youth Council motions were passed pertaining to operational and strategic

- initiatives. 100% of the motions passes unanimously.
- An online edition of the Workforce, Community and Youth Services Directory listing 560 unique agencies was launched.
  - 65% (N=31) of the regions school superintendents were engaged in discussion regarding industry clusters and integrating data to supplement curriculum.
- As a result of a community visioning process, adults and youth are working together in one low-income community to develop youth leadership skills to help bring about changes and strengthen the community. With leadership from extension educators, a number of activities are capturing the spirit and potential that resides with the youth of the community. For example, the fire company, which struggles with finances, is the hub of most activity for the youth, and it is also a priority for the community.
    - County commissioners supported the community visioning process with a \$19,500 grant to the fire company and an application for \$375,000 building improvement grant.
    - The Indiana Rotary club awarded a \$2,160 grant to underwrite a day-long youth leadership program for 15 youth.
    - Youth recruited adults and other youth to participate in a community-wide cleanup day through PennDOT.
  - Communication training in another county was provided to participants from schools, Laurel Highlands Tourism Academy, Leadership Washington County and Community Builders. Participants indicated significant increases in understanding and confidence in performing skills in the focus areas of the session. Additionally, participants indicated strong intentions to apply the knowledge and skills gained at the session. Formal evaluations were conducted.
    - 77% of participants increased 2 to 4 steps in conflict management skills.
    - 84% indicated increases of 1 to 3 steps for skills such as communicating on a team, leading people through change and leading a team of diverse individuals.
    - 100% of respondents indicated increases of 1 to 3 steps for understanding and interpreting statistical information.
  - Youth leadership skills are taught in conjunction with many 4-H events. 4-H camps provide in-depth leadership training opportunities for youth to become camp counselors. 4-H teens learn about ways to handle situations that could arise at camp. They also learn about different age groups of youth and how to help them meet their needs. The counselors have the opportunity to apply what they learned to real life experiences at 4-H camp. Several survey results follow.
    - 88% (N=19) of the counselors indicated they felt prepared to be a counselor at the start of camp.
    - 88% (N=19) indicated they used their counselor training in other areas of their lives.
    - 100% (N=16) of the counselors reported they worked together as a team.
    - 75% (N=16) reported they were prepared to solve problems and/make decisions while at camp.
  - Citizens need knowledge and skills to effectively participate in community decision making. The Learn Today, Lead Tomorrow program was piloted with a group of Master Gardeners, 4-H Leaders and other extension volunteers to determine its use as a statewide leadership curriculum. This curriculum will be disseminated through

train-the-trainer programming in 2005. A survey of participants in the Active Leadership Module follow.

- 18 of 30 participants could identify one reason why groups are successful or not successful.
- 26 of 30 participants indicated that the role play activity had increased their understanding of how to speak up about a public issue.

a. *Brief description of activity:*

Teachers and administrators in an urban school identified a need to teach youth how to work together to solve school and community problems. Twelve youth have been selected by the service learning coordinator to serve as the leadership team for the school. These students develop programs and literature to inform the 800 students about the importance of environmental issues within the community. Students work with teachers, extension personnel and researchers from Penn State to develop the leadership skills necessary to identify and solve issues within their communities.

b. *Impact/Accomplishment:*

- 100% of the student leaders were able to identify community and school leaders and how to determine who were the change agents within their community.

c. *Source of Federal Funds—Smith-Lever 3b&c, and State matching funds.*

d. *Scope of Impact—State specific.*

## **Planned Program – Community Capacity Building and Decision Making**

### **KEY THEME—Community Development**

a. *Brief description of activity:*

The Community Network program guides community leaders in the development of sustainable community network projects. These projects provide free training opportunities for citizens on the use of computers, software and high-speed Internet; encourage development of local Web content through a community Web site; provide free access to computers, productivity software and high-speed Internet; and build demand for information technology services. Community Network leadership teams are actively developing and implementing community network projects in six counties. Four of these counties are undertaking broadband demand aggregation efforts as pilot communities in the Pennsylvania Broadband Coalition funded by the Department of Community and Economic Development and the Appalachian Regional Commission.

b. *Impact/Accomplishment:*

- The leadership team in 3 counties have created a local non-profit economic development corporation to increase broadband services and adoption in each community through a public private partnership. They are negotiating with private

sector organizations to create a new for-profit business that will deliver broadband services to the non-profits' customers.

- 57 community leaders in one county participated in a session on Community Networks. As a result of the meeting, County Commissioners put a high priority on computerizing county government, planning to invest \$900,000 for the project.

a. *Brief description of activity:*

County, township and borough officials are beginning to appreciate the value of the Internet as a tool to exploit and to supply information and services to the public. However, elected officials and government employees often have little understanding of how a government Web site could be used and what Web applications might be appropriate. Access eGovernment curriculum is designed to help these officials develop dynamic, information rich Web sites to meet the needs of local residents and local government. Extension educators are actively involved in working with and providing training to local officials. Several impacts are noted below.

b. *Impact/Accomplishment:*

- One township reported they plan to revise their Web site as a result of the program.
- Many county and municipality staff members have participated in the eGovernment program. Results of several follow-up surveys are noted.
  - A click-n-zoom map of city streets was added to their Web site.
  - In another county, staff have been able to keep a current calendar of events and added new information to their site.
- A telephone survey one year after training of participants representing several departments in one county government indicated:
  - 100% (N=5) used the information to further develop their department on the county Web site.
  - 100% (N=5) evaluated the structure and organization of their part of the Web site to make it easier for users to find information and services.
  - 40% (N=3) of other government departments or staff members are now providing additional services and/or information on the Web site.
  - 100% (N=5) made other changes that improved their area of the Web site.

a. *Brief description of activity:*

Information Technology for Non-Profits, which introduced staff and board members to the basics about computers, software, networks, and Internet options, was a collaborative effort that included a local university' technology group, Penn State Continuing Education, extension educators and others. Additionally, eNonProfit curriculum was offered to local service providers in several counties.

b. *Impact/Accomplishment:*

- 39 non-profit organization staff and board members completed an online evaluation conducted by the university' technology group. Results show that:
  - 63% (N=22) indicated that the material presented had immediate application to their workplace.
  - 59% (N=22) indicated that the course provided the information they were

seeking to meet their needs.

- As a result of eNonProfit assistance provided, the Human Service Council developed a Web site with limited interactivity.
- a. *Brief description of activity:*  
Several counties in Pennsylvania are in various stages of developing and implementing The Future of Agriculture (FOA) project in their communities. One region has developed a team of extension educators to coordinate these efforts in their 9 county area. The core of the FOA project involves building a broad-based, diverse coalition of citizens interested in preserving and enhancing agriculture. These citizens develop a questionnaire and interview farmers about the future of agriculture. Using data from these surveys, they develop action plans to support agriculture. While some counties are just beginning a planning and visioning process to set priorities, others have completed surveys and organized committees to begin action steps. Several accomplishments are noted below.
- b. *Impact/Accomplishment:*
- 43 citizen volunteers conducted surveys in one county; 66 surveys were returned.
    - Volunteers donated at least 460 volunteer hours, translating to \$5,360 donated.
    - A committee met to review data and consider next steps.
  - One committee is focusing on educating non-farmers about agriculture, and a second committee is focusing on educating farmers about opportunities.
  - Educators in several counties report that the Leadership Teams have taken ownership of the process.
    - Strong attendance has been maintained with 25 participants attending task force meetings.
- c. *Source of Federal Funds—Smith-Lever 3b&c, and State matching funds.*
- d. *Scope of Impact—State specific and Integrated Research and Extension.*

## **Planned Program – Consumer Horticulture**

### **KEY THEME – Other**

- a. *Brief description of activity:*  
Consumer horticulture greatly impacts environmental quality. As suburban growth continues, more and more land is occupied by housing which increasingly strains natural systems. In Pennsylvania, gardeners spend on average \$663 per household each year and contribute \$1.2 billion to the Pennsylvania economy. The landscape, nursery and greenhouse industries employ 38,000 people. The popularity of home gardening activities is expected to increase 20% over the next 10 years due to a 53% increase in gardeners, 45 to 64 years of age.

Cooperative Extension educators offer a variety of educational programs to assist consumers and green industry professionals. The Master Gardener Program continues

to grow, reaching 188,933 people during the year. A total of 293 new Master Gardeners in 23 counties were trained this year. Below are a few examples of accomplishments in various counties.

*b. Impact/Accomplishment:*

- 2,206 volunteers representing all 67 counties volunteered over 103,200 hours in the Master Gardener Program. Their volunteer time is valued at \$1,706,927.
- More than 1,000 grounds managers in one region attended seminars and landscape update meetings. Evaluations indicated:
  - 94% (N=104) of participants indicated they learned something that would help them in their jobs.
  - 86% (N=165) of participants indicated they learned something that they intend to practice in the current year.
  - 78% (N=380) of participants reported that they adopted a pest management practice, and 72% indicated they adopted a pesticide safety practice they learned about at a previous year's conference.
  - 99% (N=145) of participants learned a new skill to increase baseball field safety.
- 360 middle school students attended an agricultural technology/science field day program. A post training survey indicated:
  - 88% of participants understood how technological change positively influenced agriculture.
  - 85% of participants could name something they saw on the field trip that made their life safer.
- 86 participants attended a fall gardening symposium. 69 evaluations were returned.
  - 66 participants indicated they would try a new gardening technique, use a new plant or make a change in their landscape as a result of attending.
- Eight partners formed MAE scapes (Mid-Atlantic Ecological Landscapes) to create demonstration gardens to teach the principles of conservation landscaping. When the gardens are completed, the partners will launch an educational program.
  - The entrance garden is now completed and the first of two rain gardens has been constructed.
  - 100 people attended the open house and sale, netting over \$600 for the project.
- Courses were offered to work release and prison inmates at several facilities.
  - 5 men on work release completed a 12-week course with final grades exceeding 85%. Mentoring will continue post-graduation. One graduate is starting his own plant installation business.
  - 9 of the 15 male inmates who participated in 11 horticulture courses completed the program. Six passed the comprehensive exam and received a certificate.
- Urban families and youth learn about horticulture through community programs and at schools, camps, environmental centers and protective shelters. Students in one program started school gardens, grew plants indoors and learned about composting.
  - 2 gardens were successfully completed in one city by 40 youth and adults with produce from one of the gardens being shared with residents less fortunate.
  - 98% (N=40) of youth attending Farm Day Camp indicated they learned 3 new things about animal care and had a better appreciation of farm life.

- 19 extension educators and 70 Master Gardener volunteers staffed the exhibit at the Philadelphia Flower Show, responding to nearly 7,000 questions from attendees.
  - Master Gardeners working in two other counties offered 4 Workshops for the Gardener to 77 participants.
    - 100% of those surveyed indicated they learned new gardening practices that they planned to implement, e.g., using native plants, pruning, water less often, etc.
  - Master Gardeners in another county continued work on a therapy and historical garden at one state park and expanded the demonstration garden at another park.
    - The park reported increased usage of the Lake Side Center as a result of the expanded demonstration garden.
  - Master Gardeners interacted with about 900 people at the York Fair. They created an interactive display which was very successful.
    - 90 survey respondents indicated they would put their new knowledge into practice: remove invasives and avoid specific plants.
  - A committee of the Reading Public Museum approached Master Gardeners in one county initiating a partnership to restore and preserve the valuable horticultural specimens which were in decline. The Master Gardeners served as horticultural instructors and onsite supervisors for the community volunteers.
    - 12 Master Gardeners trained 35 Arboretum Assistants.
    - The contribution of more than 1,700 hours of work on the grounds translates to approximately \$29,000 in labor.
    - Area businesses and individuals donated tools and plant materials.
    - Private donors gave \$1,360 to provide spring bulbs.
    - The project was chosen the top Master Gardener project for 2004.
- c. *Source of Federal Funds—Smith-Lever 3b&c, and State matching funds.*
- d. *Scope of Impact—State specific and Integrated Research and Extension.*

## **Stakeholder Input Process**

During FY2004, Penn State Cooperative Extension developed and delivered extension educational programs based in large part on stakeholder input obtained during the comprehensive needs assessment of more than 7,000 citizens and stakeholders undertaken to develop the FY2000–04 Plan of Work, as described in our Plan of Work submission. In addition, each county conferred with their local advisory groups such as County Extension Boards, Program Development Committees, and volunteers as they determined the local focus of their educational programs prior to the beginning of the FY2004 program year. In a similar process, extension faculty in academic departments conferred with their industry and producer stakeholder groups to determine appropriate discipline-related focus of Plan of Work activities for FY2004.

At the regional and state level, administrators conferred with and received suggestions on program direction from advisory groups such as the Pennsylvania Council of Cooperative Extension Associations and the Penn State Agricultural Advisory Council <<http://agcouncil.cas.psu.edu>>.

Penn State Cooperative Extension's stakeholder input process was very useful this year in refocusing/reaffirming priorities and in identifying emerging issues. For example, during the course of the FY2004 program year, critical issues and concerns emerged among our stakeholders, which had not been priorities during the needs assessment and subsequent program development processes. Homeland security concerns caused resources and program priorities to quickly shift to an integrated approach to delivering extension educational programs. Each county extension office has identified an educator responsible for communication and cooperation with the local Emergency Management Coordinator. Penn State faculty have established communications with PEMA and the Pennsylvania Office of Homeland Security and cooperated with the Pennsylvania Department of Agriculture to educate veterinarians and agricultural professionals on the challenges and complexities of potential foreign animal disease introduction into the state.

Penn State Cooperative Extension encourages and supports broad-based representation of all facets of Pennsylvania's citizenry on all local, regional, and state advisory groups.

## **Program Review Process**

No significant changes were initiated in Penn State Cooperative Extension's Program Review Process during year four (FY2004) of the Plan of Work.

## **Evaluation of the Success of Multi and Joint Activities**

### **Multi-State Activities**

Penn State Cooperative Extension continues to collaborate with other states on important extension and extension/research activities. Many of these ongoing and successful educational activities had not previously been formalized by memoranda of agreement or other contractual arrangements. Support for many of these activities was not auditable to Smith-Lever dollars. Since the implementation of the current plan of work, the director and associate directors have entered into discussions with their colleagues in other states to formalize agreements in support of both ongoing and new multistate cooperative programs. Fiscal support for Penn State Cooperative Extension's ongoing and new multistate extension educational programs has been realigned so that it is auditable to Penn State's appropriated Smith-Lever funds. During the last year of the plan of work, Cooperative Extension reached the estimated cost target of \$700,000 (See Appendix A).

The Lake Erie Regional Grape Research and Extension Center and Management of Wildlife Damage are just two examples of ongoing multi-state activities that have consolidated states' efforts and which continue to grow, reaching wider audiences. While progress continues on many ongoing projects, new activities are being initiated which has resulted in an increase in the number of multistates efforts for FY2004. Documented impacts of multistate activities are noted in the brief summaries section of the report.

### **Integrated Activities**

Penn State under President Graham Spanier, is dedicated to the goal of becoming "the premier university in the nation in the integration of high-quality teaching, research, and service." Penn State Cooperative Extension and Penn State's Experiment Station continue in their commitment to integrating research and extension programming, fostering mutually beneficial interactions. Sixty-four percent of all Penn State Cooperative Extension faculty and staff working at the University Park campus have joint extension and research responsibilities. These faculty and staff members conduct and support basic and applied research which informs and shapes extension programs. Joint appointments are, and will continue to be, the norm in the College of Agricultural Sciences.

An example of Penn State's integrated response to emerging issues is the successful biosecurity and disease prevention activities such as Avian Influenza, Plum Pox Virus, Foot and Mouth disease, *E. coli* 0157 and the West Nile Virus. Other examples include ongoing projects such as PROSPER, an innovative model for bringing scientifically proven prevention to communities to strengthen youth, families and communities, and a study to determine how structured out-of-school experiences contribute to positive youth development. These 5-year research projects are being implemented through collaborations with Penn State, Iowa State University and Michigan State University. (See Multistate Brief Summaries).

Funds supporting the extension portion of joint positions (\$2,781,390) total 29.5 percent of Penn State Cooperative Extension's Smith-Lever appropriation (See Appendix B).

### **Multidisciplinary Activities**

All educational activities under Penn State Cooperative Extension's FY2000–04 Plan of Work were developed by multidisciplinary teams of faculty and field-based educators. Each of our Key Program Components has a multidisciplinary component. Penn State Cooperative Extension continues as a major participant in University-wide integrated, multidisciplinary efforts such as the Penn State Children, Youth, and Families Consortium and the Environmental Consortium. In addition, formalized agreements were forged between Penn State Cooperative Extension and other Penn State units (College of Medicine, College of Engineering, College of Health and Human Development, College of Earth and Mineral Sciences, College of Arts and Architecture, and Public Broadcasting, WPSX-TV) to provide multidisciplinary research and program support in critical educational program areas. One example of effective programming that resulted from these agreements is the "Creating Health" initiative. The first phases of the project focused successfully on osteoporosis and diabetes with significant progress now being made on childhood overweight and obesity programming. Cooperative Extension is partnering with The Pennsylvania Alliance for Nutrition and Activity (PANA) to build statewide capacity for developing an environment to support and promote active lifestyles and healthy food choices. Documented impact of this initiative is provided in the Planned Programs.

### **Guideline Questions**

- Penn State Cooperative Extension educational programs and activities—single state, multistate, multidisciplinary, and integrated—are based on the critical needs identified in our comprehensive statewide needs assessment of more than 7,000 citizens and stakeholders conducted in preparation for the development and delivery of the FY2000–04 Plan of Work, and on the ongoing feedback of our network of local, regional and state advisory and stakeholder groups.
- Each county monitors and records their success in reaching underserved and under-represented populations. Our Web-based reporting system currently captures under-represented audience contacts as well as other target populations like participants from Anabaptist groups and people with disabilities. Contacts reported statewide indicate Cooperative Extension's success in reaching underserved populations during FY2004
- Analysis of the outcome and impact data and narratives in the Web-based planning and reporting system continues to show very successful multi and joint program activities for all areas represented in the FY2000–04 Plan of Work. Our statewide efforts in food safety programs for training food processors and volunteers provide an excellent example of efficiencies that resulted from our joint programming endeavors (See Planned Programs for impacts).

## MultiState Extension Activities Brief Summaries FY2004

### Lake Erie Regional Grape Research & Extension Center

The Lake Erie Regional Grape Program (LERGP) is a regional, educational and research program between Penn State and Cornell Universities, and the grape industry. The educational component of the program is conducted by a four-member Grape Extension Team which consists of an area business management extension educator, area viticulture extension educator, senior area grape IPM (Integrated Pest Management) extension educator, and county extension educator (viticulture/commercial horticulture).

The Lake Erie Regional Grape Extension Team collaborated during FY2004 offering a broad range of programs and information to growers in Pennsylvania and New York. More than 900 growers attended meetings on a variety of topics. Examples follow.

- *Grape Berry Moth (GBM) Pheromone Trapping Network.* A GBM Pheromone Trapping Network was established at the request of growers in 2003. Nine pheromone traps were monitored in two high risk vineyards this year.
  - A total of only 13 GBM were captured the entire season indicating the pheromone dispensers were effective.
  - One grower commented, "We finally got them (grape berry moths) under control. This is the best that the grapes have looked in the last five years or more."
  - The most important measure of success of this project, from the farmers' point of view, is the acceptance by grape processors of grapes from these vineyard blocks. Cooperators were contacted after harvest and they indicated that "No loads were rejected by processors" from Vineyard A or C.
- *Lake Erie Grape Program's (LERGP) Information Transfer.* Grape Extension Team members and researchers contribute timely information concerning all aspects of grape production for use by farmers, extension educators and government and industry personnel to the web site <<http://lenewa.netsync.net/public/lergphom.htm>>.

### Natural Resource, Agriculture and Engineering Service Progress Report

As a funding partner of NRAES, Penn State Cooperative Extension faculty and field-based educators and stakeholders across the Commonwealth are entitled to a variety of educational resources to support or enhance programming efforts. The NRAES effort allows for collaboration on projects and activities between field-based educators, faculty, and stakeholders at participating universities.

Penn State, participating as a collaborator, providing both direct financial support and involvement of faculty and staff resources, allows the residents of the Commonwealth to receive the latest research and production practices information in four areas: horticultural production, dairy production, animal waste management, and consumer education while drawing on the expertise of faculty and staff at the 14 participating land-grant institutions.

**NASULGC Budget and Advocacy**—Penn State has participated as a member of NASULGC to retain the services of Fleishman Hilliard Associates to represent the policy positions of extension and agricultural research on budget and other legislative matters.

**NASULGC Extension Program Resources**—mandated assessment to support the work on behalf of the Extension System of Dr. Myron Johnsrud and Ms. Linda Kay Benning. An important component is the receipt of information and funding possibilities available to enhance programming related to critical issues facing the Commonwealth.

**NASULGC ECOP Assessment**—to support the work of the extension committee on Organization and Policy through NASULGC.

**NASULGC NELD Assessment**—to support the National Extension Leadership Development program sponsored by ECOP. The purpose of NELD is to enhance and foster leadership development in the Cooperative Extension Service at all levels. Penn State continues to financially support NELD. While Penn State does not have any interns in the current NELD class, previous participants (five to date) have moved into key leadership roles within the Penn State or another Land-Grants Extension System.

**NASULGC ESCOP/ACOP Leadership**—a Penn State faculty member is involved in this leadership development program designed to enhance and shape the future of the land-grant university system and higher education system by developing future leaders.

**MAAREC—The Mid-Atlantic Apiculture Research and Extension Consortium**  
Pennsylvania has taken the lead in an effort to establish a regional research and extension program to address the pest management crisis facing the beekeeping industry in the Mid-Atlantic region. A working group—with representation from the beekeeping associations, departments of agriculture, and land-grant universities from each of the following states: New Jersey, Maryland, Delaware, Pennsylvania, and West Virginia—meets twice a year to identify research and extension priorities for apiculture in the Mid-Atlantic region. The USDA/ARS (Beltsville Bee Lab) also participates.

#### **Commercial Vegetable Guide Progress Statement**

The Mid-Atlantic *Commercial Vegetable Production Recommendation Guide* is a cooperative effort of vegetable extension specialists from Delaware, Maryland, New Jersey, Pennsylvania and Virginia. These specialists participate in the annual revision and production of the guide. Growers look to the guide for current information on crop production and pest management.

In 2004, significant changes were made in specific crop Pest Management and Cultural Recommendations. Over 8,000 vegetable growers used the guide to improve production in the Mid-Atlantic Region in 2004.

#### **Management of Wildlife Damage in the Northeast**

Two multistate projects address wildlife damage concerns. Results of a 2001-2002 survey by a team from Penn State, Rutgers and Cornell University showed that the economic toll

from deer in the Northeast was much larger than previously thought, an estimated \$634 million. This damage survey and estimate was used as supportive data in the development of a new proposal, which was approved. Activities associated with the project resulted in initiation in 2003 of a first-time-ever, jointly-funded survey of agricultural crop deer-damage in New York to assess the effectiveness of site-specific deer management methods and other deer control options across the state.

- A summary of research targeted at reducing deer-vehicle crashes concluded that well-designed and maintained highway fencing, combined with underpasses/overpasses as appropriate, was the only widely-accepted method with solid evidence of effectiveness.

### **PROSPER Project**

PROSPER is an innovative model for bringing scientifically proven prevention programs to communities to strengthen youth, families and communities. The PROSPER project, a five-year collaborative research project, is being implemented through Penn State and Iowa State University. The project includes two successive groups of 6th grade students in 14 communities in Pennsylvania and 14 communities in Iowa. Seven communities in each state were randomly assigned to receive the PROSPER programming in 2003.

During the most recent year of the project, community teams—including school leaders, parents, community leaders, students, and health and social service providers—focused on the issue of identifying and securing local funding to sustain PROSPER programs. Cooperative extension educators led this initiative through grant writing, organizing local fund raising activities, securing in-kind donations, and exploring the potential for program support through the school districts and through local community agencies. The long-term goal is for PROSPER programs to become fully sustainable once the grant funding period has ended.

- A total of \$36,000 was secured in local funding to assist with sustaining local PROSPER teams.

### **Plum Pox Virus (PPV)**

Penn State Cooperative Extension continued its leadership role in collaborating with state and federal departments of agriculture, growers' associations, legislators and community members to develop and implement educational and research programs to educate growers, government officials and the general public about PPV and effective eradication methods. Growers continue to be supportive of the eradication program and are cooperating with Pennsylvania Department of Agriculture surveys and eradication activities. Because of the extensive educational and monitoring efforts of Penn State Cooperative Extension, PPV has been effectively contained with little spread during the past three years, thus preventing additional significant financial losses to growers.

- Property owners in several areas recently were released from the PPV quarantine, allowing them to once again derive income from their acreage.

### **Water Quality Issues in Poultry Production and Processing**

The objective of this project is to evaluate the impact of dietary management strategies to reduce the nitrogen and phosphorus concentration in poultry litter and manure and to

evaluate the practical and economic potential of fermentation to preserve nutrients in farm mortalities. Results of this work is communicated to the Pennsylvania Department of Agriculture and to extension educators who conduct training.

### **National 4-H Forestry Invitational**

The National 4-H Forestry Invitational is the capstone of the 4-H Forest Resources Projects. Individuals are selected by their state. Each state is coached by volunteers (most of them are professional resource managers) and are often assisted by extension educators. A Penn State extension educator served as co-chair of the event. Evaluations from 4-H participants showed increases in:

- Forestry knowledge (N=53); average rating before 2.31, after 3.69.
- Forestry skills (N=53); average rating before 2.20, after 3.60.

### **Western Regional Turfgrass Research**

Increased urbanization has been accompanied by a rapid increase in the area of turfgrass, such as home lawns, commercial landscapes, parks, golf courses, recreational facilities, and other greenbelts. There is great demand for research information on turfgrass irrigation management, techniques of turfgrass culture, environmental impacts, and new turf cultivars. The goal of this project is to foster exchange of information of current research and extension activities and to promote cooperative efforts among turf programs in the region.

### **Management of Small Grains**

Pennsylvania continues to play an active role in leadership in the extension activities of this multistate project for small grain diseases east of the Rocky Mountains. Several workshops were offered on crop production and disease issues for crop consultants and agricultural professionals and an in-depth session on soybean production in Pennsylvania. A survey of one educational program indicated:

- More than 79% of respondents (N=50) increased their skill resulting from the content the program.

### **Southeast IPM Working Group**

The purpose of the Southeast Pennsylvania and Delaware IPM Research and Extension Group is to provide education and information about integrated pest management to the ornamental horticulture industry. Educational activities for 2004 include:

The Industry Plant Health Care/IPM Summer Workshop, led by a team of Penn State extension educators and specialists, focused on a wide range of industry topics from turf management to insect pests. Approximately 70 professionals attended.

- 83.5% of participants indicated they increased their pest management skills.
- 46.9% plan to use new pest management methods as a result of attending.

A 7-week Integrated Pest Management Course, co-sponsored with Cooperative Extension by the Barnes Foundation, included topics of landscape pests and methods to implement an IPM program.

- Pre- post-test scores showed a 36% increase in knowledge. The average post-test scores was 82.7% (N=15).

### **Reducing Environmental Impacts of Animal Waste**

Research is being conducted to determine response of lactating dairy cows to dietary protein under various silage programs. A study consisting of 4 trials that varied the alfalfa to corn ratio to determine the effect of reducing dietary protein on milk production and nitrogen utilization in dairy cows was completed. Results have been included in extension communications to dairy producers.

- 17% protein in well-balanced rations may be sufficient for moderate-producing cows.
- Reductions in protein in diets will reduce nitrogen excretion, thereby reducing water contamination by nitrogen.

### **Beef Carcass Data Collection**

Beef producers, land grant universities, beef improvement associations and agribusiness require more detailed carcass data than a slaughterhouse can provide. Producers who want to improve carcass quality and beef cattle management require more detailed information on such carcass traits as marbling score, rib-eye area, yield grade, kidney fat, quality grade, etc. An agribusiness firm, MOPAC, which kills up to 2,000 head of cattle each day, cooperates with a Penn State extension educator to collect quality data for producers.

- Detailed carcass information was collected and returned to individual producers on more than 1,900 head of market cattle.
- Extension educators collaborated with extension personnel at 6 universities, providing carcass data on research projects and beef improvement programs.

### **Northeast Pasture Research and Extension Consortium**

The mission of the Consortium is to link livestock graziers and federal, state, land grant and private research and extension groups into partnerships that will identify, develop, coordinate and promote pasture research and extension leading to economically, socially and environmentally sound and sustainable grazing-based livestock production systems for the Northeast. In 2004, the Consortium stakeholders developed a list of 6 pasture priorities for the Northeast Region.

### **Rural Communities, Rural Labor Markets and Public Policy**

During 2004, efforts focused on the economic development needs of Pennsylvania's food processors. Local social and economic characteristics that influence the location and growth of these businesses in rural areas were examined. Additionally, research looking at Pennsylvania-U.S. migration patterns continues, focusing on young workers and the important factors in out-migration for this cohort. Results suggests that the state's "brain gain" initiative should focus on the quality of jobs generated and developing amenities, rather than simply job creation.

- The information on food processors is being used by Pennsylvania's Department of Labor (DLI) to identify, among other things, the industry's training needs and opportunities, as DLI defines its Targeted Industry Cluster Workforce Development efforts.

### **Rootstock and Interstem Effects on Fruit Trees**

The aim of this project—designed to address a number of high-priority areas within the North Central Region—is to enhance economically and environmentally sustainable practices in temperate fruit production by focusing on rootstocks. Faced with a competitive international market, the demand for higher quality fruit and strong pressure to reduce chemical use, tree-fruit growers need to look to alternative sustainable management strategies. Outreach activities include electronic information transfer, written material for growers and numerous educational programs.

### **Entomopathogens for Control of Anthropod Pests**

The objective of this project is development, evaluation and safety of entomopathogens in cryptic and soil habitats. The aim is to raise awareness for importance of soil organisms in providing benefits to agriculture, mainly through biological control of pests in soil. In 2004, interdisciplinary projects to examine the effects of various agricultural production practices on entomopathogenic nematodes and fungi were continued in Pennsylvania. The practices examined included transition to organic production and use of various cover crops. An extension bulletin on entomopathogenic nematodes was published, and 7 educational presentations were offered, reaching more than 500 people.

### **Structured Out-of-School Experiences and Youth Development**

The focus of this collaborative 5-year Penn State and Michigan State University project is to determine how structured out-of-school experiences contribute to positive youth development. The research will help parents, teachers, students and communities better understand how these experiences impact youth from different ethnic backgrounds, gender groups and age groups, as well as guide the design of programs that attract young people and enhance their development.

During FY2004, the fourth year of the project, a Penn State researcher collaborated with the University of Arizona to create the “National Youth Participation Study.” This study focuses on youth participation in organized activities such as band, debate team, school sports, 4-H club, etc. For more information about the study and the on-line survey go to <http://agexted.cas.psu.edu/fcs/dp/survey/participation/survey.cfm>.

### **Economic and Psychological Determinants of Household Savings Behavior**

This interdisciplinary research project recognizes that saving is an economic decision made within an existing social context, influenced by life cycle demands and the psychological characteristics of the potential saver. The unique contributions of this cross-sectional study are characterizing saving behavior as a continuum and developing an index to measure that continuum and to examine the impact of both personality and financial resources as barriers to becoming a saver or to saving more.

### **Fruit and Vegetable Marketing Innovations and Demand Assessment**

As the produce sector in the U.S. grows, markets are increasingly complex. There is considerable demand for models to be developed for estimating demand for many commodities. Producers, processors, and marketers/distributors benefit from production

and marketing research outputs which enable them to improve management decisions and efficiency. Consumers benefit from a more efficient production-marketing system. The proposed research can only be accomplished through the cooperation of researchers from various states by sharing of vital and timely information, division of research tasks, and cooperation through a unified body.

### **Efficiency of Producing, Marketing and Managing Environmental Plants**

The objectives of this project are to 1) evaluate alternative green industry plant production, establishment and maintenance systems; 2) evaluate regional competitiveness within the industry; 3) evaluate demand for plants, materials and services; and 4) evaluate the effectiveness of alternative merchandising techniques.

### **Cherry Improvement**

Most land grant universities no longer have a critical mass of researchers addressing the regional and national needs for cherry improvement. The cherry industry is important in both Wisconsin and Michigan. Our cherry researchers have expressed an interest in utilizing the multi-state research mechanism to foster greater interaction among their peers. At Penn State researchers have developed a sweet cherry planting for rootstock evaluation, which includes new New York cherry cultivars.

### **Improved Management Program to Control Apple Pest Infestations**

During the last several years, fruit growers in New York, Pennsylvania, and New Jersey have suffered severe financial losses because infestations by internal fruit feeding Lepidoptera have led to numerous loads of apples being rejected by fresh fruit markets and processing plants. If this new pest control crisis is not solved quickly, it could hasten the decline of this already beleaguered, important Northeast agricultural industry. This project is a team effort from three of the leading fruit production states to join together to solve a problem of importance to the whole region.

### **Mastitis Resistance to Enhance Dairy Food Safety**

Bovine mastitis is the most costly disease currently affecting dairy cattle. While significant advances have been made in controlling some types of mastitis, the complex etiology of the disease and ongoing changes in dairy practices dictate that new and more effective methods for control and treatment be developed. Single site studies are often limited in terms of expertise and cattle numbers. This multistate project provides these advantages.

### **Agricultural Safety and Health Research**

The purpose of this project is to establish a national Land Grant research and extension agenda for agricultural safety and health; enhance communication among those associated with agriculture in the Land Grant system; and provide leadership to develop a network of projects and programs to meet the national agenda.

### **Commercial Greenhouse Production System**

The goal of this project is to make significant advances in greenhouse production by improving the utilization of water and nutrients with related reduction in negative

environmental impact, developing a control strategy for natural ventilation of greenhouses, and improving the integration of automation, plant culture and environment into a cost effective, sustainable production system for vegetables, specialty and floricultural crops.

#### **4-H Curriculum Development**

Exploring the Treasures of 4-H, a collaboration of extension specialists from 6 states, is funded by the National 4-H Cooperative Curriculum System to develop and pilot a national curriculum for students in grades 2 to 4 to introduce them to the curriculum areas and activities available in 4-H. A Penn State faculty member is coordinating the national pilot of the curriculum. Over 75 sites from more than 25 states agreed to pilot the curriculum. The pilot will be completed in Spring 2005.

#### **Change Agent States for Diversity**

The Change Agent States for Diversity (CASD) project is a catalytic step in beginning the transformation of the land-grant system. A consortium of eight states, it is dedicated to supporting greater cultural diversity in the system by bringing technical skills and training to member states. Through a collaborative approach, the consortium is developing successful models and strategies that can be applied throughout the system.

The Pennsylvania catalyst team includes faculty, state program leadership, and county extension educators. During 2004, staff attended two face-to-face consortium meetings, participated in monthly telephone conference calls to address project implementation, held quarterly Pennsylvania catalyst team meetings and facilitated professional development. Pennsylvania hosted the multi-state Amish and Anabaptist Conference, the Hispanic Farmworkers Conference, as well as, the Migrant and Immigrant Health Conference. Under the leadership of a Penn State extension faculty member, an evaluation study for the consortium is being conducted. Regional extension directors have hosted regional professional development sessions for extension staff addressing diversity opportunities and issues. More and more county extension programs have been implemented creating an inclusive environment for many different aspects of diversity. A number of our extension educators serve on or facilitate community advisory committees focusing on diversity issues.

#### **Enhancing Health and Well-Being of Plain Communities**

The goal of this national conference was to educate and equip professionals in order to enhance their work and outreach efforts with Amish and Old Order Anabaptist groups. The conference provided a forum to share research findings and effective intervention strategies and an opportunity for professionals to network. Cooperative Extension's representative from the Pennsylvania Catalyst Team for Diversity served on the planning committee.

#### **Youth Equine Study and National Youth Horse Symposium**

A Penn State faculty member is involved in several multistate youth horse activities. The purpose of the pilot study—Impact of Equine Activities on Youth Development—is to develop a survey and methodology plan to assess the impact of youth horse programs on

youth development and horsemanship skills, and to focus of life skills. Approximately 1,000 youth in Pennsylvania and Colorado will be surveyed. Penn State also hosted the American Youth Horse Council National Youth Horse Leaders' Symposium, which was held in February 2005. The faculty member was involved in planning and conducting the event with colleagues from 11 states.

### **Mid-Atlantic Consortium Dairy Extension Inservice**

This training program is specifically designed for dairy extension field agents and includes cutting edge technical knowledge, case studies and innovative extension programs. A Penn State extension faculty member serves on the planning committee.

### **National 4-H Embryology**

A Penn State extension specialist serves as project leader and webmaster for the national Embryology project, a life sciences school enrichment program designed for use in the classroom. The curriculum, which helps students develop an understanding of biology concepts through direct experience with living things, is used by teachers to help meet the National Science Standards.

### **Wine Grape Program**

An wine grape extension educator is involved in planning various multistate workshops, grower meetings and conferences in cooperation with professionals and associations in 5 surrounding states. Examples include the Regional Viticulture Extension Agents meeting held in New York and the American Society for Enology and Viticulture Eastern Section Conference in Virginia.

### **Garden Mosaic Project**

The Garden Mosaic program, developed by a national leadership team of educators, is structured to bring together adults and youth in community gardens. Program activities provide opportunities for informal science education and community building. During the third year of the grant from the National Science Foundation, 249 urban youth from several counties participated in this summer project working with 63 adults.

### **Tri-State Tillage Conference**

The annual Tri-State Conservation Tillage Conference focuses on agricultural practices for improving yields, soil erosion protection and economic profitability. 156 people attended the meeting and 62 completed a survey.

- 77% (N=44) of participants who attended a previous conference made at least one significant management change, and 96% indicated they saved labor at critical times.
- 48% (N=44) of participants who attended a previous conference changed and improved crop rotation and 39% changed weed management practices.
- 48% (N=44) of participants who attended a previous conference increased the number of conservation tillage acres they farm.

### **Risk Management Programs**

One component of managing the risk of farming is understanding and utilizing Federal crop insurance products. Penn State, working with the USDA, Risk Management Agency

and the Pennsylvania Department of Agriculture, developed and delivers a regional risk management educational program. Other regional partners include Departments of Agriculture and cooperative extension in Delaware, Maryland, New Jersey and New York.

- Over \$40 million was returned to rural communities in these 5 states to reimburse farmers for crop losses in 2004 at least partly due to the efforts of this project.

### **Forest Farming – Advancing Online Learning**

This project will build on-line learning communities in forest farming, which is an agroforestry approach to land use and natural resource management. Extension educators from New York and Pennsylvania have been recruited to participate in developing and testing the on-line forest farming course, *The How, When and Why of Forest Farming*. An internet platform has been created and pilot testing will begin in 2005.

### **Penn Jersey Extension Project**

The 4th Northeast Small Farm Expo, a collaborative effort of partners from New Jersey and New York, attracted 3,200 participants. More than 65 workshops were offered on a variety of topics: rural living, natural resources, commercial horticulture, business, risk management, equine and livestock. Exhibitors provided demonstrations on products and services.

### **Mid-Atlantic Direct Marketing**

A coalition of land grant universities, USDA, and nonprofit organizations in the Mid-Atlantic region is dedicated to helping small and emerging farmers improve their financial success. The annual Mid-Atlantic Direct Marketing conference focuses on innovative marketing techniques. Starting, managing and growing a retail farm marketing enterprise requires knowledge and skill specific to this industry, and the conference is an excellent educational opportunity to enhance our knowledge base.

- 116 (n=123) of the survey respondents indicated they gained new knowledge.

## **Integrated Research and Extension Activities**

Penn State's College of Agricultural Sciences, Penn State Cooperative Extension, and Penn State's Experiment Station have a long-standing commitment to integrating research and extension activities at Penn State. At the dean's level, each associate dean has responsibility for cross-functional initiatives and activities. Each of the 12 academic department heads has an appointment split evenly between extension, research, and resident education. The dean, associate deans, academic department heads, director and associate director of cooperative extension, and director of the experiment station meet regularly to discuss current and future issues in integrated and extension programming.

The vast majority of faculty with research responsibilities in Penn State's College of Agricultural Sciences also have appointments in either extension or teaching, fostering mutually beneficial programmatic interactions. These faculty members conduct basic and applied research, along with their colleagues, which inform and shape extension programs. This research, in turn, is shaped by extension programs. Of the 354 faculty, staff and administrators at University Park with extension appointments, 227 are supported partially by Smith-Lever and research funds. Funds supporting the extension portion of joint positions (\$2,781,390) total 29.5 percent of Penn State Cooperative Extension's Smith-Lever appropriation (See Appendix B).

For example, a 5-year project to determine how structured out-of-school experiences contribute to positive youth development is a collaboration between Penn State and Michigan State University. The research will help parents, teachers, students and communities better understand how these experiences impact youth from different ethnic backgrounds, gender groups and age groups, as well as guide the design of programs that attract young people and enhance their development (Refer to Research Report). During FY2004, a Penn State researcher collaborated with the University of Arizona to create the "National Youth Participation Study." This study focuses on youth participation in organized activities such as band, debate team, school sports, 4-H club, etc.

**U.S. Department of Agriculture  
 Cooperative State Research, Education, and Extension Service  
 Supplement to the Annual Report of Accomplishments and Results  
 Multistate Extension Activities and Integrated Activities  
 (Attach Brief Summaries)**

**Institution:** Pennsylvania State University

**State:** Pennsylvania

**Check one:**  **Multistate Extension Activities**  
 **Integrated Activities (Hatch Act Funds)**  
 **Integrated Activities (Smith-Lever Act Funds)**

**Actual Expenditures**

<b>Title of Planned Program/Activity</b>	<b>FY 2000</b>	<b>FY 2001</b>	<b>FY 2002</b>	<b>FY 2003</b>	<b>FY 2004</b>
Lake Erie Regional Grape Research & Extension Center					96,461 *
Natural Resource, Agriculture & Engineering Service					16,949
NASULGC Budget and Advocacy					20,483
NASULGC Extension Program Resources					4,078
NASULGC ECOP Assessment					8,084
NASULGC NELD Assessment					2,290
NASULGC ESCOP/ACOP Leadership Program					19,155
Mid-Atlantic Apicultural Research & Extension Consortium					12,298
Commercial Vegetable Guide					7,521
Management of Wildlife Damage in the Northeast					38,737
PROSPER Project					105,927
Plum Pox					35,299

**Continued on next page**

\* Invoice from Cornell University for FY2004 was received and paid in FY2005. It is included in this report.

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**Director** \_\_\_\_\_  
**Date**

**U.S. Department of Agriculture  
Cooperative State Research, Education, and Extension Service  
Supplement to the Annual Report of Accomplishments and Results  
Multistate Extension Activities and Integrated Activities  
(Attach Brief Summaries)**

**Institution:**

Pennsylvania State University

**State:**

Pennsylvania

**Check one:**

- Multistate Extension Activities**  
 **Integrated Activities (Hatch Act Funds)**  
 **Integrated Activities (Smith-Lever Act Funds)**

(continued from previous page)

Actual Expenditures

<b>Title of Planned Program/Activity</b>	<b>FY 2000</b>	<b>FY 2001</b>	<b>FY 2002</b>	<b>FY 2003</b>	<b>FY 2004</b>
Water Quality in Poultry Production & Processing					16,432
National 4-H Forestry Invitational					8,339
Western Regional Turfgrass Research					9,616
Management of Small Grains					6,450
Southeast IPM Working Group					39,875
Reducing Environmental Impacts of Animal Waste					6,468
Beef Carcass Data Collection (MOPAC)					10,360
Mid-Atlantic Vegetable Recommendations (see Vegetable Guide)					11,550
Northeast Pasture Research & Extension Consortium					3,434
Rural Communities, Rural Labor Markets and Public Policy					7,222
Rootstock & Interstem Effects on Fruit Trees					13,771
Entomopathogens for Control of Arthropod Pests					4,680
Structured Out-of-School Experiences and Youth Development					1,523

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Director

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Pennsylvania State University

**State:**

Pennsylvania

**Check one:**

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 **Integrated Activities (Hatch Act Funds)**  
 **Integrated Activities (Smith-Lever Act Funds)**

(continued from previous page)

Actual Expenditures

<b>Title of Planned Program/Activity</b>	<b>FY 2000</b>	<b>FY 2001</b>	<b>FY 2002</b>	<b>FY 2003</b>	<b>FY 2004</b>
Economic & Psychological Determinants of Savings Behavior					15,508
Fruit & Vegetable Marketing Innovations					8,825
Efficiencies of Producing, Marketing & Managing Environ. Plants					8,824
Cherry Improvement					20,628
Improved Management Program to Control Apple Pest Infestations					3,987
Mastitis Resistance to Enhance Dairy Food Safety					25,002
Agricultural Safety & Health Research					10,613
Commercial Greenhouse Production System					10,278
4-H Curriculum Development					4,613
Change Agent States for Diversity					11,379
Enhancing Health & Well-Being of Plain Communities					9,676
Youth Equine Study and National Youth Horse Symposium					17,766

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 Multistate Extension Activities and Integrated Activities  
 (Attach Brief Summaries)**

**Institution:**

Pennsylvania State University

**State:**

Pennsylvania

**Check one:**

- Multistate Extension Activities**  
 **Integrated Activities (Hatch Act Funds)**  
 **Integrated Activities (Smith-Lever Act Funds)**

(continued from previous page)

Actual Expenditures

<b>Title of Planned Program/Activity</b>	<b>FY 2000</b>	<b>FY 2001</b>	<b>FY 2002</b>	<b>FY 2003</b>	<b>FY 2004</b>
Mid-Atlantic Consortium Dairy Extension Inservice					4,325
National 4-H Embryology					5,110
Wine Grape Programs					10,032
Garden Mosaic Project					6,888
Tri-State Tillage Conference					3,070
Risk Management Programs					2,605
Forest Farming – Advancing Online Learning					1,561
Penn Jersey Extension Partnership					9,687
Mid-Atlantic Direct Marketing					5,110
<b>TOTAL</b>					\$702,489

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**Institution:** Pennsylvania State University  
**State:** Pennsylvania

**Check one:**  **Multistate Extension Activities**  
 **Integrated Activities (Hatch Act Funds)**  
 **Integrated Activities (Smith-Lever Act Funds)**

**Actual Expenditures**

<u>Title of Planned Program/Activity</u>	<u>FY 2000</u>	<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>
Joint Extension/Research Personnel appointments					\$2,781,390
<b>Total</b>					\$2,781,390

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**Director** \_\_\_\_\_  
**Date**