

**Penn State Cooperative Extension
ANNUAL REPORT OF
ACCOMPLISHMENTS
AND RESULTS
FY2005**

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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 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 there were 27,314 participants engaged in programs related to profitability and sustainability of agri-food system enterprises. A subset of participants was surveyed, and 1,866 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. More than 25,500 participants took part in programs oriented to improving production management strategies. Of the subset of participants surveyed, 4,412 demonstrated the application of increased knowledge and skills, and 960 producers reported success in developing sustainable agricultural systems or adopting components.

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. More than 3,375 people participated in programs related to animal waste and nutrient management, with 17 percent demonstrating increased knowledge and skills to improve nutrient management practices.

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>>.

	FY2005
Human Resources (FTEs)	70.26
Fiscal Resources (Smith-Lever)	\$2,305,986
Fiscal Resources (match)	\$2,305,986

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

Increasingly, small farmers and entrepreneurs are seeking a means to increase the value of commodities or develop an agriculturally related business. Cooperative Extension offers a variety of programs on business planning, financial planning and risk management for farm owners. Several examples are provided below.

a. Brief description of activity:

In response to intense pressure for development in one agricultural area of the state, a program was developed to help agricultural producers explore agriculturally-based, non-traditional crops and enterprise opportunities. The Income Opportunities for Rural Areas program directly assists clients in developing their business and marketing plans and in the development of contacts used in business start-up or diversification. Support services included a conference, ongoing speaker series, business and marketing plan development sessions, and one-on-one client assistance. A survey was developed to assess the economic impact of this regional program. Several impacts from the evaluation are noted below.

b. Impact/Accomplishment:

- About 65 businesses generated more than \$1 million in cumulative gross revenue.
- Program clientele have invested over \$900,000 in starting these new enterprises.
- New Income Opportunities program enterprises created over 48 new part- and full-time jobs.
- 82% of program clientele have developed business and marketing plans or are in the process of creating a plan.
- After just two years of funding, the program has generated \$9.00 in income for every dollar spent on salaries and program support.

a. Brief description of activity:

Interest in marketing continues to increase, as does membership in grain marketing clubs in several regions of the state. Participating farmers from 18 counties in the central and southeast region farm a combined area of approximately 71,000 acres. Other club members include representatives of the agriculture industry and agricultural lenders, which adds a broad perspective to the risk management discussions and to the expertise within the group. The regular club meetings focus on a more technical approach to marketing concepts and methods to achieve greater

market prices, and with industry support there is an opportunity to secure high-level speakers for seminars held during the winter. The ultimate goal of the group is to market grain in the top 1/3 of a commodity's annual price range. Discussions of crop insurance were of added importance this year due to flooding in one region resulting from a hurricane.

b. Impact/Accomplishment:

- Crop insurance usage within the club membership has now increased to nearly 80%.
- More than 50% of the members informally report using some type of marketing practice to enhance price relative to cash pricing at harvest.

a. Brief description of activity:

Meetings offered to grain producers in one county focused on developing marketing strategies and improving marketing skills to increase farm revenue with a farm management team approach.

b. Impact/Accomplishment:

- 70 participants reported increased farm revenue as a result of attending meetings.
- Average on-farm-income increases of \$.05 to \$.27/bushel were reported (depending on type of crop).
- Based on the total acreage represented by the growers attending, these increases translate to a return to the regional economy of \$108,000.

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 is offered in various locations across the state. An evaluation of 92 former students from 11 classes was conducted.

b. Impact/Accomplishment:

- Of the 16 respondents, 6 are currently starting or have started a business since completing the course and 12 have expanded or reinvented their business.

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:

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 coordinated and supported by faculty, extension specialists and food processing experts at the Pennsylvania Technical Assistance Program (PENNTAP) who worked closely with extension educators to provide assistance statewide.

b. Impact/Accomplishment:

- 883 agricultural producers were provided with technical assistance (processing, business, marketing).
- 83 agricultural producers chose to initiate a value-added agricultural enterprise as a result of Center program.
- The dollar value of new value-added agricultural activities initiated as a result of the Center was \$1,283,200.

c. Source of Federal Funds—Smith-Lever 3b&c, State matching fund and USDA-Rural Development grant.

d. Scope of Impact—State specific, Multistate Extension 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 have had at least a small component that included agri-security. 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.

Cooperative Extension continues to expand the network of professional relationships important for emergency preparedness. Pennsylvania has initiated the creation of State Animal Response Teams (SART), and extension educators serve on the state advisory committee for SART. A statewide volunteer group—Volunteer Organization Assisting Disasters—has been formed under FEMA/PEMA/HS structure which led to formation of 23 CARTs. In one region of the state, a group of educators developed a program to educate first responders in animal behavior and safety procedures needed in working with livestock.

b. Impact/Accomplishment:

- 88 first responders in one region were trained. Two training sessions were evaluated:
 - 98% indicated they learned at least one new thing about animal behavior.
 - 92% of the responders indicated they were much more likely to feel comfortable responding to an animal emergency after the training.
- Three training sessions were held to teach large animal first aid to first responders. Fifty-one individuals received training in basic first aid and animal handling in emergencies.
 - 100% indicated that they would be more comfortable responding to an emergency following the training.
 - 93% of the attendees indicated that they learned something new.
- Educators report that 1,511 people have been trained this year and 584 risk assessments have been completed.

Animal Production

a. Brief description of activity:

Through farm visits and various workshops, educators provide producers with information about management changes that lead to improved production and labor efficiencies. For example, data and demonstrations that standardize milking procedures, reduce milking time, and increase milk production were provided to dairy producers and employees. Another program on hormonal synchronization, co-sponsored by a local large animal veterinary clinic, was offered to 150 dairy producers.

b. Impact/Accomplishment:

- One 225 cow dairy producer modified his milking procedure. As a result, milking time per cow was reduced without changing production per cow. One hour of labor per day was saved resulting in a cost savings of \$3,650 per year.
- A 200 cow dairy producer reported that he began adding bedding material more frequently in smaller quantities to his freestalls. The outcome: cleaner cows, increased stall usage, little change in the total volume of bedding material used per month. Total milking time per day was reduced, resulting in labor cost savings.
- One 105 cow dairy producer reported an increase of 20 lbs/day/cow milk production after instituting the hormonal synchronization program.

a. Brief description of activity:

Meat goat production is greatly increasing in Pennsylvania and producers are looking for information to help them become a profitable enterprise. The Goat Meat Home Study Course is now also offered via the Web. Seventy-three meat goat producers participated in the Meat Goat Home Study Course.

b. Impact/Accomplishment:

- Post course evaluations indicated that 90% plan to adopt one or more management strategies to increase profitability of their operation; 100% plan to consider more marketing options; and 80% plan to analyze their finances.

- 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 2005. Pesticide Education program educators provided training for approximately 6,500 agricultural pesticide applicator participants; 429 swimming pool managers; 18 agricultural science student teachers. Additionally, field-based educators provide opportunities for producers to learn about pest management and pesticide safety practices through various educational meetings, clinics, and conferences.
- b. *Impact/Accomplishment:*
 - 29 participants of various Crop Planning Workshops responded to a survey regarding the impact of the workshops on their practices.
 - 55% reduced pesticide use; 72% use pesticides more safely.
 - 41% changed how they manage specific pests.
 - 62% declared a “specific” new cropping practice to implement.
 - In another county, an Anabaptist farmer was taught how to make wire moth traps and was then contracted to supply traps for the statewide sweet corn monitoring program. One farmer reported saving 10 gallons of fuel (a \$276 value) by reducing the number of sprays and averting \$500 worth of damage by knowing precisely when to spray.
- 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. State wide programs focus on grain crops, forage crops, soil management, soil nutrient management, pest management, and sustainable agriculture.

- a. *Brief description of activity:*
 Faculty and field-based educators spent considerable effort during the year helping producers and industry cope with the aftermath of Hurricane Ivan, which impacted over 40,000 acres of corn and soybeans last year. Educational materials were widely distributed to producers through Pennsylvania Department of Agriculture (PDA), newsletters, and local extension offices. Additionally, in conjunction with PDA and FDA, a testing program was developed to provide producers some guidance for

marketing their crops. These guidelines were used as a basis for policy decisions by USDA-RMA on crop insurance and USDA-FSA on disaster payments for producers.

b. Impact/Accomplishment:

- Over \$62,000 in lab testing fees was saved by growers for submitted grain samples because of extension's involvement. Extension assistance allowed for over \$200,000 in Loan Deficiency Payments from FSA programs to be paid to growers and crop insurance claims resolved on over 15,000 acres of grain, valued at more than \$5 million. Residual claims are still being resolved in favor of the growers.

a. Brief description of activity:

Corn silage evaluation trials, in collaboration with dairy managers and producers groups in two regions of the state, have shown the feed quality of hybrids tested to be above average and increasing over time. In one region, top yielding varieties produced about five tons per acre above the county averages. Approximately 250 producers rely on these trial results. In another region, a two-year bunker silo density evaluation program of 42 silos on dairy farms will help producers improve silo management practices, leading to higher quality dairy feed production.

b. Impact/Accomplishment:

- Trial results and follow-up nutrition work with the producers indicated that feeding the higher energy lower fiber corn silages enabled them to reduce the amount of grain being fed by 5% to 10%. The gross benefit to the 250 producers is estimated to be approximately \$800,000.
- One producer reported density improvement of more than 74% on his 750 ton capacity bunker. At a silage value of \$35/ton, he saved nearly \$4,000 in potential silage losses. The total estimated gross benefit to participating producers was \$78,000.

a. Brief description of activity:

The entry of soybean rust into the southern tier of the U.S. poses a significant threat to state soybean producers, since over 49 thousand acres are grown in a 5 county area with a cash value of over \$7 million dollars. In response, a pest management team of faculty and field-based educators developed a Soybean Rust educational program designed to educate producers and their advisors on the potential for and management of Asian Soybean Rust on their crops. The program consisted of presentations, a video conference, the development of a new fact sheet and Web-based resources, and a coordinated scouting program conducted in conjunction with PDA and USDA-APHIS. As an example, an educator and a trained college intern routinely visited 3 farms in a 4 county area on a weekly basis collecting and observing soybean leaf samples for the fungus. No disease was detected in the region or the state in 2005.

b. Impact/Accomplishment:

- 6 large agronomic producers in the area reported making modifications to their sprayers in anticipation of the disease outbreak, and one producer applied preventative fungicides in order to assess the performance of his equipment.

a. *Brief description of activity:*

Disease forecasters (FAST and TOMCAST for early blight; BLITECAST for late blight) have been implemented within Pennsylvania. Implementation involved the establishment of an 18-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 tomato and potato growers promptly enough to affect day-to-day decisions about blight control.

b. *Impact/Accomplishment:*

- 255 growers attended meetings to learn about resistance of fungicides. 86% (n=219) of participants indicated they used at least one specific method to slow development of fungus resistance to fungicides.
- Results of a mail-in survey from Vegetable Gazette newsletter (N=150) and observation, three farms estimated saving the value of their tomato crops as approximately \$10,000, \$30,000 and \$50,000 respectively.
- On average, this program helped make it possible for Pennsylvania growers to reduce fungicide use by an average of at least 30% for early blight control. This could represent a savings equivalent to about 200 tons of fungicide used each year in Pennsylvania which results 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.
- For the 2005 season, when hot dry weather minimized the chance of late blight development, the primary benefit was 64% savings made possible by elimination of unnecessary sprays.

a. *Brief description of activity:*

Faculty and field-based educators have worked closely with the PDA, the Department of Environmental Protection (DEP), and livestock producers to develop nutrient management strategies for minimizing water quality degradation. The educators helped state regulators develop guidelines and regulations in 2005 to fast track the implementation of P index-based nutrient management planning. This group of educators also continued to develop the stalk nitrate test for corn to help crop producers better manage N fertilizer in corn.

b. *Impact/Accomplishment:*

- Over 900 samples were submitted to the Agricultural Analytical Services Laboratory in 2005, a 98% increase over 2004.
- 427 of the 900 samples showed excessive N levels indicating significant potential for crop producers to reduce expensive N inputs for corn production.

a. *Brief description of activity:*

Soil management educators conducted field days and conferences around the state focusing on increasing the adoption of no-tillage crop production. More than 1,000

people attended these programs, including a growing number of Anabaptist producers. Extension specialists and educators have helped lead a successful effort to develop the Pennsylvania No-Till Alliance, an organization of producers and professionals dedicated to promoting the no-tillage concept. These educators also conducted four tillage and no-till training workshops for over 100 USDA-NRCS, PA-DEP, PA-PDA and Conservation District personnel.

b. Impact/Accomplishment:

- 34 farmers who attended a previous Tillage Workshop completed an evaluation.
 - 18% of the participants increased no-till acres.
 - 12% purchased or leased no-till equipment.
 - 12% modified tillage practices to conserve organic matter.
 - 12% increased the number of minimum tillage acres.

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. Educators reported more than 3,375 people participated in programs related to nutrient management with 558 of these participants attending workshops or other educational activities related to air quality issues.

For the past five years, the educational components of the Commercial Manure Haulers Certification program were voluntary. In 2005, the Manure Hauler and Certification Act (Act 49) was passed by the state legislature. The Penn State certification program forms the basis of the new program, now mandated by the state. During 2005, professionals from the Pennsylvania Department of Agriculture and the State Conservation Commission worked with faculty and extension associates at Penn State to develop the final regulatory requirements. In addition, modified educational

materials were prepared, including handouts, PowerPoint presentations and self-guided workbook for entry level haulers. Formal training will begin in early 2006.

b. Impact/Accomplishment:

- 44 livestock and poultry producers participated in nutrient management certification training, and 66 individuals participated in advanced phosphorus training.
- 9 livestock producers completed certification requirements for the Pennsylvania Environmental Agricultural Conservation Certification of Excellence (PEACCE).
- 40 proposed livestock producing sites were evaluated for their potential to create odor conflict. The proposed operations included 19 swine, 19 poultry, one dairy, and one veal. Recommendations were made in written reports to the participants.
- 980 producers reported success in adopting components of sustainable agricultural practices; 298 indicated they implemented such practices.
- 39 attendees reported they implemented specific new Best Management Practices to control odor and/or protect water quality, with an estimated value of practices implemented equaling an average of about \$2,500 per location.
- About 17% of program participants demonstrated in some practical way that they increased their knowledge of ways to improve nutrient management practices.

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:

Farm work injury prevention programs focus on work and work exposure injury related to production agriculture. Activities help farmers, farm families and employees identify, eliminate, reduce and manage hazards and risks on the farm and at agricultural work sites. Programs specifically designed for youth include farm safety day camps, quiz bowl competitions and safe tractor operation. More than 1,400 adults and youth participated in farm work injury prevention programs.

b. Impact/Accomplishment:

- 291 participants attended an introduction to farm emergencies, and 258 participants learned appropriate actions for managing tractor overturns.
- Nearly all of the more than 90 participants in a farm fatality simulation program returned postcard evaluations and reported that they corrected specific farm hazards.
- 70% of the 19 people participating a Farm Safety Day indicated they intend to wear a helmet when driving an ATV.

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 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, more than 8,000 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, 1,222 participants were reported to have received these types of certification, and 3,781 youth received quality assurance certification/ethics training.

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 11,728 contacts were reported for programs related to food safety, and 4,316 participants demonstrated increased knowledge and understanding of practices to ensure safety of the food system. A total of 1,386 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>>.

	FY2005
Human Resources (FTEs)	11.52
Fiscal Resources (Smith-Lever)	\$346,570
Fiscal Resources (match)	\$346,570

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. More than 1,220 individuals completed quality certification training. Quality assurance and ethics programs are offered to 4-H youths across the state, with parents and youths receiving certification. More than 3,780 participants completed quality assurance certification and/or ethics training during the year. Several examples are provided.

b. Impact/Accomplishment:

- 148 swine producers representing 23 counties received certification training. A survey of good production practices on 78 swine farms revealed that pork producers are at a high level of compliance in areas of identification, medication administration techniques and swine stockmanship.
- Nearly 98% of drivers receiving Truckers Quality Assurance Certification training passed the certification exam.
- 520 youth from one region completed a survey related to ethics and quality assurance.
 - 95% (n=403) of respondents believe it is important to review entry and health requirements before going to a show and be informed about current health issues.
 - 93% (n=200) knew the three ways to prevent bruising in meat.
 - 91% (n=333) of survey participants knew the best location to give an intramuscular injection is the neck.
 - 88% indicated they plan to follow the quality assurance good production practice points.

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

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. An online course is being developed to teach food processing employees basic principles of food microbiology, food protection, cleaning and sanitizing, selection and care of food contact equipment and utensils and HACCP. Additionally, HACCP principles also are included as part of the ServSafe[®] training offered by field-based educators.

b. Impact/Accomplishment:

- 95% of participants (42 of 44) in a ServSafe[®] program indicated they gained knowledge in safe food handling in four or more areas, including HACCP.
- 5 (N=11) participants identified the HACCP principals for preventing foodborne illness.

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 offer numerous game meat programs and reach many individuals through news media and the Wild Game Meat Display at various venues. For example, a half day workshop was offered for deer hunters that included specialists from the Food Science, Wildlife and Fisheries and Veterinary Sciences Departments.

b. Impact/Accomplishment:

- Of the 28 individuals attending:
 - 75% indicated that they would plan to buy a pressure canner to process venison.
 - 95% indicated that they would buy and use gloves when field dressing a deer.
 - 95% indicated that they would share the safety information with at least one other person.
 - 93% learned that chilling the carcass and keeping it cool and dry were critical in handling the meat safely.

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. Certification and recertification classes are provided. In several counties, the ServSafe® 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. This year 1,386 participants passed the ServSafe® certification exam making them eligible to apply for certification. Most educators report that nearly 98% of participants pass the exam. An evaluation of one program is noted below.

b. Impact/Accomplishment:

- Recertification classes were conducted for a total of 127 participants; 93 of the 99 individuals completing certification passed the exam and are eligible for certification.
- A follow-up survey of participants (n=37) 3 to 6 months after the class indicated that
 - 76% increased frequency of at least one established food safety practice.
 - 43% implemented at least one new food safety practice.
 - 86% shared information from the class with others.
 - 76% purchased at least one new piece of equipment to improve safe food handling practices.
 - These participants indicated they serve approximately 14,400 individuals a day, who will benefit from the food handlers' attendance at classes.

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 educators 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. On-site training simultaneously boosts the return on the company's investment, by saving travel and lost-time costs associated with sending employees to a workshop. As an example, training was offered to 26 employees of a meat plant that processes hot dogs, hams and a variety of lunch meats and sausages. Three modules were presented.

b. Impact/Accomplishment:

- After Module 1, Microorganisms that Cause Foodborne Illness, participants scored an average of 9.1 on the posttest compared to 7.5 on the pretest.

- 79% of participants could identify at least one thing they learned; 46% learned something about personal hygiene; 56% learned about preventing cross contamination; 42% learned about bacterial growth.
- 88% of participants identified at least one thing they would do as a result of training; 72% personal hygiene; 40% cross contamination.
- One person commented “This class explained everything easier than any class I have been to before.”

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. An example from one county is noted.

b. Impact/Accomplishment:

- 161 individuals attended training at four sites. A follow-up evaluation was conducted approximately three months after each training with 87 evaluations returned. As a result of the training, participants indicated they started or were more consistent in the following areas:
 - 68% check food temperatures with calibrated thermometer.
 - 62% clean and sanitize equipment and utensils between tasks.
 - 59% use an ice bath to cool food.
 - 47% insure proper hand washing procedures.
- 67% of respondents reported that they purchased additional equipment to improve the food safety of their food fundraisers.

a. Brief description of activity:

Many non-profit organizations in Philadelphia provide ServSafe® certification courses for food handlers working in nontraditional food service settings such as soup kitchens and pantries, homeless shelters, school settings and community living arrangements. Although these organizations capably provide food safety training, they lack the tools to measure specific impact with regard to safe food handling practices. They have no current methods for monitoring participants who successfully complete their food safety programs and no methods to measure whether these graduates apply the principles and change food handling behaviors.

An observation checklist was developed and field tested in nonprofit kitchens and then refined. The checklist aimed to measure behaviors related to the six main goals of the Servsafe® program. Twenty-five of the 128 participants in programs for nonprofits during the year participated in a site visit 3 to 6 months after completing their certification requirements. The 25 site visits allowed the county educator to observe a wide range of operations, provide feedback to organizations and use the

information for course revisions. The process of completing the checklist will also assist the participants and establish baseline data to measure changes in the kitchens.

b. Impact/Accomplishment:

- The number of participants observed completing behaviors is listed below:
 - 92% (n=23) record refrigerator and freezer temperatures.
 - 92% (n=23) use FIFO and rotate food stock.
 - 80% (n=20) use proper hand washing techniques.
 - 76% (n=19) prevent cross contamination between meats and ready to eat food.
 - 20% (n=5) take food temperatures throughout the flow of food and log food temperatures throughout the flow of food.

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 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/My 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, 79,590 individuals participated in programs on nutrition across the life cycle. Of those participants surveyed, 7,516 identified strategies to decrease health risks, 9,972 reported an increase in healthful food choices and 3,681 reported making recommended lifestyle changes.

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>>.

	FY2005
Human Resources (FTEs)	27.57
Fiscal Resources (Smith-Lever)	\$799,156
Fiscal Resources (match)	\$799,156

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:

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. Evaluations of several programs are noted below.

Additionally, 14 counties planned, organized and conducted a regional conference, the Northwest Healthy Schools Summit, to educate school personnel, families and community members on advocating for school health councils. More than 240 people from 21 counties participated.

b. Impact/Accomplishment:

- A team of educators and diabetic advocates in one county, with a population that has higher than average diabetes-related problems, identified community issues and implemented school and adult educational programs for PTOs, school teachers, community organizations and a train-the-trainer program for day camps.
 - As a result of the programs presented at five elementary schools, all of the schools have now joined the PANA initiative.
 - 75 campers attended programs at several sites.
 - 100% (n=30) of the campers learned how to make healthy food choices.
 - 89% (n=45) reported they plan to follow the new food guide pyramid.
 - 87% (n=30) reported they will try to exercise at least one hour a day.
- A Shape Up PA program was offered through PANA in another county. Teams were formed with 38 youth and 71 adults participating. A total of 1,000 pounds were lost with an average of 200 activity hours per team. At the post celebration two months after the program
 - 84% of participants reported increased physical activity level, and
 - 67% lost weight as a result of the program; weight loss was 349 pounds.

- A six month post evaluation of the Northwest healthy schools conference was conducted. One hundred-one surveys were returned, representing 36 school districts.
 - 62 advocated for curriculum changes that effect health and physical education.
 - 55 reported being involved in establishing a school health council.
 - 48 reported being involved in reviewing school policies and practices.
 - 42 increased time for physical education.
 - 28 advocated training for food service personnel.

Diabetes

a. Brief description of activity:

The incidence of diabetes has increase 33% in the last several years so prevention is critical. Diabetes is a critical issue in many Pennsylvania counties. Extension educators offer a variety of programs related to diabetes prevention and management that include healthy diets, meal planning and physical exercise. Programs are often presented in collaboration with community partners. Additionally, video teleconferencing is being used as the effective delivery method for diabetes education. Several program examples are highlighted below.

b. Impact/Accomplishment:

- In on county, 380 individuals participated in several diabetes prevention programs.
 - 80% increased their knowledge of diabetes symptoms and risk factors.
 - 77% indicated they would change their eating and physical activity habits.
 - 75% agreed they would have their glucose tested.
- In another county, 175 participants attended an interactive Healthy Plate program.
 - 105 created a paper healthy plate template to use as a reminder of the principles.
 - 114 used food models to build a healthy meal and evaluated each others choices.

Osteoporosis

a. Brief description of activity:

Pennsylvania has the largest number of individuals diagnosed with osteoporosis in the nation. Strength training and proper nutrition have been shown to improve bone mass, muscle mass and improve the emotional health of many seniors. Extension educators were trained to deliver the research-based strength training course, Strong Women, and educators and certified trainers are offering this training throughout the state. A pilot program was held in one county with 60 participants, age 35 to 83.

b. Impact/Accomplishment:

- The post evaluation indicated that participants feel physically stronger, have more energy, sleep better, have less joint pain and are generally more active as a result of the training. Most of the women were able to more then double the amount of weight they were lifting at the beginning of the classes. Results form the Senior Fitness test showed improvement in all areas of the test.

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 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 18,993 people through face-to-face educational programs. As a result, educators identified 1,984 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 reported 19,896 contacts with adult participants. More than 2,620 of those surveyed indicated an increase

in knowledge and skills needed to apply the practices and principles to ensure private forest management and sustainability. More than 545 individuals indicated their intent to implement sustainable forestry practices. 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. Educational or career programs reached 6,290 youth participants this year.

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>>.

	FY2005
Human Resources (FTEs)	20.28
Fiscal Resources (Smith-Lever)	\$717,658
Fiscal Resources (match)	\$717,658

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, solid waste management, increasing understanding of watersheds and groundwater and environmental policy. 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 7,787 times in FY2005, an increase of 65% over last year.

Master Well Owner volunteers have been trained throughout Pennsylvania. Training workshops for these volunteers focus on topics such as well construction, well maintenance, water testing and treatment, septic systems and water conservation. In 2005, 241 active Master Well Owner volunteers in 58 counties personally interacted with 6,483 private water system owners. Volunteers provided newsletters, news articles and TV interviews that reached an additional 29,252 homeowners.

b. Impact/Accomplishment:

- Private Water Systems:

Water resources Web site visits represent more than a 250% increase since inception in 2002. An on-line web-page evaluation indicated:

- 85% reported the web site was helpful.
- 91% indicated they had taken some action or planned to take action to better manage their water resources as a result of visiting the site.

A follow-up survey of homeowners who interacted with Master Well Owner volunteers was conducted.

- 97% indicated that the interaction was beneficial.
 - 92% learned at least one new idea for private water system management.
 - 82% indicated they had taken an action to better protect their drinking water supply.
 - **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. A series of pond management workshops were held across the state in collaboration with the Pennsylvania Lake Management Society and several state and federal agencies. Results of an evaluation of 305 pond owners who attended one of the workshops follows.
 - 100% of attendees indicated that the workshops were helpful
 - 91% indicated that they planned to take some action to better manage their pond as a result of attending the workshop.
 - The most common planned actions were proper management of aquatic plants (59%), testing pond water quality (51%), managing pond fishers (23%), and reducing nutrients entering the pond (22%).
 - **Solid Waste Management:** Approximately 3,500 people attended more than 250 educational workshops on composting that were offered in 48 counties across the state. Educators also provide technical assistance to municipal officers. Evaluations of several programs offered to adults and youth are noted below.
 - 110 of 121 adult who participated in five composting workshops indicated that they would begin composting within the year as a result of training received.
 - 100% of the 180 students in grade 6 participating in six backyard composting training sessions demonstrated their ability to construct a compost pile.
 - 4 high school students participated in a compost train-the-trainer session. As a result, they taught 77 other students how to construct compost piles.
 - An educator in one community provided technical assistance to operators to develop composting sites and to apply for Pennsylvania DEP permit. Over 40 tons of yard waste from surrounding communities are composted each year.
 - **Groundwater and Watershed Education:** A total of 6,378 clients participated in watershed programs, including youth programs and stormwater management education. Water quality and non-point source pollution prevention programs were offered to 2,749 individuals through school classroom and community programs.
 - 3,197 participants indicated an increase in knowledge about water resource management.
 - 1,143 participants instituted best management practices to improve water quality.
 - An evaluation of one classroom indicated that 95% of students gained knowledge and an increased awareness of watersheds and erosion.
 - **Environmental Policy:** Programs related to environmental policy focused on nutrient management and policies related to management of land and water resources.
 - 536 participants demonstrated an increased knowledge of environmental policy.
- c. *Source of Federal Funds—Smith-Lever 3b&c, Multistate Extension and State matching funds.*

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

Planned Program – Sustaining Pennsylvania Forests

KEY THEME – Forest Resource Management

Managing Private Forests

a. *Brief description of activity:*

Pennsylvania's 12.5 million acres of privately held forests owned by 528,000 individuals, and families contribute an estimated 90 percent of the raw material to support the state's forest industry as well as invaluable ecological services to all the state's citizens. Unplanned timber harvesting is leading to significant long-term forest value sustainability problems relating to changed tree species composition and reduced biodiversity. To ensure the long-term productivity of private forests to supply ecological, social and economic value to Pennsylvanians, extension 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. Additionally, Forest Stewardship Volunteers provide support to the 23 county Woodland Owners Associations (WOAs) in Pennsylvania, covering about two-thirds of the state's 67 counties. Volunteers provide educational programs to thousands of forest owners and stakeholders.

b. *Impact/Accomplishment:*

- Woodland and private forest landowners attend conferences and workshops offered across the state on a variety of topics ranging from managing water and forest resources to educating the public on forest sustainability. Examples of evaluation results of several programs are noted below.
 - 76 woodland owners increased skills to improve success of regeneration of new trees and to use soil surveys to make management decisions.
 - 51 of the 90 participants indicated they had made significant changes to their operations as a result of attending programs that one county Forest Stewardship Committee had planned and presented.
 - Over 260 loggers and sawmillers increased knowledge of safety procedures.
- Forest Stewardship Volunteers reported contributing an estimated 38,000 hours (about 19 FTEs) of time. Conservatively, using \$40,000 per year contributed, this represents more than \$750,000 of service. They reported personally contacting 12,400 forest owners during this time. Additionally, 55 volunteers serve on local stewardship boards.

a. *Brief description of activity:*

Local interest in the American Chestnut Restoration program has led to the identification of a secure site in Mercer County for the establishment of a second American Chestnut Research Orchard. The initial planting has more than a 90 percent survival rate and was expanded in 2005. The family who owns this site dedicated over 200 volunteer hours in maintaining the orchard and hosting tours for

Cooperative Extension programs, the Woodland Owners Association, and scout meetings. More than 30 stakeholders participated in educational programs about blight resistant American Chestnuts for reintroduction in Pennsylvania forests, receiving training site selection, soil testing and proper planting techniques.

b. Impact/Accomplishment:

- 15 stakeholders participated in pollination efforts in 2005, as a result of attending the educational program.

Professional Development

a. Brief description of activity:

210 natural resource professionals, responsible for managing over 11 million acres of forestland, participated in Forest Health 2005. These professionals, representing 28 Pennsylvania counties, learned about the latest research and scientific information on insect and disease problems facing forest resource managers.

b. Impact/Accomplishment:

- 84% of the participants responding to the post evaluation indicated they intend to use or incorporate at least 50% of the knowledge and/or practices they learned.
- 81% of 106 foresters and natural resource professionals indicated they implemented practices that affect growth and management decisions.
- 91.5% of those foresters and professionals indicated they share their practices with others that will affect growth and management decisions on forest land in Pennsylvania.

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

d. Scope of Impact—State specific 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. Natural and environmental resource education through 4-H and other youth programs continues to be a major thrust of Cooperative Extension with nearly 5,000 youth involved. Through youth camps, retreats and state-level schools and institutes, over 2,000 youth participated in hands-on environmental learning activities. Additionally, fisheries science became a popular new Pennsylvania 4-H project in 2005, with nearly 500 new youth involved. A few examples are noted.

b. Impact/Accomplishment:

- 892 students in grade 5 could identify five products/benefits of Pennsylvania forests and knew the importance of forests in their local economy following a presentation.

- 229 youth attended forest ecology activities and increased their knowledge of whitetail deer biology, management, and impacts on the forest ecosystem.
 - Post-test scores increased an average of 28% over pre-test scores (N=98).
- 892 students in grade 5 increased knowledge and identified 5 products/benefits of Pennsylvania forests and their local economic benefits.

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

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. Educators reported that during the year, six new tree commissions were formed.

a. *Brief description of activity:*

The Northeast Pennsylvania Urban and Community Forestry Program enhances the livability of communities by improving the health of trees, forests and green space. The program’s integration of social and economic goals with natural resource improvements promotes investment in urban forests in a region scarred by mining and railroad activities. Since 1995, the program has involved more than 2,450 partners, some non-traditional partners, to complete 207 projects on degraded mine lands, in parks, along streets and highways, trails, river corridors, in commercial and cultural districts, schools and at tourist attractions throughout Northeastern Pennsylvania. The program has fostered community awareness and participation in stewardship related activities in a region that encompasses three watersheds with 1.1 million residents.

b. *Impact/Accomplishment:*

- 15 new communities/organizations participated in the program this year.
- 28 of 46 active programs were completed, and 25 new projects were funded.
- Partnership activities involved residents, students, contractors and professionals who contributed 802 work days in services to projects.
- Communities planted 1,236 trees and removed 217 high risk trees on project sites using certified arborist assessments and sound arboricultural practices.
- 342 of the bare root trees were planted primarily with volunteer labor at a savings of approximately \$68,000 to the program.
- A local utility company working with the shade tree commission donated \$43,000 in in-kind services related to tree pruning and removal in one small community.

a. *Brief description of activity:*

- The City of Wilkes-Barre is struggling economically and continues to lose residents and businesses. Their community trees are also declining from lack of care. The city

has not had a tree program or shade tree commission since the 1960s, now needed as it begins to focus on downtown and citywide revitalization that attracts businesses, residents and visitors. A partnership among community organizations, Cooperative Extension and the DCNR Bureau of Forestry has been formed. As a result of the partnership, the city has a newly activated tree commission, a greener gateway into the community and over 200 trained volunteer planters.

In another borough, the extension urban forester provided continued assistance in an Urban Tree Risk Assessment, a sample tree inventory to determine the feasibility of a profitable sustainable timber harvest.

b. Impact/Accomplishment:

- The partnership celebrated Arbor Day 2005 by planting 110 trees and 40 shrubs on a boulevard creating a northern gateway to the city along a very industrialized site.
- The tree inventory in the borough showed that large profits were unlikely but that revenues could offset hazard tree removal expenses.

Managing Wildlife

a. Brief description of activity:

Deer are having a negative effect on the sustainability of our forest due to population size being too large for the land to support. Deer Density and Carrying Capacity Workshops train participants to implement population and habitat monitoring programs on their own property or on property where they hunt.

b. Impact/Accomplishment:

- 192 participants of these workshops indicated they implemented a number of deer management practices/strategies.
- Results based on a three-year follow-up program survey (N=43) indicated:
 - 56% of respondents indicated they have begun to practice some form of quality deer management on a total of 6,104 acres as a result of attending the workshop.
 - 51% indicated they conducted a browse index survey on their property or hunting grounds covering more that 2,652 acres.

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.

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 for families within the Commonwealth. During 2005, 47,425 child care providers engaged in professional development activities through Cooperative Extension. 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 23,000 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. Cooperative Extension plays a significant role in collaborations and coalitions that help address these societal issues. One example is the tobacco prevention coalitions in communities across the state that reach school-age audiences through school activities, youth conferences, and interactive activities to improve air quality in public eating places. Through these programs, more than 27,000 individuals have increased their knowledge about the negative implications of tobacco use and tobacco smoke pollution.

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 152,457 youth participated in 4-H and other youth programming. Of these, 36,229 youth demonstrated the development of life skills such as decision making, problem solving, goal setting, and critical thinking. Additionally, 26,150 youth gained knowledge through educational programming in the life, physical, and social sciences, leadership, 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. More than 26,000 individuals participated in formal leadership and volunteer development programs, and 9,935 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, 3,986 individuals increased their knowledge of and/or performance of leadership skills. More than 19,600 persons volunteered 336,566 hours on various activities, which translates to a value of more than \$6 million as a contribution of time to benefit extension.

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 advancing citizen involvement in decision making. Cooperative Extension educators offer content and process related educational programs that help community leaders gain knowledge and skills in areas such as strategic planning, community planning, and land use issues—skills that are required to respond to the challenges and opportunities in today’s complex environment. A total of 10,963 people participated in programs related to community 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>.

	FY2005
Human Resources (FTEs)	174.86
Fiscal Resources (Smith-Lever)	\$5,153,050
Fiscal Resources (match)	\$5,153,050

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 down-linked on average to 55 Penn State Cooperative Extension sites across Pennsylvania. Nationwide, over 40 states enrolled in the Better Kid Care satellite training workshops. In almost every state, Penn State Cooperative Extension's Better Kid Care training has been certified which allows early childhood educators, teachers, and child care providers to receive training credits in their respective states.

More than 49,400 hours of training were provided to new center-based staff who successfully completed the New Staff Orientation (NSO) curriculum during the first 90 days of employment in child care centers. The curriculum was developed as a result of a study of center directors. It was discovered that very few conducted staff orientation for new staff, which in many cases led to high staff turnover, discontent, absenteeism, and low morale among the entire staff and less than quality care for young children. (See Multistates Extension Activities Brief Summaries for NSO impact)

b. Impact/Accomplishment:

- In Pennsylvania, over 46,400 child care providers were trained statewide enabling them to operate in compliance with state regulations.
- More than 23,000 child care providers received state-mandated certification to operate in compliance with state law through participation in satellite workshops or direct training.
- Over 5,000 legally unregulated child care providers received training through participation in satellite workshops or direct training.
- More than 2,500 child care providers received state-mandated certification through distance education web-based units.
- Over 14,700 child care providers enrolled in and participated in the print-based training that enabled them to meet minimum state standards.
- Over 81,500 hours of training was delivered via print-based programs.

- Over 35,640 hours of training was provided to new centered-based staff during the first 90 days of employment units.
- More than 507,900 educational documents were accessed via the Better Kid Care web site <www.betterkidcare.psu.edu>. This resulted in significant savings over mailing print materials.

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:

In one urban area, an active Child Care Advisory Board assisted in planning and implementing child care provider trainings. Through the committee's guidance and marketing efforts, 449 people received 1,390 hours of training. The audience for the child care provider trainings is racially diverse: 55% white, 42% black, and 3% Hispanic, which exceeds the county's minority census data.

b. Impact/Accomplishment:

- Eighteen of the participants completed a 30-week Child Development Associate certificate program to become qualified to work for Head Start or Keystone Stars, and possibly leading to higher earnings.
- Trainings were held in low income neighborhoods to encourage participation by all providers, which has increased the size of the program and earned an increased stipend from the Department of Public Welfare (DPW) for next year.

a. Brief description of activity:

In another county, 628 providers received training covering 8 knowledge areas. Certificates of completion were issued to 161 mail-based distance education enrollees, and 69 Web-based distance education enrollees. Additionally, the annual Early Years Are Learning Years conference reached 240 providers this year.

b. Impact/Accomplishment:

- 15 child care agencies cooperated on programs, and 21 child care collaboration efforts were implemented.
- 525 providers are in compliance with the DPW training requirement regulations.
- A compilation of evaluation results indicated that 55% of the providers (N = 592) listed important things they learned as a result of the workshops; 98% indicated they would be able to use the knowledge in their child care work.
- The annual Early Years conference provides the required six hours of training required by Pennsylvania law, thus an economic impact of over \$49 million of sustained employment is achieved for our community through this one event. When the additional Better Kid Care workshops are factored into the formula, the economic impact to our community is raised by \$22 million, yielding a total of \$71 million.

a. Brief description of activity:

A unique program is being offered to meet the needs of one county's Hispanic and refugee women. The Old Songs/New Opportunities (OS/NO) program provides

employment opportunities for these women at day care centers where children's singing activities have declined. New immigrant women, who have a repertoire of traditional children's songs, stories and games, are identified and taught the essentials of working in a day care setting through direct training and mentoring during supervised internships. Their songs are notated and recorded on a CD. The OS/NO graduates then use their child care training and traditional culture to train early childhood educators to use the native songs and dance. The project is a collaboration of seven local organizations: Erie Art Museum, Penn State Cooperative Extension, Hispanic American Council, International Institute, Early Connections, the YMCA of Erie, and St. Martins Center Day Care.

b. Impact/Accomplishment:

- 9 students completed the first OS/NO program; 7 were hired before the classes ended.
- 8 of the 9 are still employed in child care settings a year later. They also are providing training in culture and diversity to child care providers.
- While an extension educator was teaching a workshop at one of the centers, she heard the familiar sounds of an African melody. She was greeted by a provider in the infant room who attended the workshop, *If You Can Talk, You Can Sing*. The provider said "my infants just love the melodies and we play them every day."

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

d. Scope of Impact—State specific, Multistate Extension (40 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 and families at risk to prison inmates. Many programs are offered in collaboration with child services.

b. Impact/Accomplishment:

- Parenting 101 has been offered for more than three years in one county. The program, under the Focus on Our Future Collaborative Board, is being evaluated by the committee to determine future needs. While the Venango County Jail provides most referrals to the program, referrals also come from judges, probation and other human service agencies. This program is being expanded to include the general public. Additionally, Anger Management programs are now being offered.
 - 751 parents have attended Parenting 101 since its inception, the majority of whom were not required to attend (only 231 were mandated).
 - One parent reported using the 'Stop and Think' anger management strategy she had learned. The problem was resolved "...and I didn't end up in jail."
- In another county, Parenting Education workshops were offered to 211 participants. Seventy-one of the participants completed evaluations. Of those
 - 67 indicated they increased their awareness of child development.

- 38 indicated they learned at least one new parenting skill that they planned to implement.
 - Parenting workshops were offered in several other counties. In one county, 158 participants attended—90% were court ordered or Children and Youth Services clients. An increase in attendance by other parents and childcare providers interested in increasing their skills also has occurred.
 - Parents report improved communication skills with children and former spouses, and agreements to settle divorce or custody issues are being resolved.
 - Participants mandated to take the anger management series were able to regain visitation or custody of their children.
- 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:*
- In response to changing family structures and unstable family situations, especially among low-income families who face many stresses, two curricula were developed to strengthen relationship building among adults and youth, and in-service trainings were offered to 27 county-based educators to deliver the *Connecting Families* and *Connecting to My Future Family* programs across the state. *Connecting Families* is a four-session program to teach adults seeking information and ways to enhance their skills to improve their adult relationships. The six-session *Connecting to My Future Family* program is designed for adolescents who are interested in information and strategies to cope with dating situations.

The programs were conducted in collaboration with various agencies such as Head Start, Family Literacy, CareerLinks, and the Department of Public Welfare. These collaborations increased the likelihood of participation since amenities such as child care, transportation assistance, and snacks or meals could be provided to participants.

- b. *Impact/Accomplishment:*
- 323 adolescents were reported to have participated in *Connecting to My Future Family* programs, and a total of 155 pre/post surveys were completed.
 - Overall 88% (N=137) of participants scores increased when pre- post-scores were compared.
 - Those questions that were rated the most frequently in which positive learning had occurred were about the following concepts:
 - “Can identify ways marriage will change my life.” (N=75)
 - “Understand that conflict is a natural aspect of relationships.” (N=72)
 - “Love is a relationship that changes as one grows old with another person.” (N=65) and “Can describe how infatuation and love are different.” (N=65)
 - 85% (N= 85) of the group changed their beliefs about healthy relationships.

- 72 individuals participated in the *Connecting Families* program, both couples and individuals (56 females and 16 males). The participants were low-income as designated by various agency criteria.
 - Overall 40 individuals scores increased from pre/post in learning.
 - Those questions that were rated the most frequently in which positive learning had occurred were about the following concepts:
 - “Can identify positive things we can do as a couple to strengthen our relationship.” (N= 20)
 - “Know how ‘you’ statements increase conflict.” (N= 20)
 - “Understand that conflict is a natural aspect of relationships.” (N=19)
 - 85% (N=34) of the group changed their beliefs about healthy relationships.

a. *Brief description of activity:*

The 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. Technology is used as a vehicle through which young people are engaged in learning and contributing. The primary audience involved in the YET program is freshman and sophomore high youth. These students are targeted through referrals from teachers, principals and support staff. In addition, participating youth contribute to others in their community through service activities.

Facilitated by the site coordinator, the after-school club is conducted at the local high school for about 20 members. Skill development and learning, relationship building and opportunities to contribute are embedded in the design of program. In the second year, two new curriculum areas were launched: GPS and GIS. The GIS curriculum is being developed by the Penn State Land Analysis Lab and the YET project. The YET member’s experience enabled them to provide feedback about this curriculum that has helped in the refinement of this statewide 4-H curriculum.

b. *Impact/Accomplishment:*

- Pennsylvania YET members showed a significant increase in overall scores for the GPS knowledge and GIS this year.
 - Scores for GPS knowledge had a 30% increase from 46% to 60%.
 - Scores for GIS knowledge had a 24% increase from 45% to 56%.
 - Significant increases in spreadsheet use and presentation graphics also occurred.
- YET members were engaged in community service or “helping other” projects, which include computer workshops for senior citizens, website development for local non-profit organizations, teaching GPS and GIS workshops at Conservation Field Days.

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 ranks seventh among the states in terms of number of children living in grandparent-headed households, with over 164,000 children in this category. Kinship caregivers, particularly grandparents, face a host of emotional, legal, and daily living challenges in the position of raising a second family. Children in these families also are twice as likely to exhibit high levels of behavioral and emotional problems. Cooperative Extension is taking a leadership role and joining with other organizations in the state to develop resources, services, and supports for kinship caregivers and the children they are raising. Educators conducted a series of seminars throughout the state to educate over 1,800 human service professionals about the needs and resources for kinship caregivers. A manual on Kinship Care in Pennsylvania was developed and distributed. Examples are noted below.

a. Brief description of activity:

Several Kinship Care Retreats were conducted in the Southwest region of the state to help 35 kinship caregivers and 63 children. In the Northwest Region, educators collaborated with the Erie Center on Health and Aging to address the special needs of caregivers in the area. As a result of a meeting of 21 community agencies and interested individuals, a county task force was established which meets regularly.

b. Impact/Accomplishment:

- An evaluation of one group of attendees at a kinship care retreat indicated that 100% (N=4) of the grandparents learned two new ways of communicating with their grandchildren, and 98% (N=7) of the grandchildren realized that their grandparent really cared for them by the rules they set.
- New kinship care support groups were developed for 48 families in two different counties, while established support groups in other counties continue to engage in educational activities and special events.

a. Brief description of activity:

Family caregivers and health care professionals need to continually update their skills about the basic needs of the elderly, the challenges they face, and how these changes affect elders' functioning. Additionally, Personal Care Home Directors are required by the DPW to earn 6 credits of continuing education each year. In one region, extension educators offered a program to 45 professionals working with elderly people. The workshop on "Enhancing Skills for Eldercare" included information on issues such as depression and aging, eldercare assessment and resources, intergenerational programs, and assistive devices. The intergenerational "Caring for the Caregiver" program provided caregivers with information on understanding chronically ill aged, developing caregiver coping skills, and learning about community resources.

b. Impact/Accomplishment:

- Post evaluation results of the Enhancing Skills program indicated that 83% (N=45) of participants gained helpful information on dealing with difficult behaviors, and 75% indicated they intend to pass on information they learned at the workshop.

- 15 caregivers of chronically ill elderly family members completed the series: 80% indicated they were more confident in their ability to give care; 70% recognized they were not alone in this challenge; and 60% identified one coping skill they would try.
- 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:*
 Pennsylvania’s families face many challenges that threaten their livelihood and family well-being. Access to resources and the ability to manage resources effectively are key factors to family stability and strength. Families must be able to save, to spend based on goals, and to manage debt responsibly to be financially secure in the present and in the future. Extension educators provide a variety of programs to individuals to establish a firmer financial foundation. Several examples are noted.
- b. *Impact/Accomplishment:*
- The Family Savings Account (FSA) program, funded by the Pennsylvania Department of Community and Economic Development, provides funds to families earning 200% or less of the federal poverty level and who are saving for one of five approved goals (education, home purchase, car, home repair or a business).
 - 13 families graduated from a program on basic financial issues.
 - While enrolled, they accumulated \$23,870: 7 families purchased cars, 5 saved for home repair goals, and one family saved for education goal.
 - PA Saves is a pilot project designed to assess the effectiveness of a financial education program on the knowledge and practices of adults. The program was offered in four counties and focused on the following themes: financial organization, spending plans, credit issues, and savings. Seventy-seven participants, (treatment – 38; control 39) were in the project.
 - A significant difference was found between the knowledge scores of the treatment and control group on the posttest (M=8.39 vs. M=6.35 p<.001) and the delayed posttest (M=7.97 vs. M=6.65, p<.01) suggesting that the treatment groups’ knowledge increased because of participation in the educational program.
 - High School Financial Planning Program (HSFPP) instruction and resources were provided to 325 high school educators in 2005. A national evaluation indicates young people who studied the HSFPP curriculum for at least 10 hours not only significantly increased their knowledge of financial concepts and issues but also improved their financial behavior in the ensuing months.
 - HSFPP was implemented in 188 schools reaching 17,320 youth in Pennsylvania.
 - A series of financial programs was offered to 400 low-income youth at a Job Corp Training Center. A random sampling of students who completed the training showed knowledge gain on the following:

- goal setting (n= 57); deductions from paycheck (n=55)
- spending plans (n=57); pay-yourself-first concept (n=42)

a. *Brief description of activity:*

Workforce training has been identified by the state of Pennsylvania as a critical issue to reviving the state’s economy. Of special concern is the out migration of the most highly skilled workers and youth. County educators provide various programs to address issues of youth retention and career choice. For example, an educator in the nine county Central Region works collaboratively with the Workforce Investment Board (WIB) system to provide leadership for programs and services for 250 at-risk youth. These efforts assist youth in staying in school or obtaining a GED, increasing their awareness of careers, and industry-based occupational experiences.

b. *Impact/Accomplishment:*

- 179 youth exited the program with a high school diploma or GED and employment.
- Supplemental youth programming was offered to in-school youth: 83% (N=142) obtained their diploma or GED.
- Of the older youth who became employed, 77% (N=30) retained employment after six months.

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.

The project’s Advisory Team developed and implemented the second “Ready for Jobs Fair” at the site of one of the collaborators. More than 225 job seekers from the surrounding Coatesville area—the major low-income community in the county—attended the fair. Additionally, 118 participants enrolled in the Life Skills and Job Readiness Training offered in 5 locations this year.

b. *Impact/Accomplishment:*

- 91 of the participants completed the training.
- 73% of participants have or were paired with a trained mentor.
- 85% of participants have high school diplomas or are enrolled in a GED program.
- More than 92 of graduating participants obtained employment in various fields.

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. Nearly 112,000 youth participated in 4-H programs in Pennsylvania during FY2005. More than 57,430 youth participated in 4-H school enrichment projects, approximately 25,700 youth participated in 4-H clubs, 22,180 participated in special interest projects, and about 4,400 participated in camping programs. This year more than 5,850 youth enrolled in equine activities. New curriculum materials also have been developed for leisure education and communications, resulting in increased enrollments. A few examples are noted 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.

b. Impact/Accomplishment:

- Enrichment projects such as the 4-H Embryology program enable youth to apply basic principles of mathematics, science, English and health through hands-on experiences. Cooperative extension educators provide training, resources and support for the classroom teachers. Classroom teachers continue to use this enrichment program and parents comment on their children's enthusiasm and the knowledge they gain from the project. More than 49,500 youth participated in the 4-H Embryology project statewide. An evaluation of 172 teachers in one region follows.
 - 164 agreed that 4-H embryology was a useful addition to their teaching unit.
 - 163 agreed that students demonstrated patience, cooperation, sharing and responsibility.
 - Examples of teacher comments: "My students remember this experience as the best unit every year!" "Writing skills improved." "Vocabulary increased."
- 150 youth participated in the Character at Work program, which provides youth an opportunity to learn workforce skills and the character traits that are essential for honest and dependable employees. These skills will help enable students to obtain and retain work and contribute to their communities as youth and later as adults.
 - 85% (N=80) of participants showed improvement in their workforce skills in areas of communication, team work, problem-solving and knowledge of careers.

After-School Programs

a. Brief description of activity:

Participation in 4-H programming in after-school settings continues to grow, and 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.

b. Impact/Accomplishment:

- In a survey of participants (n=66) in the Project ALERT drug prevention curriculum in one county, 97% of respondents indicated they would not take marijuana if it were offered to them.
- Improved collaboration on programming among agencies and school districts in one county has led to all five county school districts participating in the 21st Century Community Learning Centers Afterschool program. Grant funding has supported the program and a recent award will enable an increase in participation from 200 to 270 youth. Site coordinators report that youth in afterschool programs have a higher daily attendance record and lower rate of youth leaving the program this year. Parents comment that having homework done afterschool has improved family time at home.

a. Brief description of activity:

More than 225 youth participated in Mini-Society programs in several counties during which they learned how the economy works and how to start a business. Evaluations from several programs are noted.

b. Impact/Accomplishment:

- 98% (n=24) learned the importance of working together to create a community.
- 95% (n=160) of participants indicated they were able to accept and respect people who are different from themselves.
- 95% (n=42) of participants indicated in a post-test they knew the meaning of scarcity.

Healthy Lifestyles Education

a. Brief description of activity:

Tobacco prevention programs are offered to students from pre-school to high school in several counties across the state. Educational activities include interactive puppet shows, skits, discussions, and a carnival. In one county, 17 pre-schools with 545 students learned about clean indoor air. More than 27,000 children, teens, and adults became aware of and increased their knowledge of the negative health implications of tobacco use.

b. Impact/Accomplishment:

- A letter-writing campaign by 4-H County Council was instrumental in encouraging 68 restaurants in southwestern Pennsylvania to become smoke-free.
- The Project Alert curriculum was used to teach alcohol, tobacco, and other drug refusal skills to 881 students in 12 middle schools. Students showed a 25% increase in knowledge level of refusal skills in post tests.

- A coalition in one county reported that 60% of municipalities are displaying tobacco prevention signs at outdoor parks and ball fields.

Civic Education

a. Brief description of activity:

This year 69 youth participated in 4-H Capital Days during which they tour the Capital, attend workshops and meet with their area legislators. The workshops focus on topics such as parliamentary procedure, careers in government and how bills become law.

Participants are assigned to a political party (Green or White Party), hold committee meetings and then a mock house session. Collaborators for this two-day educational program include representatives from the legislature, the Pennsylvania Department of Agriculture and other agencies.

A study was conducted the previous year (FY2004) to assess participants' knowledge, understanding and attitudes toward civic engagement and the roles and functions of the state government. Sixty-nine of the 77 participants attending that year completed the pre and post tests. Comparisons of the pre- and post-test scores showed significant improvements relative to the areas noted below.

b. Impact/Accomplishment:

- Functioning of state government (66% vs. 80%).
- Process of how a bill becomes law (64% vs.80%).
- Working of various governmental agencies within state government (56% vs. 81%).
- A majority of the participants indicated they are more likely to participate in various organizations (in their school or community) as a result of attending Capital Days.

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:

The Learning Today Leading Tomorrow (LTLT) curriculum is designed to help individuals develop and strengthen their personal leadership skills so they can play active and constructive leadership roles in their communities. Educators in every region have received training to use the curriculum, and the program has been offered 104 times in 49 counties. For example, in one county, the LTLT program was offered at cooperative extension board business meetings, and 19 of the 29 members completed the course.

b. Impact/Accomplishment:

- An agreement was reached with the Conservation Districts in two regions of the Commonwealth to conduct training for district leaders, line and clerical staffs, and district board chairs.
- In one county, 13 individuals from non-profits and businesses participated in the Leadership 2020 program. 85% of participants indicated they increased their knowledge; One participant noted, “I now have the leadership abilities to pass onto others I work with regularly.”

a. Brief description of activity:

Extension educators conduct leadership education to prepare adults to meet the expectations of the 21st century. Leadership programs include workshops, conferences, and volunteer leader training. Programs give participants 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. An example is Leadership Huntingdon County, a program designed to develop a community leadership base by increasing both leadership skills and awareness of community issues through monthly learning sessions. A one-month follow-up survey was conducted.

b. Impact/Accomplishment:

- 82% (n=13) of class members of Leadership Huntingdon County increased leadership skills; 59% changed the way they approach volunteer work; 100% indicated they learned valuable information about their community.

a. Brief description of activity:

In 1995, several extension agents and community leaders identified the need to develop and conduct a program committed to developing a nucleus of future leaders with the skills to lead communities to develop positive solutions to local issues. A leadership development program for high school juniors from schools in a five-county area was established and has continued each year since 1996. Students meet each month with the program focused on diversity, teens and the law, local government, economic issues, health and human services, and the environment. During 2005, 54 students from 13 schools participated in the program.

b. Impact/Accomplishment:

- 37 community resource persons volunteered 114 hours of their time bringing expertise to the program.
- Student comments included : “My leadership skills were improved, and I learned how to deal with many community conflicts.” “I learned that by taking an active role in being a leader many things can be accomplished.”
- One student responded three months after the program “I want to let you know what a great experience this was for me. It has not only taught me to be a better leader but gave me the opportunity to work with other student leaders to make me a better person.”

- 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:*

Several counties in Pennsylvania are in various stages of developing and implementing The Future of Agriculture (FOA) project in their communities. 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. One example is the progress being made in Westmoreland County.
- b. *Impact/Accomplishment:*
 - A volunteer group is planning the implementation/action projects from the information gathered from farm surveys.
 - The following initiatives have been established:
 - Farm Education Series. This 11 sessions series provides information on a variety of farm and business related topics. Information is also provided by organizations, such as the county Conservation District and Agricultural Land Preservation, USDA Rural Development, USDA Natural Resource Conservation Service and the USDA Farm Service Agency. This series may be offered on an annual basis.
 - Consumer survey and marketing projects are in progress.
 - 16 members of the Task Force report that meetings have been constructive.
- a. *Brief description of activity:*

Extension educators provide a variety of content and process related educational programs and information required to equip communities with the tools needed to analyze and respond to challenges and opportunities. The employee skills training programs in rural northwestern Pennsylvania provide excellent examples of community and workforce development efforts. A consortium comprising 11 manufacturing companies, cooperative extension, and higher education council was established. The aim is to provide pre-employment training to support permanent employment in the region. This is an employer driven process; employers determine what training is needed. The extension educator also serves on the regional WIB, assisting in the coordination of incumbent worker training for healthcare and other manufacturing companies.
- b. *Impact/Accomplishment:*
 - 54 additional employees have been hired.

- New classes were developed to address identified skill gaps.
 - 14 employers have developed training plans for their employees.
 - Businesses report a direct financial benefit as a result of the workforce training.
- a. *Brief description of activity:*
One of many examples of preparing the next generation of community leaders is the Youth Community Planning Program, an introduction to community planning which used an interactive planning/land use exercise. The program, offered in a rural community, included a community survey/needs assessment that was completed by middle school students in the classroom and with community members.
- b. *Impact/Accomplishment:*
- 98% (N=124) of the middle school students could list one thing they learned about planning for a community. One student responded “You have to think from all points of view to get the best community.”
- 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

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.

- a. *Brief description of activity:*
The Master Gardener Program, with nearly 2,000 volunteer Master Gardeners, continues to grow each year, serving more than 188,000 people. A few examples of training and volunteer efforts are provided. The Capital Region horticulture team has created an advanced diagnosis certificate program, and 48 Master Gardeners from seven counties participated. In one county, Master Gardener volunteers maintain a horticulture call line. They logged 1199 telephone calls and e-mails this year. In another county, Master Gardeners taught composting workshops to 98 participants, and 88 bins were distributed. The Master Gardener volunteer outreach effort in another county included 153 presentations, demonstrations, and gardening information booths.

b. Impact/Accomplishment:

- 100% of Master Gardeners are using their diagnosis skills at least once a month; 87% reported that the information they learned was helpful in answering questions.
- A mail survey of consumers who used the horticulture call line indicated that 89% (N=53) had received a solution to their problem; 92% were given clear information about how to resolve their problem.
- Of those people responding to a composting workshop survey, 45% (n=41) are already composting; and 55% (n=51) indicated they intend to start composting as a result of attending the workshop.
- An evaluation of 17 Master Gardener Volunteers presentations was conducted. Of the 215 responses, 95.3% (n=205) indicated they learned something new; 84.5% indicated they plan to try something new or change what they have been doing.

a. Brief description of activity:

Extension educators provide a variety of programs to diverse audiences from green industry professionals to Christmas tree growers. A few examples of program impacts are noted below.

b. Impact/Accomplishment:

- 25 green industry professionals increased their ability to identify and use shade trees in Pennsylvania landscapes.
 - Six months after attending the workshop, 76% (N=21) of respondents indicated that the knowledge gained increased the quality of their business operations.
- Christmas tree production is a leading industry in one northeast county. As a result of programs that address pest and management problems, the educator has seen tree quality improve during his 20 year tenure.
 - Of the 79 people who responded to a post-program evaluation, 88% indicated they would follow recommendations to control pest problems; 96% indicated they plan to incorporate at least one shearing practice into their operations.

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

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

Stakeholder Input Process

During FY2005, 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. A statewide needs assessment process was undertaken also in the spring of 2003 in preparation for the development in 2004 of the Penn State Cooperative Extension State Plans of Work. A widely advertised Web-based needs assessment survey was available to the general public, and extension educators in each county conducted focus groups to obtain stakeholder input concerning major programs to be conducted in the new Plans of Work. 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 FY2005 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 FY2005.

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 FY2005 program year, critical issues and concerns emerged among our stakeholders, which had not been priorities during the needs assessment and subsequent program development processes. Faculty and field-based educators spent considerable effort during the year helping producers and industry cope with the aftermath of a hurricane, which impacted over 40,000 acres of corn and soybeans. Educational materials were widely distributed, a testing program was developed in conjunction with PDA and FDA to provide producers some guidance for marketing their crops. These guidelines were used as a basis for policy decisions by USDA-RMA on crop insurance and USDA-FSA on disaster payments for producers.

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 FY2005 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. 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 \$1,000,000 (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 FY2005. 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-five percent of all Penn State Cooperative Extension faculty, administrators 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). Additionally, our statewide efforts in food safety programs for training food processors, food handlers and volunteers provide an excellent example of efficiencies that resulted from our joint programming endeavors (See Planned Programs for impacts).

Funds supporting the extension portion of joint positions (\$2,839,800) total 30 percent of Penn State Cooperative Extension's Smith-Lever appropriation (See Appendix B).

Multidisciplinary Activities

All educational activities under Penn State Cooperative Extension's FY2000–06 Plan of Work were developed by multidisciplinary teams of faculty and field-based educators. Each of our Key Program Components has a multidisciplinary component. The recent establishment of the Environmental and Natural Resources Institute in the College of Agricultural Sciences is an example of efforts to enhance the effectiveness of our environmental work and promote greater collaboration among scientists within the college and across colleges at Penn State. 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 is the significant threat that the entry of soybean rust in the U.S. poses to growers in Pennsylvania. A pest management team developed educational programs and Web-based resources that provide valuable information to producers, and a coordinated scouting program is being conducted in conjunction with Pennsylvania Department of Agriculture and USDA-APHIS. Collaborations with a faculty member in the College of Earth and Mineral Sciences have been effective in providing methods for producers to track the long distance movement of the disease. The Web-based soybean rust information network was developed by this faculty member in cooperation with a private weather data company and is the USDA/AHPIS Public Soybean Rust Web Site. 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 citizens and stakeholders conducted in preparation for the development and delivery of the FY2000–06 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 planning and reporting system currently captures under-represented audience contacts and people with disabilities. Contacts reported statewide indicate Cooperative Extension's success in reaching underserved populations during FY2005. Analysis of the outcome and impact data in the reporting system continues to show very successful multi and joint program activities for all areas represented in the FY2000–06 Plan of Work.

MultiState Extension Activities Brief Summaries FY2005

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).

During FY2005, 38 programs were offered to growers in Pennsylvania and New York. Approximately 850 growers attended educational events such as the annual conference, workshops and various meetings on a broad range of topics. One component of the LERGP Extension Team's 2005 educational commitments involved Concord Grape Technical Assistance trainings mandated by the Trade Adjustment Assistance (TAA) Program. In a cooperative effort with the North East Center for Risk Management Education, a team was brought together to develop the mandatory training materials needed by growers to qualify for the program. A Concord Grape Technical Assistance Curriculum, which includes a manual <http://www.taaforfarmers.org/Commodities/GrapesNewYork/> and PowerPoint presentation, was developed for grape growers.

- All of the growers that qualified for the TAA Program were successfully trained. A total of 171 growers completed the mandatory training and qualified for the cash payment of \$3.06/ton up to \$10,000 (on 2003 crop), potential tuition costs for up to 104 weeks of full-time classroom education, and participation in the intensive training portion of the program.

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—two Penn State faculty members and a field-based educator are involved in leadership development programs (Food Systems Leadership Institute and Lead 21) designed to enhance and shape the future of the land-grant university system and higher education system by developing future leaders.

NASULGC eXtension Initiative Assessment—to support development of eXtension. This initiative is led by ECOP of NASULGC to advance the science and practice of engagement and outreach of colleges and universities to people of the states they serve.

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. Over 8,000 vegetable growers use the guide to improve production in the Mid-Atlantic Region. In 2005, a faculty member assisted in evaluating tomato breeding lines as part of a Northeast Research project.

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.

- In Pennsylvania, a movement study of deer hunters was completed. Hunters reported walking 2.5 times farther from roads that was evident from the GPS data. This information will be useful for evaluating impacts of changes in harvest regulations.

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 2005, 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. All sites in Pennsylvania obtained local funds to sustain PROSPER programs, securing a total of \$50,000.

- Early findings indicate that overall, youth from PROSPER communities with the Strengthening Families Program in grade six reported that their parents are using better child management practices, are more consistent in their discipline, use less harsh discipline (yelling) and have families that stick together and support each other more.

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.

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.

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.

Soybean Diseases

Pennsylvania participates with other states, including those of the North Central Region which produces 80% of soybean grown in the U.S. Phytophthora root rot remains one of the most serious diseases of soybeans. Annual meetings are held to exchange reports on soybean diseases and soybean disease research.

- Resistance testing of Phytophthora sojae field isolates indicated that most remain susceptible to fungicides containing metalaxyl, one of the main management tools for soybean producers in limiting losses to the disease.

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.

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.

- Stakeholder advocacy effort was successful and nearly \$500,000 was restored by the Congress for sustainable forage livestock systems research and research on nutrient management to protect water quality carried out at the ARS Pasture Systems and Watershed Management Research Station, University Park, PA.

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.

Rural Communities, Rural Labor Markets and Public Policy

In the new economy, knowledge and critical thinking are often the most critical component of the production process. Today, knowing how to do things well is often more important than what you do. Unfortunately, rural communities continued to be plagued by the out-migration of one of their most valuable assets—young workers with college degrees. In 2005, our research continued to look at the forces that influence the migration decisions of young, educated workers. Building upon the research base, this project examines the extent to which local governance and local government structure influence out-migration to help better understand how the political organization of rural communities influences decisions on staying or leaving.

- The results are useful to policy makers, as they suggest the importance of acting cooperatively, rather than competitively.

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. 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.

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.

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. To view the on-line survey go to

<http://www.humanserviceresearch.com/evaltools/screen1.cfm>

- To date, faculty from the University of Arizona, Michigan State, and Penn State have been able to initially identify the motivation why youth participate in certain out-of-school programs. Two empirical articles on minority youth participation have been accepted for publication.

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.

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.

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.

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.

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.

Carbon Sequestration and Distribution in Soils

Soil erosion results in a considerable economic loss to landowners because of reduced productivity of eroded soil, and to society at large because of degradation of surface water by sediment and sediment deposition, and emission of greenhouse gases into the atmosphere. Knowledge gained from the proposed research will contribute to a more quantitative understanding of agroecosystems on global C balance and increase to our understanding of the effects of erosional processes on the amounts and landscape distribution of C and organic matter.

Migration and Dispersal of Agriculturally Important Biota

The aim of this project is to promote interdisciplinary research focused on the biotic and abiotic processes directly influencing migration and dispersal of biota, and to assist in developing management strategies for migratory and dispersing biota.

Production and Handling of Perennial Nursery Stock

Plant production, transition handling, and reestablishment of nursery stock continues to be challenging in light of new plant introductions and growing techniques. It is essential for researchers to understand past and current problems and constraints in order to design integrated research approaches to address issues facing perennial plant producers.

- Pennsylvania research has provided growers and landscapers with a list of landscape trees that are not susceptible to Asian longhorned beetle (ALB) infestation. Municipal arborists, private arborists, and federal agencies now have data on ALB to assist in quarantine monitoring in infested sites and to allow inspection in vulnerable sites near warehouses and shipping facilities.

Chemistry, Toxicity of Soil Residuals

Disposal of residual waste products is a problem that requires practical scientific information to determine if the residual constituents can be safely reused without harming the environment or unfavorably impacting nutrient and trace element pathways.

The group's work focused on the bioavailability of nutrients in manure or biosolids amended soils has focused on phosphorus availability in residuals amended soils.

- The University of Florida working in cooperation with Penn State University has found that total P content (Pt) and several soil test measures of 'plant available' P have proven to be unreliable measures of bioavailable or environmentally relevant P in biosolids and manures and in soils amended with the materials.

Multi-state Evaluation of Wine Grape Cultivars

This research project will test the performance of clones of the major global cultivars and of new or previously neglected wine grape cultivars in the different wine grape growing regions within the U.S. This work will improve the competitiveness of U.S. grape growers and wineries by providing performance and quality information that is much needed for planting decisions.

Renewal of Agriculture of the Middle

The American food system has increasingly followed two new structural paths: while small-scale farm and food enterprises in many regions have thrived by adapting to successful direct markets which enabled them to sell their production directly to consumers, giant consolidated food and fiber firms have established supply chains that move bulk commodities around the globe largely to serve their own business interests. This has had a disastrous effect on independent family farmers—it has led to a disappearing “agriculture of the middle.” The main thrust of the project is to help these farms develop competitive alternatives to commodity agriculture/alternatives which can potentially be much more sustainable economically, socially and environmentally.

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 coordinated the national pilot of the curriculum with more than 75 sites in over 25 states.

- The pilot was completed in 2005, and the curriculum is being distributed nationally.

Community Tool Box

This toolbox provides accessible tools to local community and economic development (CED) practitioners, such as community leaders, newly elected officials, extension educators, and community technical assistance providers, to increase their knowledge about basic CED issues and be better equipped to assist in decision making and determining the future of their communities. Format, material, and tools have been developed jointly by faculty, extension educators, and other sources. The web site <www.cdtoolbox.net> is a joint collaboration between Cornell University and Penn State University and is maintained by the Community and Rural Development Institute at Cornell. While primarily intended for rural communities, these community and economic development tools will help communities be empowered to improve residents' economic opportunity and quality of life.

Agricultural Safety and Health

Agricultural emergencies often present situations that are dissimilar to more familiar emergency circumstances. Programs such as Farm Family Emergency Response and Emergency 1st Aid Care for Farmers are intended for farm families, employees, and other community members to learn how to best handle the immediate demands of agricultural emergency situations. PAgricultural Rescue Training prepares emergency first responders

for agricultural emergency challenges. These multistate programs provide both direct instruction as well as train-the-trainer instruction for emergency medical technicians, first aid, and health care community outreach providers and instructors. Additionally, Safe Play Areas on Farms demonstration projects illustrate the necessary elements for a play area to be considered safe. Penn State coordinated and conducted an evaluation of the effectiveness of the demonstration projects at the 2005 Pennsylvania Farm Show and during the 2005 Wisconsin Farm Technology Days.

Reducing Ammonia Emissions from Poultry Houses

The purpose of this collaborative project with Kentucky and Iowa was to determine aerial ammonia (NH₃) emission rates/factors of poultry confinement facilities, quantify the efficacy of methods for abatement through dietary and manure management, provide research-based information to be used to establish realistic guidelines for poultry operations, and educate producers and companies on means to minimize adverse impacts on the environment while improving production efficiency. Results have been widely disseminated through popular and scientific articles and a Web-page. Technology transfer was assured by involvement of the industry.

Mid-Atlantic Regional Water Quality Program

This regional partnership among land-grant universities in Pennsylvania, Maryland, Delaware, Virginia and West Virginia, and CSREES, was developed to advance water quality protection and restoration efforts in the Mid-Atlantic by providing water quality science support, training, and education.

Northeast Corn Improvement Conference

This cooperative project promotes interaction and discussion of breeding and management objectives related to corn production in the Northeast among both academic and industry collaborators. At a conference held every February, key participants from several states present research results and discuss current issues. Key topics addressed recently include unique insect and disease issues related to corn production, breeding and management of transgenic crops, and development of value-added traits in corn.

Change Agent States for Diversity

The Pennsylvania Change Agent States for Diversity Catalyst Team continues to influence a number of extension initiatives. Several examples follow. Penn State Cooperative Extension's Plan of Work (POW) assessment conducted in 2004 included focus groups from non-traditional audiences. All POW teams will consider these focus group results in designing and implementing the new plan of work with the expectation of new outreach and delivery strategies to reach diverse audiences.

Professional development for extension educators is provided on an on-going basis, and the Extension Director's Initiative requires that every county staff member complete 8 hours of professional development training addressing diversity issues a year. The extension administrative leadership program selected its first fellow dedicated to supporting diversity initiatives. The program is designed to provide leadership experiences for extension educators who desire to aspire to upper extension administrative positions. Cooperative

extension also hired a Professional Entry Program (PEP) employee at the county level. PEP provides graduates from diverse cultural and socio-economic backgrounds with professional work experience related to their career goals. Additionally, a diversity Web site provides a quarterly newsletter, program materials, diversity focused curriculum, educational publications, and resources for educators <<http://diversityeducation.cas.psu.edu>>. To review program highlight reports, which describe many county and state extension programs that reach diverse audiences, visit <http://diversity.cas.psu.edu/PSU-DiversityPrograms.pdf>.

Putting YOUTH Back into Sports

This project addresses the impact of youth sports on communities and youth. The objective of the curriculum is to address how extension educators can help youth, parents, coaches and communities understand what youth need from sports. During three national service trainings 77 educators received training. As a result:

- 46 participants plan to conduct parent trainings, 41 plan to conduct coach trainings.

National and Regional Equine Efforts

Youth Equine Study—The purpose of the Impact of Equine Activities on Youth Development survey was to assess the impact of youth horse programs on youth development and horsemanship skills, and to focus on life skills. A sample of 982 youth horse program participants between the ages of 12-18 were selected in Pennsylvania and Colorado. The response rate following mailings was 33.5%. Results of this study provide valuable information for youth horse programs which should be useful when developing curriculum, planning activities, and seeking funding and resources.

- A significant positive relationship ($r=.501$, $p<.01$) was found between total horsemanship skills development and life skills development.

National Youth Horse Symposium—Penn State hosted the American Youth Horse Council National Youth Horse Leaders' Symposium held in February 2005. The faculty member was involved in planning and conducting the event with colleagues from 11 states. A record 503 conference attendees from 34 states participated in the symposium.

eXtension National Equine Activities—This national team of equine experts includes a balance of adult and youth educators whose experience and content delivery methodology extend beyond the traditional classroom walls. The team will use internet-based technology and cooperation among multiple universities and equine organizations throughout the U.S. to deliver programs to a diverse clientele. The team recently identified several priorities and directions to pursue for maximum clientele impact.

National Poultry Waste Management Symposium

Faculty members are serving on national planning committee for 2006 conference to be held in Arkansas. Program includes regulatory updates, poultry production and poultry processing sessions related to issues such as manure management and processing water for discharge into waterways.

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 Wildlife Habitat Evaluation

Penn State Cooperative Extension has continued its strong associations with the National 4-H Wildlife Habitat Evaluation Contest and the National 4-H Forestry Invitational. Prior to both national events, a state wildlife field day and a state forestry day were held for Pennsylvania youth. These events attracted over 225 participants with the themes of wildlife habitat improvement and forest conservation.

Farm Finance and Management Analysis Training

Farm Finance Analysis Training (FFAT) and Production Management Analysis Training (PMAT) courses were offered. The PMAT course includes basic production management information that is applicable to all producers as well as an innovative self-assessment Production-Impact Plan to improve cash flows.

New Staff Orientation for Child Care Centers

The New Staff Orientation curriculum, a national extension program, was designed and implemented in several states in FY2005. The 15-hour curriculum provides the basic knowledge and skills for new staff in child care centers. Under the direction of the center director, learners not only gain knowledge but are required to practice necessary skills. Feedback is provided to each individual learner.

Results of an evaluation of a randomly selected group of learners (889) and directors (275) who participated in the study follows.

- 65% of the directors indicated New Staff Orientation (NSO) helped retain staff.
- 90% of directors indicated NSO enabled them to save time and to effectively train new staff in centers.
- 93% of new staff reported NSO helped them feel more comfortable in their new job.
- 86% of new staff indicated they learned the basics of caring for children.

Public Perceptions of Genetically Engineered Food

Based on the first two steps in the study of consumer perceptions of genetically engineered salmon, five manuscripts were submitted. The last step of the study, including revision of the information sheet and production of the draft questionnaire, was designed and finalized. This was modified to address weaknesses found in cognitive interviews (N=13) and the version to be used in the final survey was produced.

USDA Intervention Project

Water washes and chemical rinses were evaluated under laboratory conditions to reduce bacterial populations on beef surfaces. The data and recommendations from the laboratory studies were incorporated into a 29-page training booklet and 12-minute training video for distribution to 15 very small processors in Pennsylvania, Texas, Idaho and Washington as part of the in-plant implementation phase of the project.

- The laboratory experiments, data, and training materials can be used by the 5000+ small or very small meat establishments to meet regulatory requirements set forth by USDA-Food Safety Inspection Service to reduce pathogens in the food supply.

American Society of Animal Science Meeting

A Penn State field-based educator is serving as chair of the Ruminant Nutrition Program Committee for the 2006 Joint Annual Meeting of the American Society of Animal Science and the American Dairy Science Association. The meeting, which has an international component, will be held in Minnesota, July 9–13, 2006.

Northeast Center for Risk Management

The mission of the center is to improve the risk management decision-making processes of agricultural producers in the Northeast Region through a comprehensive educational program. A Penn State field-based educator serves on the center’s Advisory Council.

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.

Celebrating Mid-Life Conference

A Penn State field-based educator served as chair of the second “Celebrating Midlife: The Best Is Yet to Be” conference held in April 2005 in Pennsylvania. Topics focused on midlife issues such as financial security, health and wellness, and family caregiving. 127 individuals attended the conference, targeted to both lay and professional audiences.

- 90% of the respondents to a survey identified two ideas they plan to implement as a result of attending the conference.

Wine Grape Program

A 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. One focus of the group is developing a viticulture distance learning curriculum for regional growers and a world-wide audience. The educator also serves on the board of the National Grape and Wine Initiative, an effort to develop priorities, secure funding, and coordinate research and extension efforts across the nation.

Managing the Hispanic Workforce

Two conferences, the third in a series, were offered in cooperation with Cornell University to all sectors of the agricultural industry. The objective of the conference was to increase owners’ and managers’ understanding and appreciation of cultural differences in the workplace. One-hundred thirty people from Pennsylvania, New York, and other states participated in the conferences organized by a Penn State faculty member. About 50 people also attended an extension program organized by county educators in northern New York that featured invited speakers from Penn State, Cornell and Northern Iowa

University on Managing Hispanic Workers. Results of the evaluations of those attending the conferences and extension program reveal several common application themes.

- As a result of attending the conference, participants plan to: Increase day to day communications with their Hispanic workforce, enhance personal relationships with them, learn about their families, organize health and safety training, help them solve important practical problems like wiring money to their homes, and do “little things” such as provide phone cards, maps showing where the employees’ homes are located.

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. Extension educators collaborated with extension personnel at six universities, providing carcass data on research projects and beef improvement programs.

- Detailed carcass information was collected and returned to individual producers on more than 3,000 head of market cattle.

Tri-State Tillage Conference

The annual Tri-State Conservation Tillage Conference focuses on agricultural practices for improving yields, soil erosion protection and economic profitability. 121 people attended the meeting and 42 completed a survey.

- 60% (N=35) of participants responding to the questionnaire and who attended a previous conference made at least one significant management change, and 97% (N=37) indicated they saved labor at critical times. Nineteen of these individuals estimated an average labor savings of 140 hours per year valued at approximately \$45,000.

Southeast IPM Research and Extension 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 following:

Ornamental Pest Report: Twenty-two cooperating industry professionals in Pennsylvania and Delaware monitored landscapes weekly throughout the growing season for pest activity and tracked accumulation of growing degree days. A report was distributed to 87 subscribers who used the information to anticipate pest problems and to target pesticide applications.

Integrated Pest Management Course: This course, which includes topics of landscape pests and methods to implement an IPM program, is co-sponsored with Cooperative Extension by the Barnes Foundation.

Soils Integrated Pest Management: 140 attended this conference held in Pennsylvania.

Small Farm Expo

The 5th Northeast Small Farm Expo, a collaborative effort of partners from New Jersey and New York, attracted 1,200 participants. More than 55 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, a 5-state effort, attracted 230 participants in 2005. Attendees have an opportunity to enhance their knowledge of starting, managing, and growing a retail farm marketing enterprise.

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 347 faculty, staff and administrators at University Park with extension appointments, 226 are supported partially by Smith-Lever and research funds. Funds supporting the extension portion of joint positions (\$2,839,800) total 30 percent of Penn State Cooperative Extension's Smith-Lever appropriation (See Appendix B).

For example, ongoing research on forecasting and management of Early Blight and Late Blight on tomatoes has resulted in the development and implementation of disease forecasting information that is easily accessible to growers. Implementation involved the establishment of an 18-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 tomato and potato growers promptly enough to affect day-to-day decisions about blight control (Refer to Research Report). On average, this program helped make it possible for Pennsylvania growers to reduce fungicide use by an average of at least 30% for early blight control. This represents a savings equivalent to about 200 tons of fungicide used each year in Pennsylvania which results 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.

**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

Title of Planned Program/Activity	FY 2005	FY 2006			
Lake Erie Regional Grape Research & Extension Center	101,411				
Natural Resource, Agriculture & Engineering Service	29,954				
NASULGC Budget and Advocacy	21,412				
NASULGC Extension Program Resources	5,368				
NASULGC ECOP Assessment	8,292				
NASULGC NELD Assessment	2,141				
NASULGC ESCOP/ACOP Leadership Program	15,916				
NASULGC eXtension Initiative Assessment	74,246				
Mid-Atlantic Apicultural Research & Extension Consortium	23,006				
Commercial Vegetable Guide/Mid-Atlantic Vegetable Recommend.	13,990				
Management of Wildlife Damage in the Northeast	23,514				
PROSPER Project	126,737				
Plum Pox	27,490				
Water Quality in Poultry Production & Processing	17,090				

Continued on next page

Director *Dennis J. ...* **Date**
3-31-06

**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

Title of Planned Program/Activity	FY 2005	FY 2006			
Management of Small Grains	6,896				
Soybean Diseases	6,896				
Reducing Environmental Impacts of Animal Waste	6,324				
Northeast Pasture Research & Extension Consortium	3,488				
Mastitis Resistance to Enhance Dairy Food Safety	4,848				
Management Wildlife Damage in Suburban/Rural Landscapes	29,547				
Rural Communities, Rural Labor Markets and Public Policy	8,236				
Entomopathogens for Control of Anthropod Pests	5,032				
Rootstock & Interstem Effects on Fruit Trees	24,151				
Structured Out-of-School Experiences and Youth Development	7,952				
Economic & Psychological Determinants of Savings Behavior	16,296				
Fruit & Vegetable Marketing Innovations	13,703				
Efficiency of Producing, Marketing & Managing Environ. Plants	13,703				
Improved Management Program to Control Apple Pest Infestations	1,969				

Continued on next page

 Director 

Date
3-31-06

**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

Title of Planned Program/Activity	FY 2005	FY 2006			
Cherry Improvement	21,400				
Western Regional Turfgrass Research	8,218				
Carbon Sequestration and Distribution in Soils	6,498				
Migration and Dispersal of Agriculturally Important Biota	7,960				
Production and Handling of Perennial Nursery Stock	7,660				
Chemistry, Toxicity of Soil Residuals	7,796				
Multi-state Evaluation of Wine Grape Cultivars	18,175				
Renewal of Agriculture of the Middle	14,906				
Commercial Greenhouse Production System	10,496				
4-H Curriculum Development	3,450				
Community Tool Box	4,120				
Agriculture Safety and Health	9,102				
Reducing Ammonia Emissions from Poultry Houses	9,350				
Mid-Atlantic Regional Water Quality Program	26,950				

Continued on next page

 Director *Dennis J. ...*

Date
3-31-06

**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

Title of Planned Program/Activity	FY 2005	FY 2006			
National 4-H Wildlife Habitat Evaluation	3,276				
Northeast Corn Improvement Conference	4,445				
Change Agent States for Diversity	25,945				
Putting YOUTH Back into Sports	3,974				
National and Regional Equine Efforts	43,035				
National Poultry Waste Management Symposium	8,397				
Mid-Atlantic Consortium Dairy Extension In-service	3,530				
Farm Finance and Management Analysis Training	34,690				
New Staff Orientation for Child Care Centers	19,400				
Public Perceptions of Genetically Engineered Food	12,145				
USDA Intervention Project	8,168				
American Society of Animal Science National Meeting	9,370				
Northeast Center for Risk Management	3,125				
National 4-H Embryology	5,200				

Continued on next page

 Director *Dennis J. ...*

Date
3-31-06

**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

Title of Planned Program/Activity	FY 2005	FY 2006			
Celebrating Mid-Life Conference	14,325				
Wine Grape Program	4,485				
Managing the Hispanic Workforce	12,752				
Beef Carcass Data Collection	10,758				
Tri-State Tillage Conference	6,387				
Southeast IPM Research and Extension Group	36,249				
Small Farm Expo	28,950				
Mid-Atlantic Direct Marketing	5,480				
TOTAL	1,099,775				

Director *Dennis Eckert* **Date**
 3-31-06

**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

Title of Planned Program/Activity	FY 2005	FY 2006			
Joint Extension/Research Personnel appointments	\$2,839,800				
Total	\$2,839,800				

Director *Dan J. Johnson* **Date**
3-31-06

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

Fiscal Year: 2005

Select One: Interim Final

Institution: Pennsylvania State University

State: Pennsylvania

	Integrated Activities (Hatch)	%	Multistate Extension Activities (Smith-Lever)	%	Integrated Activities (Smith-Lever)	%
<u>Established Target %</u>		%	25%	%	25%	%
<u>This FY Allocation (from 1088)</u>			\$9,244,978		\$9,244,978	
<u>This FY Target Amount</u>			\$1,099,775		\$2,839,800	
<u>Title of Planned Program Activity</u>						
<u>See Appendix A</u>			1,099,775			
<u>See Appendix B</u>					2,839,800	
Total			\$1,099,775		\$2,839,800	
Carryover						

Certification: I certify to the best of my knowledge and belief that this report is correct and complete and that all outlays represented here accurately reflect allowable expenditures of Federal funds only in satisfying AREERA requirements.

 Director



 Date 3-31-06