

# RUTGERS

New Jersey Agricultural  
Experiment Station

## PROGRAMMATIC THRUST AREAS AND ACCOMPLISHMENTS

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### Cooperative Extension 2006 - 2007



## TABLE OF CONTENTS

<b>I. Introduction / Overview .....</b>	<b>1 – 2</b>
<b>II. New Audiences Served .....</b>	<b>2 – 4</b>
<b>III. Programmatic Accomplishments .....</b>	<b>4 – 27</b>
<b>a. Production Agriculture, Horticulture and Allied Industries</b>	
<b>b. Environment and Natural Resources</b>	
<b>c. Food, Nutrition and Health</b>	
<b>d. Economic and Community Development</b>	
<b>e. Youth Development</b>	
<b>IV. Conclusion .....</b>	<b>27</b>

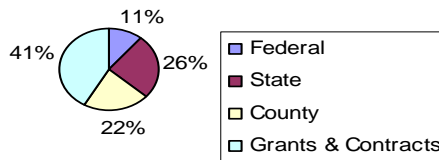
## Programmatic Thrust Areas and Accomplishments Rutgers Cooperative Extension 2006-2007

Rutgers Cooperative Extension departments and administrative leadership have made a major impact at the local, state, regional, and national levels in 2006-2007. In the past two years RCE faculty and staff have garnered over \$32 Million in outside grants and contracts and have published 2.1 refereed journal articles/FTE; higher than most departments at SEBS/NJAES.

County support is at an all time high, totaling \$7.5 Million in 2007, compared to \$4.5 Million in 2002. Shown in the table and figure below is the breakdown of RCE funding. Unlike most of the other land grant institutions, the majority of RCE funding comes from extramural sources. While our federal, state, and county “partner” funding is the major source used for salaries of faculty and staff, the in excess of \$14 million in grants and contracts are dollars that are used primarily for program support. The “Investment in the Future” task force has been successful at changing the manner of conducting business in RCE from relying on state and federal subsidies to intrapreneurship, including increased grantsmanship, development and gifts, and cost-recovery strategies. Since 2006 all Extension Specialists have been actively engaged in undergraduate and graduate teaching and their line splits reflect an appropriate IDR component. RCE administration is currently assisting the Director of NJAES transition the specialists from a separately administered department (Department of Extension Specialists) to become fully integrated into appropriate discipline departments.

<b><u>Rutgers Cooperative Extension Funding – FY '07</u></b>	<b><u>\$34,725,472</u></b>
Federal Smith Lever 3b & c	\$ 2,486,748
Federal Smith Lever 3d	\$ 1,374,724
<i>Subtotal Federal</i>	<i>\$ 3,861,472</i>
State	\$ 8,964,000
County	\$ 7,500,000
Grants/Contracts	\$14,400,000

**(Rutgers Cooperative Extension) Dist. of Funding  
FY'07**



For every federal dollar, we leverage \$4.26 of state and local support.  
 For every state dollar, we leverage \$1.27 of federal and local support.  
 For every county dollar, we leverage \$1.70 of state and federal support.  
 For every grant dollar, we leverage \$1.41 of federal, state, and local support.

In 2006-07 Rutgers Cooperative Extension made numerous faculty and staff hires: 3 faculty Educators in the Department of Family and Community Health Sciences; 1 faculty Agent and 4 Program Associates in the Department of 4-H Youth Development; 2 faculty Agents in the Department of Agricultural and Resource Management Agents; and a Senior Program Coordinator in the Department of Extension Specialists.

On the national scene, the Director of RCE was responsible for the development and implementation of the inaugural CSREES/NASULGC Award for Excellence in Extension and for the inclusion of non-traditional agriculture commodities in the 2007 national priorities for the USDA Cooperative Extension System. These include: turf grass, nursery, ornamental horticulture and equine. The Director also served on the task force *Benchmarking Excellence in Cooperative Extension* which was charged by NASULGC to develop metrics and implementation plan for measuring excellence in Extension programming nation-wide.

The programmatic focus areas for NJAES and Rutgers Cooperative Extension are listed below:

- **Production Agriculture, Horticulture and Allied Industries**
- **Public Health**
- **Environment and Natural Resources**
- **Marine Fisheries and Aquaculture**
- **Economic and Community Development**
  - **Industry Development**
  - **Community Development**
- **Food and Nutrition**
- **Youth Development**

## **New Audiences Served**

Rutgers Cooperative Extension has taken the initiative to expand its programming to serve new audiences in our increasingly diverse state, while at the same time using new technology such as distance learning and regional meetings to continue to serve traditional audiences. Highlights of programs designed for new audiences can be found below.

### **Center for Urban Environments**

The Rutgers New Jersey Agricultural Experiment Station (NJAES) Center for Urban Environments (CUE) recently launched two pilot programs in the New Brunswick area. The purpose of the Volunteer Leader Development for Latino Audiences project was to develop and implement culturally sensitive leader training materials and delivery methods in order to build the Latino community's capacity to support 4-H youth development programs in New Brunswick. Ten Latino men and women participated in the training, including individuals who were non-English speakers. The participants are in the process of completing the required paperwork, and expect to have their first 4-H Club

established in the very near future. Project principals are **Lydia B. Blalock**, Assistant Extension Specialist for Youth Development, **Laura K. Bovitz**, County 4-H Agent for Middlesex County and Niki Learn, CUE Program Coordinator.

The project was funded with a mini-grant from the NJ Children, Youth and Families at Risk (CYFAR) program. The NJAES CUE Youth Research Team project was designed as a pilot project to interest youth in participatory action research and civic engagement. Ten youth are members of the CUE Youth Research Team, including eight young men and women from the Latino community. The team members were instrumental in designing and implementing the New Brunswick Programmatic Needs Assessment. The youth developed the data codebook and are now engaged in data entry using the Software Package for Social Sciences (SPSS). Next steps for the team include data analyses and the creation and delivery of a formal presentation to share results with interested parties in the New Brunswick community.

### **Urban Youth Programming**

This includes youth at risk in a variety of urban areas and through a variety of delivery modes. Successful programming includes:  
Atlantic City & Pleasantville (in-school and after school programming) - subject matter: Gardening, Science & Technology, Healthy Lifestyles  
Trenton (afterschool and summer day camp programming) - subject matter: adventure based programming that focuses on teambuilding, character development, etc; healthy lifestyles, science, engineering, & technology, junior master gardeners  
Camden (afterschool) - subject matter: character education and junior master gardeners  
Paterson & Hackensack (afterschool) - subject matter: junior master gardeners  
Elizabethport (afterschool) - drop-in center programming

### **Rutgers Environmental Stewards**

The Rutgers Environmental Stewards program is offered by Cooperative Extension in partnership with the Duke Farms Foundation. The program has been directed to New Jersey residents who are engaged in their local communities and who serve in volunteer or hired capacities as environmental commission members, watershed associations, and advocacy groups. This new audience helps to extend the mission of Rutgers NJAES and sister institution, the Rutgers School of Environmental and Biological Sciences throughout the state.

### **School IPM**

The New Jersey School Integrated Pest Management (IPM) Act of 2002 established a public policy requiring NJ public and private schools to implement integrated pest management practices and notify employees, parents and guardians of pesticide use in schools. The law requires the appointment of a School IPM Coordinator whose responsibilities include implementation of the school IPM policy and notification of pesticide use on school property. However, school personnel often lack the necessary

and basic knowledge and skills required to comply. In cooperation with the NJ Environmental Federation, and NJ Department of Environmental Protection, Rutgers Cooperative Extension has offered 26 training programs in 12 NJ counties attended by 1,966 public and private School IPM Coordinators.

### **Barnegat Bay Shellfish Restoration Project**

The Shellfish Restoration Project serves to educate residents about the coastal bay, its watersheds and peoples' impact on these natural resources by using the hard clam and oyster as living representatives of the bay ecosystem. These individuals are taught about the requirements needed by these shellfish that serve as watchdogs for good water quality, and how they can be stewards of the natural resources that we share. Rutgers NJAES Cooperative Extension faculty **Gef Flimlin** and **Cara Muscio**, Marine Extension Agents, Rutgers Cooperative Extension of Ocean County, and NJDEP Division of Fish and Wildlife, Bureau of Shellfisheries are conducting this shellfish restoration project.

### **Developing Future Leaders for the Horse Industry**

This two-day short course brought together a team of instructors led by **Karyn Malinowski, Ph.D.**, Director of the Equine Science Center, and **Mary Nikola, Ed.D.**, Director of Leadership and Organizational Development with the New Jersey Agricultural Experiment Station. The course featured several well known experts in the field as well as Drs. Malinowski and Nikola. Subjects included the value of the equine industry, networking and relationship-building, decision-making strategies, leadership practices and behaviors, building coalitions, and industry management. The course brought together an equal balance of professional horse people and SEBS undergraduate and graduate students. Resulting from an Equine Science Center Stakeholder Meeting, where a public concern was the lack of new leadership in the equine industry, this outreach program was the first of its kind nationally.

## **Programmatic Accomplishments**

It has been the goal of RCE to integrate programming across RCE departments. Programmatic accomplishments described below will reflect these integrated efforts of the Extension departments: Agricultural and Resource Management Agents (ARMA), Family and Community Health Sciences (FCHS), 4-H Youth Development, and the Department of Extension Specialists. Highlighted programs for the time period 2006-2007 are presented by NJAES/RCE programmatic focus area.

### **Production Agriculture, Horticulture and Allied Industries**

**Integrated Pest Management Program (IPM):** IPM programs coordinated by Rutgers Cooperative Extension encompassed production agriculture in the areas of blueberries, field crops, nurseries, greenhouses, tree fruit, and vegetables. Research conducted by faculty and staff connected to these various programs is helping to increase the adoption

of IPM and at the same time reduce our reliance on pesticides as the sole pest management tool being used.

Work was done to develop and implement mating disruption systems for Oriental fruit moth (peaches) and Oriental beetle (nursery crops, turf and blueberries) and the use of non-broadleaf ground covers to prevent damage caused by cat-facing insects (peaches). In addition, the vegetable IPM program was able to impact more acreage through the use of their website that tracks weekly European corn borer and corn earworm population changes in the state. This program has been so successful that it has been linked to a similar network maintained for the Mid-Atlantic States by Pennsylvania State University. Overall, IPM adoption in the state was seen on 7,400 acres of blueberries, 508 acres of nursery stock, 10 greenhouse acres, 8,604 acres of peaches, 2,527 acres of apples, 113 acres of peaches and 27,500 acres in vegetables (carrots, cole crops, high-tunnel tomato production, pumpkins, peppers, snap beans, staked tomatoes, sweet corn, and sweet potatoes) for a total of 66,662 acres.

As a result of this program, benefits were seen in the areas of field crops, fruit, greenhouse, nursery and vegetable production systems. The various programs were able to document the following benefits: in southern New Jersey, \$1,200 to \$4,050 in application costs was saved by field crop growers; pesticide use in tree fruit was reduced between 50 to 80% for Oriental fruit moth control; growers in the vegetable IPM program received more timely information that resulted in less pesticide use; Nursery growers were better able to predict pest outbreaks and more effectively manage these outbreaks; and Greenhouse growers were better able to manage pests and reduce insecticide and fungicide use because of the scouting program provided by the greenhouse IPM program.

Pesticide Education and Safety Program (PESP): Currently in New Jersey there are 15,000+ certified applicators registered with the New Jersey Department of Environmental Protection (NJDEP) - Pesticide Control Program. Of these, approximately 3,000 are private applicators. To remain certified, New Jersey law requires that private and commercial applicators accumulate at least 12 hours of recertification training divided between CORE (4) and CATEGORY (8) classifications during a five-year period.

Approximately 20,000 applicators were recertified by this program in 2007. In addition, New Jersey initially certifies an average of 2,000 commercial applicators each year. This requires initial training in CORE and CATEGORY materials. New Jersey also registered approximately 2,000 commercial pesticide operators in 2007. Since these registrations must be renewed each year, this group of applicators requires yearly training. Training in both areas is provided by New Jersey's PESP program. New Jersey's PESP program currently utilizes 24 different manuals to provide initial training to both private and commercial applicators. Since pesticide information and technology are constantly changing, various manuals require both major and minor revisions on a regular basis to maintain the competency level of applicators. In addition, an email based listserv of 450 people continues to keep various groups informed of state and federal issues related to pesticides. This program offered initial CORE training sessions English and Spanish for

commercial operators and applicators and provides training to school employees, master gardeners, organic farmers and beekeepers so they understand the proper use of pesticides and the issues surrounding their use.

As a result of the program, several thousand private pesticide applicators, and commercial pesticide applicators and operators were provided with basic information that allowed them to conduct their job in a safe manner. In addition, information and training provided by this program gave growers and other applicators the skill set necessary to successfully complete their state pesticide licensing exams. In doing so, the application of pesticide in the state is a safer operation that is being done in a manner that does not create a hazard to applicators, workers or the general public.

New Jersey Information Network for Pesticides & Alternative Strategies (NJinPAS): The New Jersey Information Network for Pesticides and Alternative Strategies (NJinPAS) is part of a land-grant university collaboration of 'Mid-Atlantic Partners' of Delaware, Maryland, New Jersey, New York, and West Virginia. The 'Mid Atlantic Information Network for Pesticides & Alternative Strategies' (MAINPAS) state collaboration is designed to provide a structure to gather and transmit information on issues relevant to both current and transitional pest management strategies. Its purpose is to improve the level of knowledge, awareness, and understanding of local, State, regional, and national pest management practices. New Jersey stakeholders are instrumental in identifying state pest management issues, these are then outlined in crop profiles and strategy plans. It is also important to provide stakeholders with compliance advisories when necessary. The information gathered and distributed by NJinPAS is essential to informed decision-making by Federal regulators on pest management issues that will impact New Jersey.

During 2007 members used the listserv to transmit meeting minutes; announce and coordinate pesticide surveys, crop profiles, and pest management strategy plans; as well as announce the monthly release of State newsletters. This program, through its different methods of information delivery, provided educators, scientists, users of pesticides and the general public with up to date information regarding pesticides and other types of pest management techniques and practices. As a result, applicators, etc. were better able to use the most up to date practices and keep abreast of regulatory and other changes.

**Master Gardener Program** trains volunteers who assist Cooperative Extension in its mission to deliver science-based and environmentally-sound horticulture and related information to the general public. Trained participants expand their knowledge of horticulture, home pest control, environmental issues, and other related topics through 60 hours of training and 60 hours of volunteering and associate activities. Upon completion of their training, Certified Master Gardener volunteers engage in service in local outreach programs and must continue to do so as required to maintain their active status. In 2006, 18 county-based programs trained 328 new Master Gardener interns. A total of 1,760 Certified Master Gardeners volunteered 122,946 hours during the year, valued at nearly \$2.7 million. Established in 1984, the program has trained 4,381 residents who have provided 1.08 million volunteer hours valued at \$19.8 million.

**Nursery:** The greenhouse and nursery industry is the number one agricultural commodity in New Jersey with a value of cash receipts totaling in excess of one third of the state's total farm receipts and 2.3% of the total US value. Currently, there are approximately 350 greenhouse and 600 nursery operations in New Jersey. The U.S. floricultural and nursery industry is the second most important sector in U.S. agriculture in terms of economic output. The green industry is the leading sector in agricultural in New Jersey and four other states. Location, demographics, years of growth and subsequent decline all have positioned New Jersey well.

While the industry on the whole is profitable, the competitive edge is lost because producers rarely know the profit margins of individual crops. The recent volatility of fossil fuels and energy prices, domestic competition, off-shore production, a weakening and stressed economy, and the growth of the mass market add-up to collectively produce downward pressure on prices. Nationally, the number of producers continues to decline as a direct result of the newly defined economic risks.

To stay competitive, producers must calculate costs for individual crops so that the most profitable crop mix for their particular market can be developed. Unlike farmers who produce field crops, floricultural and nursery firms bear the entire price, market, and production risks because these crops have no government support programs. However, crop insurance is now available for nursery crops, and Adjusted Gross Revenue crop insurance is available in selected states which can cover floricultural crops.

The Rutgers Cooperative Extension Greenhouse Cost Accounting program was developed to help floricultural and nursery producers calculate individual costs for their businesses. To compete with ever increasing input costs and a competitive market that makes increasing prices difficult, producers are integrating both vertically and horizontally and have requested the ability to include more costs and to calculate costs of outdoor production. Upgrades and modifications were made to the program to allow clientele to monitor labor costs more closely, calculate break-even costs, use more cost categories, calculate the costs of producing plants outdoors, and allow producers to input their income statement and balance sheet so that financial ratios can be calculated and business financial health can be tracked over time. A simplified version is available on Rutgers University Farm Management Website (<http://aesop.rutgers.edu/~farmmgmt>) with a link to the national risk management website. In addition, an Excel version is distributed through Rutgers Cooperative Extension so that producers can calculate their own costs.

Over 200 people now have access to the Excel version of the Greenhouse Cost Accounting Program. This represents over 50% of the greenhouses in New Jersey. The average greenhouse in the state is 25,000 square feet in size with annual sales of \$350,000. Greenhouses representing \$70 million in annual sales and 5 million square feet of production area used the program. If by using this program they are 5% more efficient, this would represent \$3.5 million in sales and 250,000 square feet of production area.

## **Equine Science Center Extension Activities**

One of the major success stories of the past two years for the Equine Science Center was the planning and implementation of the *Economic Impact of the New Jersey Horse Industry 2007* study. In 2006-2007, the Rutgers Equine Science Center conducted economic and land use impact analyses of the horse industry in New Jersey, in partnership with other state agencies and industry breed groups. More than producing just a census, the ESC team conducted analyses which determined the impact of the racing segment on the overall horse industry and collectively the impact of the entire horse industry on traditional agriculture and open space. The purposes of this study were to conduct an economic and land use impact assessment; to begin regular benchmarking of the industry; to profile all components of the state's equine industry, including pleasure and sport/recreation; and to go beyond a simple enumeration. Outreach efforts included: video and presentation materials, an educational campaign statewide, educational material mailings to legislators, and a two-day short course, working with stakeholders and undergraduate and graduate students to discuss the issue and to discuss solutions.

The New Jersey equine industry, valued at \$4 billion, produces an annual economic impact of \$1.1 billion comprised of the \$647 million spent by New Jersey equine owners and operators of equine facilities and \$502.3 million from racetracks. The industry employs 13,000 persons and generates \$160 million in federal, state, and local taxes. Horses are found on 7,200 facilities in every county statewide. Besides the economic importance of the industry, these 7,200 horse facilities maintain open space of 176,000 acres, and an additional 46,000 acres in non-equine use, to produce hay, grain, and bedding in support of horses. These in turn provide an enhanced quality of life for New Jersey residents. Horse operations tend to be more sustainable than other types of agricultural businesses, making the horse industry critical to the growth and land-use strategy of the state. Meetings with funders, other stakeholders, legislators and the media have acknowledged the value of the study and of the outreach materials and educational meetings conducted. As the race horse industry negotiates policy with the NJ legislature and the governor's office, the *Economic Impact of the New Jersey Horse Industry 2007* is its main source of reference.

## **Ryders Lane Environmental Best Management Practices Farm**

A second major undertaking by the Equine Science Center in 2006-07 was the development of a demonstration horse farm that utilized environmentally-sound practices with regard to stormwater runoff and manure management, and experimented with pasture grasses, paddock rotation and management, weed control and other processes typical to livestock operations.

In late 2005 under the direction of **Carey Williams**, Ph.D., Extension Specialist in Horse Management, a team of Rutgers researchers affiliated with the Equine Science Center and several state and federal agencies began a multi-year collaboration. They sought to develop a demonstration working horse farm on the G.H. Cook campus that would use agricultural best management practices to provide solutions to many of the

problems facing farm owners and stable managers today. Our researchers have identified numerous environmental issues, such as preserving water quality, curbing stormwater runoff, proper nutrient waste management, farm and pasture management, weed control, fencing, pasture rotation, and soil enrichment. The facility, when complete, will not only be a model for a best management practices horse farm, but also a learning center where research, education and proactive outreach through live demonstrations and twilight seminars will enrich the public's understanding of how to successfully manage the environmental challenges their farms may pose.

### **Horses 2007**

One of the most successful undertakings in a year of "big ideas" was the **Horses 2007** educational conference, which attracted more than 800 attendees, partners, sponsors and speakers over a two-day period in the spring of 2007. The event was organized entirely by the Rutgers' Equine Science Center, with input and participation by Cornell University, the University of Delaware, the University of Vermont, Delaware Valley College and Centenary College.

The concept for Horses 2007 was very simple: a two day educational conference, the first day of which would especially target new and prospective horse owners, and the second day more specifically geared to experience owners and equine professionals. Continuing education credits for veterinarians and vet techs were offered. On both days, the curriculum would be similar, emphasizing horse health, nutrition, behavior, and subjects related to good horse-keeping. In addition, Day Two would climax with the first public presentation of the results from the *New Jersey Equine Industry Economic Impact Study*. Horses 2007 was a financial success as well, generating more than \$50,000 profit which will be set aside as seed money for Horses 2009 and to support Equine Science Center programs. Beyond the financial success, Horses 2007 served to greatly heighten the public's awareness of the Center and its programs. It also created a demand for future educational events – and it seems that it has increased awareness of and attendance at the Center's other seminars, courses and the like.

The first **Equine Farm and Land Management Short Course** took place on March 31 and April 1, 2007, concurrent with the Horses 2007 educational conference. The venue provided an opportunity for small animal farm operators and horse owners to see a variety of BMPs that have been designed to address similar conditions that may exist on their farm. Speakers from New Jersey and Pennsylvania involved in Extension and the Natural Resource Conservation Service (NRCS) provided a variety of topics on pasture, manure and stormwater management issues. Horse farm owners and managers were taught the principals of pasture growth and rotation, weed identification and management among a variety of other lecture and demonstration topics on Saturday, March 31, 2007. Sunday's, April 1, 2007, program included lectures and demonstrations on manure disposal and storage options, and water quality strategies. Also available to those interested will be Certified Crop Advisor (CCA) continuing education credits. In addition, various educational materials ("Weeds of the Northeast" and "Horse Owners Field Guide to Toxic Plants") to help aid the attendees to be more proficient in helping manage the

pastures on their farms were provided. This program also consisted of full video documentation that was incorporated into a 10 disc DVD set which can be purchased for professional development purposes or as a learning tool for farm owners. This program was so popular that a second course ran in Monmouth County in October, and another is planned to run in the northern part of the state.

### **Rutgers Turf Grass Extension Program Activities**

Turf grass is a valuable and rapidly expanding component of our urban and rural landscape. Turf grass is used to stabilize soil and produce a playing surface on more than 16,000 golf courses. Golf courses are an important component of the turf grass industry providing a source of green space in the urban environment and offering recreation and enjoyment for approximately 36 million Americans. Golf courses also generate jobs, commerce, economic development, and tax revenues for communities throughout the country.

The Center for Turfgrass Science held its **Sixteenth Annual Turfgrass Research Symposium** on January 11 and 12, 2007. The Symposium, which was attended by more than 70 faculty and turf industry professionals from throughout the Northeast region, featured a keynote address by **Dr. William Meyer** on “Breeding Advances for Disease Resistance in the Major Cool-Season Turfgrasses,” and oral research presentations by **Dr. Brian Horgan** (University of Minnesota) and **Dr. Geunhwa Jung** (University of Massachusetts – Amherst) and faculty in the Rutgers Center for Turfgrass Science.

The **Annual Turfgrass Research Golf Classic** was held on May 7, 2007 at the Fiddler’s Elbow Country Club in Far Hills, NJ. This was a very successful event, with 310 golfers from 10 states. The golfers filled all three courses at the Club. This is the twelfth year of this industry/Rutgers University partnership that has raised over \$750,000 for turfgrass research and outreach efforts in the region.

The Center for Turfgrass Science held its annual **Turfgrass Research Field Days** on July 31, 2007 (Horticulture Farm II) and August 1, 2007 (Adelphia Research Farm). The events had record attendance both days -- over 350 attendees for the Golf and Fine Turf Session at Farm II and over 400 turf managers participated in the Lawn and Landscape session at Adelphia. The field days attracted landscape, irrigation, golf course, and other green industry professionals not only from the northeast but from the entire US (including Florida, Idaho, Indiana, Colorado, Texas, and Washington) as well as from Canada, Japan and Russia.

On Thursday, Sept. 27, 2007 faculty from the Center for Turfgrass Science and agronomists from the US Golf Association (USGA) Green Section held a national “Live Meeting” webcast highlighting results of USGA-funded turf research at Rutgers. This webcast provided an overview of current turf research to agronomists from the USGA Green Section located across the country. There were presentations in the areas of turfgrass management, entomology, pathology, breeding for disease and salt tolerance, and the development of molecular markers for heat tolerance in turfgrass species.

**Dr. Jim Murphy**, in collaboration with **Dr. Bruce Clarke, Brad Park and Ian Chivers** (a specialist for horse racetrack construction from Australia), supervised the design, construction and management of the new turf track at Monmouth Park Racetrack in Oceanport, NJ. This \$3.5 million project was funded by the New Jersey Sports and Exposition Authority as part of the State's efforts to renovate Monmouth Park for the 2007 Breeders' Cup (the first time this premier international horseracing event was held in New Jersey). The event was held on October 26-27 and was broadcast to racing enthusiasts throughout the world.

## **Peaches**

The southern New Jersey commercial peach industry includes approximately 80 commercial peach growers that produce approximately 6,500 acres of peaches and nectarines with a 2006 wholesale production value of \$35,500,000 and a tree value of \$140,000,000. Peaches as a single plant species represent the second largest cash fruit or vegetable crop in the Garden State slightly behind blueberries. This six county area produces 98% of the fruit and New Jersey ranks 4th in the United States behind California, Georgia, and South Carolina. The New Jersey peach industry and the research and educational programs of Rutgers in peach science are known nationally and internationally.

Most peaches are sold by food retailers; however, an increasing amount is going to food purveyors and institutions. With the proximity of New Jersey growers to the large northeastern U.S. corridor of consumers, a ready market with local produce exists. The challenges in getting peaches to these consumers are due to the consolidation of the food industry and the centralization of buying to shut off local purchases.

Peach consumption has been flat or decreasing for the last 20 years. Increasing peach consumption requires that we provide peaches that are consistently high in eating quality. Storing peaches for too long or at inappropriate temperatures can result in development of flesh mealiness, "off" flavors, and internal browning. This disorder results in visually attractive but inedible fruit reaching the consumer. The industry urgently needs to develop and implement harvesting and handling protocols that preserve maximum fruit quality. They also need research-based guidance in selecting new varieties to plants that have increased market life, respond well to storage protocols, and retain excellent eating quality.

A research project was initiated to characterize peach and nectarine cultivar susceptibility to internal breakdown. Preliminary results indicate that most commercial eastern peach and nectarine cultivars are susceptible to internal breakdown when stored at supraoptimal temperatures (i.e. >40°F). Reduced development of internal breakdown was documented in the commercially important cultivars 'Bounty' and 'RedGold' as well as two new selections from the Rutgers Stone Fruit Breeding Program, NJF16 and NJF17. The two new selections are both Peento, or flat peaches. Flat peaches may be less susceptible to internal breakdown.

To increase the consumption of peaches with emphasis on New Jersey, Rutgers Cooperative Extension focused efforts on increased per capita consumption, increased marketing of NJ peaches through all state retailers from direct marketers to large retail super centers; and increased profitability of growers and shippers by reducing transportation costs and increasing wholesale value and retail value where the grower/shipper markets direct to the consumer. **Jerome Frecon**, Gloucester County Agricultural Agent, spearheaded significant activities and efforts in 2006 to meet these goals. They included:

- Wholesale buyers guide with all peach information including names and address of all peach shippers. This document was mailed to 400 potential peach buyers, and distributed at 6 produce and horticultural shows.
- Web site [www.jerseypeaches.com](http://www.jerseypeaches.com) where most of the information from the Wholesale Buyers Guide was posted. This information is also linked to the NJ Department of Agriculture website.
- New Jersey Peach Festival was held in conjunction with Gloucester County 4-H Fair in Mullica Hill; the festival attracted 22,000 visitors.
- Peach Media Day was held at Wightmans Farms in Morris County for food writers and other media. The event attracted one cable TV network and 6 newspaper writers who published articles in Trenton Times, Star Ledger, Bergen Record, local Morris County Newspaper and paper from Sussex County.
- Displays were set up New Jersey Peach Promotion exhibit at Chili Festival, NJ Peach Promotion Council Festival, Farm Aid concert, Mid Atlantic Fruit and Vegetable Convention and New Jersey Agricultural Society Convention for exposure to 100,000 consumers.
- Peach marketing summit was held in December 2006 to address continued improvement in peach marketing methods and plans for future shipments/ Food Safety was discussed and with the NJDA a food safety task force was announced.
- Research on post harvest handling of was funded and resulted in improved knowledge on storing and handling current varieties.
- Eight new novel peach cultivars were introduced to improve peach shelf space for growers. One was a white nectarine, three were flat white and yellow fleshed peaches, and one was a low acid yellow fleshed peach that does not get mealy in transit.

## Environment and Natural Resources

**Rutgers Environmental Stewards** program is offered by Cooperative Extension, a unit of Rutgers New Jersey Agricultural Experiment Station (NJAES) in partnership with the Duke Farms Foundation. The program has been directed to New Jersey residents who are engaged in their local communities and who serve in volunteer or hired capacities as environmental commission members, watershed associations, and advocacy groups. This new audience helps to extend the mission of Rutgers NJAES and sister institution, the Rutgers School of Environmental and Biological Sciences throughout the state.

Approximately 20 classroom and field study sessions are provided. Upon completion of sixty hours of classroom instruction and sixty hours of volunteer internship they are certified by RCE as Environmental Stewards. Graduates become knowledgeable about the basic processes of earth, air, water and biological systems. They increase awareness of the techniques and tools used to monitor and assess the health of the environment. They gain an understanding of the research and regulatory infrastructure of state and federal agencies operating in New Jersey that relate to environmental issues and are given an introduction to group dynamics and community leadership. The program's goal is that graduates use their knowledge to expand public awareness of scientifically based information related to environmental issues and facilitate positive change in their community. The program was selected as the winner of the **2008 Governor's Environmental Excellence Award** in the environmental education category. Currently, the program is offered in five locations throughout New Jersey. **Bruce Barbour**, County Agent at Cooperative Extension of Morris County, serves as coordinator. Sessions are held in Roseland in Essex County, Duke Farms in Somerset County, the Rutgers NJAES EcoComplex in Burlington County, Egg Harbor Township in Atlantic County, and Cape May Court House in Cape May County. Twenty-seven (27) people have become certified Environmental Stewards by 2007.

Information can be obtained at [www.envirostewards.rutgers.edu/index.htm](http://www.envirostewards.rutgers.edu/index.htm).

### **Water Quality and Quantity**

Nothing is more essential to life on earth than water. Every living animal and plant requires an adequate supply of high quality water, and throughout human history there has been a clear, direct relationship between the abundance of clean water, population density, and quality of life. On the other hand, water can kill. Witness the devastation caused by Hurricane Katrina or the deaths recently caused by the consumption of spinach irrigated with water contaminated with *E. coli* bacteria. New Jersey has historically been blessed with adequate surface and groundwater supplies, and this water has facilitated industrial, agricultural, and residential development throughout the State, resulting in the highest average population density in the United States. However, this population density and concomitant development has resulted in the contamination of water supplies, depletion of groundwater aquifers, and disruption of normal hydrologic cycles leading to an increase in

both drought and flooding events. While nationally approximately 11% of water bodies are listed as impaired or failing to meet designated uses, in New Jersey over 40% of assessed water bodies are impaired for various pollutants. As human-induced climate change results in an intensification of the hydrologic cycle and continued rise in sea level, these problems will worsen unless solutions are developed rapidly. These solutions must be based on sound science and policy, and these solutions must be implementable, sustainable, and affordable.

New Jersey is in financial dire straits and has very limited funds to address its water resources problems. Only through leveraging resources can we as a state begin to tackle some of these problems. Rutgers Cooperative Extension is in a unique position to integrate research, education and extension activities to lead this effort to address the water resources problems of the state.

The first step to address New Jersey's water resources problems was to clearly identify and prioritize the problems. The New Jersey Department of Environmental Protection (NJDEP) provided funding to the RCE Water Resources Program to develop watershed restoration plans for seven watersheds throughout New Jersey including the Musquapsink and Tenakill Brooks in Bergen County, the Neshanic River in Hunterdon County, the Musconetcong River in Warren and Hunterdon Counties, the Upper Salem River in Salem County, the Upper Cohansey River in Cumberland County, and the Assiscunk Creek in Burlington County. The Association of New Jersey Environmental Commissions provided funding to complete a condensed watershed restoration plan for the Black River in Morris County. To develop these plans, water quality monitoring was conducted and data used to develop water quality watershed models. These models were then used to identify sources of pollution and prioritize these sources for implementation of best management practices. The development of these plans also requires the formation of advisory committees of local stakeholders. These committees were used to identify sources and provide insights into the best method of engaging local stakeholders.

Plans for the Upper Cohansey River and Black River are near completion with the remainder of the plans slated for completion by the end of 2008. In several areas, restoration activities began prior to the completion of the plan. We are currently working with farmers in the Neshanic and Musconetcong Watersheds to secure funding to re-establish stream corridor buffers. We are also working with municipalities in Bergen County to begin goose management efforts to minimize their affect on water quality.

Watershed Restoration Plans are being developed for the eight watersheds identified above. These plans contain specific measures to decrease nonpoint source pollution and promote groundwater recharge. These plans will serve as blue prints for restoration efforts in each of these watersheds. Additionally, once completed, these plans will become conduits for additional funding from the NJDEP 319(h) program to implement the recommended controls. These plans address water quality problems in 35 municipalities in seven counties covering over 140 square miles of watersheds in New Jersey. Each plan identifies educational components to be implemented within the

watersheds. Many of the programs recommended are run by Rutgers Cooperative Extension.

### **Barnegat Bay Shellfish Restoration Project**

Shellfish harvesting was one of the main industries on which the early economy of Ocean County, NJ was built, but declines in shellfish due to loss of habitat and pollution occurred. Restoration of shellfish beds in Barnegat and Little Egg Harbor Bays may offer both an environmental benefit as well as an educational opportunity. Teaching residents of the watershed more about the ecology of the Bays helps people understand their role in protecting and restoring some of the natural resources that support a healthy environment for the estuary.

The Shellfish Restoration Project serves to educate residents about the coastal bay, its watersheds and peoples' impact on these natural resources by using the hard clam and oyster as living representatives of the bay ecosystem. Individuals were taught about the requirements needed by shellfish that serve as watchdogs for good water quality, and how they can be stewards of the natural resources that we share. Rutgers Cooperative Extension faculty **Gef Flimlin and Cara Muscio**, Marine Extension Agents in Ocean County, and NJDEP Division of Fish and Wildlife, Bureau of Shellfisheries are partners in this shellfish restoration project.

The physical part of the process included setting up land based and in-water shellfish nurseries. Once grown, the shellfish were placed in the bay either in beds covered with predator control screen or on oyster reefs. When the clam and oyster seed have a better chance of survival without predator control, they were broadcast planted in public areas for eventual harvest.

In the field, 7 upweller nursery boxes were located on Barnegat Bay - Barnegat Light Town Dock, Surf City Yacht Club, the St. Francis Center in Beach Haven, the Long Beach Island Activity Center in Beach Haven, Cedar Bonnet Island, Holiday Harbor Marina in Waretown and Wheelhouse Marina in Seaside Park. There are presently 1.5 million clams in production that came from 4 New Jersey based hatcheries.

Since 2005 almost 100 volunteers have been trained and have provided (through mid-August 2006) approximately 3,360 hours of volunteer service with a cumulative total value of approximately \$72,000. Program funding came from government, corporations and foundations to the extent of \$130,000. Specific impacts of the shellfish culture have not yet been assessed since it is very difficult to precisely calculate the ecological benefits of tiny shellfish filtering the water in 7 or 8 locations. We do know, however, that they are filtering algae and small particles from the water, and removing nutrients from the bay. The greater impact of this effort is that all of the volunteers know this through our formal education program and from working with the clams and oysters and are transferring this information to others in the area. That is the true impact of the project, people educating people as to how they can be better citizens of the watersheds and helping to keep the bay, where they are growing the shellfish, clean and inhabitable for them.

In addition, trained volunteers have become a conduit for information with the public, as they interact in their program activities, and through planned learning experiences. Muscio created *What the Bay HINGES On* activity guide for educators. The guide was used to instruct ReClam volunteers, and is being used by them as they educate both youth and the general public through lectures, festivals and upweller education events. Lessons from the HINGES guide were also presented at eight educator workshops. In addition to lessons being presented to educators for their use, materials from the guide were used to construct “Clam Camp”, a series of six lessons on the Shellfish Restoration Program presented to Ocean County youth. In 2006, approximately 50 youth between the ages of 5-15 were taught about aquaculture, shellfish biology, watersheds, water pollution, stewardship, and restoration. Of the 38 youth completing evaluations, they rated the knowledge gained about shellfish and water quality as 2.6 on a scale of 1-3, with three representing “a lot”. In addition, 96% of the younger group and 100% of the older group agreed that they would teach someone what they learned.

For more about the program: "[www.reclamthebay.org](http://www.reclamthebay.org)" and "<http://ocean.rcre.rutgers.edu/marine/bbsrpl.html>".

## **Food, Nutrition and Health**

### **Get Moving - Get Healthy New Jersey**

In 2007, there were two **Children’s Health Summits: Fighting Back Against Child Obesity** at which there were 230 health professionals who received evidence based information related to child obesity. The Mercer County Children’s Health Summit saw the launch of **Get Moving – Get Healthy New Jersey** (GMGHNJ) with a proclamation from Governor Jon Corzine. This Summit makes a total of 9 Children’s Health Summits to date.

The mission of Get Moving – Get Healthy New Jersey is to improve the health of individuals, families and communities. Get Moving – Get Healthy New Jersey encourages a healthy lifestyle, especially healthy eating and physical activity, through educational programs, a website, publications and targeted marketing campaigns. Rutgers Cooperative Extension works in partnership with state and local governments, research institutions, professional groups, corporations, and private organizations to achieve this mission. GMGHNJ developed 36 “Learning Kits” (value \$500) and disseminated them through the counties and other agencies such as the Boys and Girls Clubs, Dietetic Programs. Kits were used with approximately 3,053 kids and approximately 2,000 parents throughout the counties. FCHS and 4-H Youth educators have conducted many school wellness programs under GMGHNJ bringing a positive message about good nutrition and physical activity to NJ schools.

Family and Community Health Sciences and 4-H Youth have partnered with NJ state government and a private corporation in developing and implementing GMGHNJ. In 2007, The New Jersey Department of Health and Senior Services entered into a 3-year Memorandum of Agreement and provided funding for \$172,000 to target child obesity in NJ. Bristol Myers Squibb has provided \$26,000 to GMGHNJ. In 2007, FCHS launched the GMGHNJ website [www.getmovinggethealthynj.rutgers.edu](http://www.getmovinggethealthynj.rutgers.edu).

Since its inception in Spring 2005, the Get Moving – Get Healthy with New Jersey 4-H action kits and curriculum have been used throughout the state in three primary delivery modes – 4-H clubs, youth education through school enrichment and after school programs, and general public awareness. To date, the interactive displays have been viewed by 1,608 youth and 2,133 adults. Five hundred and forty-five adults were introduced to GMGH at state afterschool conferences, Children’s Health Summits and other related events. In depth trainings were held for 101 teens and 221 adults. Direct youth education has resulted in 4,348 gaining knowledge, changing attitudes, and changing behavior in relationship to healthy eating and exercise. Family Fun events were held in 2007 as a result of the Kraft Healthy Lifestyles grant where 889 family members gain skills in healthy family living. In addition, more than 16,400 youth were enrolled in healthy lifestyles projects in 2007.

### **Food and Farm Safety**

**Don Schaffner**, Extension Specialist in Food Safety, conducts an Extension program with the food industry to help provide safe food to millions of consumers. This assistance over the last year not only provided for safer food, but reduced product loss by \$1.2 million. Examples of such implementation and education include:

- Assisted NJ-based meat processor with 30 days of production without complete food safety documentation to prove the product was safe, allowing the company to avoid a costly recall;
- Initiated a testing program to determine microbiological contamination (E. Coli) levels in NJ spinach on growers farms;
- Assisted UT-based school foodservice operation with 20 batches of product that were subject to a cooling deviation;
- Determined the appropriate microbial standards for flour used in bread making to control bread spoilage. This analysis directly impacted the status of more than 300 batches of flour produced over more than 1 month for a NJ-based bakery ingredient company;
- Assisted a NJ-based meat processor with 2 different batches of product on-hold by FSIS, and facing a non-compliance record after an in-depth HACCP review. This assistance saved food product costs and allowed the plant to continue operating;
- Helped NJ-based meat processor with potential recalls of two different fermented sausage products resulting from a lack of scientific documentation on process safety;
- Assisted NJ-based juice processor petitioning FDA to be exempt from the juice HACCP regulation for a shelf-stable juice. Analysis shows the processor to be using a process yielding approximately a 427,000-log reduction, well in excess of the 10,000 log reduction required by FDA for an exemption;
- Public education occurs with the news media (radio, print, etc.) on numerous food safety issues throughout the year ranging from the recent interest in E. coli O157:H7 in bagged spinach, to food terrorism, meat safety and summertime food safety.

## **Small Steps to Health and Wealth**

Many Americans today have health and personal finance “issues.” Major societal problems that have been widely reported in recent years include an increasing incidence of diabetes, more overweight and obese adults and children, low household savings rates, and high household debt and bankruptcy rates. There are also many ways that health affects personal finances (e.g., the high cost of unhealthy habits such as smoking and medical expenses) and personal finances affect health (e.g., physical symptoms and poor health care associated with financial distress). A need exists to teach consumers about health finance topics (e.g., health insurance) and behavior change strategies that can be simultaneously applied to improve health and increase wealth.

In 2007, **Barbara O’Neill** and **Karen Ensle** conducted a pilot test of the *Small Steps to Health and Wealth*<sup>TM</sup> (SSHW) Challenge. The SSHW Challenge is a six week team competition that encourages adoption of recommended health/nutrition and financial management practices. One hundred twenty-five participants enrolled in teams of five, reported their point totals weekly to their team captain, and received ongoing support and recognition. Ten points were given daily for the following practices: eat 3+ cups of fruits and vegetables per day; get 30+ minutes of exercise per day; eat breakfast; use a pedometer; reduce added sugars, solid fats, sodium, or calories; save pocket change; save/invest \$5 or more per day; reduce spending on small expenses; learn about personal finance; and track money spent.

Monthly SSHW financial messages, began in January 2007, and are archived on the SSHW Web site at <http://njaes.rutgers.edu/sshw/>. These consumer- focused messages are available as media source material for Extension agents nationwide. Another new feature of the SSHW Web site in 2007 was the addition of Spanish language materials that were translated by staff at the University of Arizona.

To date, 136 people have completed an online registration form. Demographic data about these consumers indicate that 90% are female, 73% are white, 72% have college degrees, and 70% have a body mass index (BMI) over 25, meaning they are overweight or obese. The most frequently cited health goals were increasing daily activity, losing weight, and eating at least 5 servings of fruits and vegetables. The most frequently cited financial goals were decreasing household spending, starting or increasing savings, and increasing net worth. Follow-up evaluation of registered SSHW participants’ progress will begin in 2008.

## **Economic and Community Development - Youth Development**

### **Youth Farmstands**

In 1990 the U.S. Secretary of Labor organized the Secretary's Commission on Achieving Necessary Skills (SCANS). The SCANS Report for America 2000 identified the knowledge, skills, and attitudes that youth must have in order to compete successfully in the workplace, and charged the education system with the responsibility of integrating those skills into students' academic preparation. The Workforce Investment Act of 1998 (WIA) also supports the fact that youth are not being properly prepared for employment, and CSREES has identified Workforce Preparation as a national concern for youth.

The agriculture and food systems industries in New Jersey provide a hook for encouraging youth to think about their short and long-term employment and career opportunities. The \$62.5 billion agriculture and food systems industries comprise the third largest industry in New Jersey in economic benefits. The NJ Department of Agriculture's *Reinventing Agricultural Education for the Year 2020* initiative emphasized repeatedly the need for "preparing young people for productive careers" in agriculture and the need for educated, skilled workers at all levels to support this multi-billion dollar industry. A key goal of the initiative is to "ensure a constant supply of young people selecting agriculture as their career" especially in view of the fact that "10% of professional jobs in agriculture go unfilled each year."

The Rutgers Cooperative Extension (RCE) Youth Farmstand Program is a statewide, interdisciplinary program designed to increase workforce readiness skills in at-risk youth, support local farmers and the NJ agriculture industry, and build healthier, stronger communities. The primary delivery mode for the program consists of youth-operated farmstands that provide at-risk and special needs youth in grades 9-12 the opportunity to develop and practice workforce readiness skills defined in the SCANS Report. The farmstands use an entrepreneurial approach: youth make most decisions related to stand operations and receive a share of the profits at the end of the selling season. Youth farmstands are located in economically depressed communities in order to provide local residents with fresh, quality produce that may otherwise be inaccessible. Several accept WIC and Senior Nutrition program vouchers. Nutrition information is available onsite to customers, as are cooking methods and recipes. Youth farmstands support the NJ Department of Agriculture's *Jersey Fresh* program by purchasing only locally grown produce for resale. Youth participants educate customers about the importance of buying *Jersey Fresh* produce to farmers and the community residents.

In 2007, eight (8) RCE Youth Farmstand projects were implemented in several diverse communities in New Jersey. Mercer County extension personnel operated three (3) projects within Trenton, New Jersey's state capitol. The participants were at-risk, inner city youth provided (and paid) by a local youth employment program. The farmstands served downtown Trenton workers and residents, and one stand was located adjacent to a retirement complex for low-income elderly. Gloucester County extension personnel

operated three (3) youth farmstands, one each in Paulsboro, Glassboro and Woodbury. The Gloucester participants were at-risk, special needs youth. Farmstands served at-risk populations in economically depressed areas. Atlantic County extension personnel operated the Uptown Classic Produce Market in Atlantic City. At-risk youth participants were provided (and paid) by the local Youth Corps program. The farmstand was located convenient to low income residents of Atlantic City. This year the Youth Farmstand program expanded to Warren County, which operated a farmstand in Phillipsburg.

The youth farmstands provided a hands-on work and entrepreneurship experience to youth in the mechanics of owning and operating a small business. There were three major educational components: pre-farmstand training, farmstand operations and ongoing educational activities and experiences during the selling season. Curriculum topics included workforce readiness skills, farmstand operations, marketing, *Jersey Fresh*, agricultural careers, the food system, character education, and job search skills. The youth farmstands obtained produce for resale from local farmers, and the “Jersey Fresh” logos were prominently displayed at all stands. Youth provided customers with nutrition and produce preparation education as requested, and unsold produce was donated to local organizations serving economically vulnerable populations.

- Over 300 total hours of educational activities were provided by faculty and staff.
- All youth demonstrated increased workforce readiness skills and attitudes at the close of the selling season.
- Youth increased their knowledge of the training program content by an average of 27% based on a 19-item pre/post test.
- 12 of the participants interviewed at a large regional grocer. Five received second interviews, and four received positions there. (as of 11/07, all four still working)
- High retention rate of special needs youth: 8% returned for the fourth year, 15% for the third year and 31% for their second year.
- \$19,000 in combined wages was earned by youth participants at 6 sites.
- \$1260+ in profits was distributed among youth participants at 3 sites, based upon stand sales and hours worked.
- In lieu of profit sharing, youth at 3 sites donated produce to local food banks.
- Approximately \$13,600 in produce was purchased from local farmers.
- Over 1000 cases of produce were purchased from local farmers.
- Suppliers indicated they were satisfied with the program, eager to learn how to access local niche markets, and looked forward to broadening our relationships.
- Over 2300 customers in economically disadvantaged areas purchased *Jersey Fresh* produce.
- Community residents reported increased access to fresh, quality produce, and that they understood (and felt good about) their contribution towards supporting local farmers *and* youth workforce readiness training.
- 138 Farmers Market Nutrition Program (FMNP) vouchers were used at the stand by senior citizens (78 vouchers) and WIC families (40 vouchers). FMNP vouchers accounted for 5% of total farmstand sales.
- The majority of customers who redeemed WIC or Senior Farmers Market vouchers reported using vouchers exclusively at the Farmstands.

- Observations noted by supervisors included demonstration of positive behaviors, being reliable, having good attitudes, exhibiting good interpersonal skills, and understanding the daily operations of the stand as well as individual responsibilities.

### **New Jersey Agricultural Leadership Development Program**

NJALDP is a joint initiative sponsored by the Rutgers Cooperative Extension, New Jersey Farm Bureau, New Jersey Department of Agriculture and the New Jersey Agricultural Society. Established in 1995, this two-year professional development program targets individuals in farming and agribusiness. To date, 5 classes have graduated providing 125 alumni who are actively involved in support of the agriculture industry throughout New Jersey. Organized into a series of 10 multi-day, in-state seminars and two travel seminars; one to Washington, DC and an International Study Seminar, NJALDP graduates realize the following goals: 1) Recognized as skilled leaders and effective managers of their businesses and careers; 2) Understand key emerging issues and their impact on their business and the agricultural industry; 3) Engaged in the agricultural community.

Under the leadership of **Dr. Mary Nikola**, 22 farmers and agri-business professionals in NJALDP'S class VI traveled throughout Italy for 7 days in February. NJALDP participants studied how agricultural business is conducted at an international scale; expanded their understanding of alternative agricultural techniques and methods for addressing issues facing New Jersey agriculture; and established international agricultural contacts. Dr. Nikola's class examined key business and social challenges in Italy while they developed an international perspective and an in-depth cultural awareness.

## **Youth Development**

4-H educational programs are offered to all youth, grades K-13, on an age-appropriate basis, without regard to race, religion, color, national origin, gender, sexual orientation, or disability. In 2007, 50,391 youth (duplicates eliminated) participated in the following ways:

- 12,895 youth were members of 893 organized 4-H clubs
- 15,566 youth were members of 1,098 4-H special interest/short-term programs
- 3,023 youth participated in 321 camping programs
- 29,283 youth were involved in 3,692 4-H school enrichment programs
- 98 youth participated in 4-H individual study programs
- 529 youth participated in 82 SACC education programs

Volunteers are essential to the successful delivery of 4-H programs to youth. In 2007, 2,319 adult volunteers donated, on average, 220 hours per year preparing for club meetings and teaching youth. According to the Independent Sector, the value of volunteer time in New Jersey is \$22.35/hour. This equates to more than \$11 million in time being donated to New Jersey 4-H. There were also 406 4-H youth volunteers, teens who shared their skills with younger 4-H members and with other youth in their communities.

### **USDA Mission Mandate: Science, Engineering, & Technology (SET)**

In 2007, NJ 4-H began to implement SET into 4-H programming with more than 27,300 youth enrolled in SET projects. Since Oct. 2007, regional trainings of this mission mandate have enabled 4-H staff and faculty to understand and incorporate the 30 SET abilities from USDA into program design, implementation and evaluation. The goal is to develop and deliver 4-H SET programs that are content and contextually valid to youth in different settings and locations. These programs will be designed to meet the needs of youth from a wide variety of backgrounds. The objective is to increase knowledge, skills, and competencies and improve the attitudes of youth in science, engineering and technology. This will be done through alignment of existing animal, plant, environmental science programs with the SET abilities; and development of new SET programming (Energy, Biotech, GIS/GPS, et. al.) using various delivery modes (camps, 4-H Afterschool, school enrichment, clubs, etc.)

### **USDA Mission Mandate: Healthy Lifestyles**

A September 2004 Childhood Weight Status report published by the New Jersey Department of Health and Senior Services indicated that 20% of New Jersey's sixth graders are obese and another 18% are overweight. Currently, the number of overweight and obese youth in New Jersey is higher than the national average. Many communities are largely unaware of the problem. However, by educating young people and adults on nutrition, fitness, and positive lifestyles, we can reverse the trends of poor health. Because of these factors, the Rutgers Cooperative Extension has identified Childhood Overweight/Obesity as a priority issue.

### **Get Moving – Get Healthy (GMGH)**

4-H action kits, display, and curriculum were developed to address the issue by providing an interactive and fun way to learn healthy eating habits, portion sizes, the new Food Pyramid, and simple exercises. The curriculum has three major focus areas – understanding MyPyramid, identifying portion sizes, and learning easy ways to exercise. This was created through a unique youth and adult partnership. A team of teens, called the 4-H Food and Fitness Ambassadors worked with the 4-H professionals to develop the activity kits and curriculum. Teens identified the areas of focus for the project, determined the title of the project, designed the logos and artwork used for the project, and evaluated potential activities to include in the activity kits.

### **USDA Mission Mandate: Leadership/Citizenship**

Teen 4-H members want and need to have an opportunity to both practice leadership and to be involved as decision makers in planning and implementing 4-H programs. When teens have the ability to be active partners in planning, implementing and evaluating programs, they develop strong leadership and life skills, such as planning and organizing,

goal setting, problem solving, decision making, social skills, communication, self-motivation and teamwork. For young people, leadership development also meets a number of needs, including opportunities for relationships with caring adults, peer group support, and meaningful engagement in community and civic life. In 2007, more than 19,400 youth participated in citizenship and leadership 4-H activities.

### **Operation Military Kids (OMK)**

This is a national initiative funded by the U.S. Army in partnership with the USDA - 4-H. The purpose is to increase community support for military youth and their families. This has been accomplished through a team of 30 military personnel and representatives of community organizations. This team includes representatives of: New Jersey National Guard Child & Youth Services; Army Reserves Child & Youth Services; U.S. Army Child & Youth Services: Fort Dix, Picatinny Arsenal, Fort Monmouth; U.S. Air Force Child & Youth Services: McGuire Air Force Base; U.S. Navy: Lakehurst Naval Base; Boys & Girls Clubs of America; Military Child Education Coalition; New Jersey Department of Education; National Association of Child Care Resource and Referral Agencies (NACCRRRA); The American Legion; Other Veterans Service Organizations; Youth representatives from 4-H and the military.

Since its inception, more than 1,515 youth were reached through:

- Teen Leadership Camp Out
- Project Young Heroes
- Teen Speakers' Bureau
- Care Packages for Military Children
- Community Awareness Briefings
- Connecting with Technology

NJ Teen Leadership Camp Out was a 3-day event for a diverse group of teens from NJ and NY, including 4-H members and military youth. Youth actively participated in a variety of teambuilding and leadership development workshops and projects. Objectives of the program were to:

- Increase teens' understanding of leadership and the connection to life skill development.
- Strengthen leadership skills in teens including teamwork, problem solving, cooperation, and communication.

OMK Project Young Heroes - In an effort to develop connections between military and non-military youth, youth shared their experiences with deployment of a parent. The impact of their stories of loneliness, sadness, worry, and isolation from their peers motivated a group of 12 teen leaders to initiate Young Heroes. This is a youth service project designed to respond to the needs of youth impacted by military deployment. The goals of the Young Heroes project were to:

- Understand the unique stresses experienced by youth and their families before, during, and after deployment.

- Enhance skill development in media and technology, public speaking, team building, and working effectively with adults.
- Design and produce a video/DVD featuring youth who have experienced the deployment of a parent.
- Package a tool kit of hands-on educational materials to assist presenters.
- Raise awareness of the impact of deployment on youth and mobilize communities to provide needed support.

Speak Out Military Kids (SOMK) is a program designed for teens interested in increasing community awareness about the unique issues facing children with deployed parents. Teen participants served as a speakers' bureau for the OMK initiative. Teens received training on the stages of deployment, the effects of deployment on the family unit and public speaking skills. Participants were encouraged to create and utilize media technologies to assist their presentations to schools and community groups.

Hero Packs, care packages filled with age-appropriate items designed to aid youth in coping with their parent's deployment, were assembled by youth and adults volunteers and then distributed to military youth.

Hero Pack objectives were to:

- Provide youth with a hands-on opportunity to support military youth by participating in Hero Pack Assembly events.
- Provide information about local support programs for military families.
- Recognize military youth for their sacrifices in having a parent serving our country and to show them that other children support them.

### **Children, Youth And Families At-Risk (CYFAR) Initiative**

Cultivating Youth and Communities for Positive Futures focuses on developing life skills in at-risk youth populations in two community projects. Each of the community projects was designed and conducted as a collaborative effort among the three Extension programmatic areas in those counties: 4-H Youth Development, Family and Community Health Sciences and Agriculture and Resource Management. Both community projects capitalized on the strength of existing partnerships with other youth-serving organizations and also utilize the subject matter areas of horticulture, gardening, food and nutrition and entrepreneurship in meeting their project goals.

### **Roots of Knowledge**

Primarily targets low socio-economic, high at-risk youth in Atlantic City and Pleasantville. Objectives include: improving science literacy through gardening, increasing healthy lifestyle practices through nutrition education, and improving workforce readiness and life skills in low socio-economic, high at-risk youth pre-K through age 21. This project reached 1,702 youth and nearly 170 families through programs offered in Atlantic City and Pleasantville providing 369 hours of educational experience since its inception. The **Youth Farmstand** Program is an interdisciplinary,

multi-faceted program designed to support local farmers, increase workforce readiness skills and life skills in at-risk youth, and build healthier, stronger communities.

In 2007:

- 59 at-risk/special needs youth participated in the Youth Farmstand Program in 3 counties and 7 sites.
- Over 300 total hours of educational activities were provided by faculty and staff.
- All youth demonstrated increased workforce readiness skills and attitudes at the close of the selling season.
- Youth increased their knowledge of the training program content by an average of 27% based on a 19-item pre/post test.
- 12 of the participants interviewed at a large regional grocer. Five received second interviews, and four received positions there. (as of 11/07, all four were still working there).
- High retention rate of special needs youth: 8% returned for the fourth year, 15% for the third year and 31% for their second year.
- \$19,000 in combined wages earned by youth participants at 6 sites.
- \$1,260+ in profits were distributed among youth participants at 3 sites, based upon stand sales and hours worked.
- In lieu of profit sharing, youth at 3 sites donated produce to local food banks.
- Approximately \$13,000 in produce was purchased from local farmers.
- Over 1,000 cases of produce were purchased from local farmers.
- Suppliers indicated they were satisfied with the program, eager to learn how to access local niche markets, and looked forward to broadening our relationships.
- Over 2,300 customers in economically disadvantaged areas purchased *Jersey Fresh* produce.
- Community residents reported increased access to fresh, quality produce, and that they understood (and felt good about) their contribution towards supporting local farmers *and* youth workforce readiness training.
- 138 Farmers Market Nutrition Program (FMNP) vouchers were used at the stand by senior citizens (78 vouchers) and WIC families (40 vouchers). FMNP vouchers accounted for 5% of total farmstand sales.

### **Workforce Preparation**

**Nicholas Polanin**, Somerset County Agricultural Agent, designed and implemented a Green Industry Vocational Training Program as a workforce preparation program targeting at-risk youth in New Jersey. This was initiated in cooperation with The State Office of New Jersey Youth Corps (NJ Department of Labor) and hosted youth from New Jersey Youth Corps sites. An experiential training program was designed with classroom and field sessions to cover various tasks involved in tree care, landscape maintenance, and horticulture. Local, regional and national employers and tree care professionals are annually recruited as trainers and potential employers of the youth. The curriculum is based on and utilizes materials from the International Society of Arboriculture, the Tree Care Industry Association, the Utility Arborists Association, and

the New Jersey Nursery and Landscape Association. Regional sessions utilized local field, parkland and classroom facilities.

Polanin, along with the directors of the New Jersey Youth Corps, initiated this vocational training program for older teen / young adult clientele of the Department of Human Services throughout New Jersey. The pilot program placed 6 of 18 participants as paid interns with local tree care companies, where they earned a pre-tax total of \$3,720 during the 2-week period. Host companies hired 4 of the 6 to full time positions, where they earned a pre-tax total of \$4,760 during their employment. Host companies ranked the trained interns as 4 overall, on a scale 1-5, with 5 being the highest. Average skill evaluations for this program (2000 – present) for three hundred (580) youth revealed:

- 83% were knowledgeable in employment opportunities in arboriculture, general worker safety practices, and the use and care of personal protective equipment.
- 30% displayed the proper safety techniques in ascending a tree utilizing rope and saddle, working from the top of a ladder, or aerial lift, a 70% increase from pre-test results.
- 36% exhibited a working knowledge of tying-in and other fall-prevention measures when working in and around trees, a 300% increase from pre-test results.
- 40% identified potential electrical hazards and detailed necessary safety measures and precautions when working near electrical lines, a 95% increase from pre-test results
- 85% identified the proper use of climbing spurs, a 188% increase from pre-test results.
- 80% identified the causes of chainsaw kickback and how to prevent it, a 30% increase from pre-test results
- 90% exhibited a working knowledge of proper pruning methods, a 100% increase from pre-test results.

The curriculum was further expanded to include landscaping and horticulture, greenhouse and ground worker safety. This effort afforded the youth training and employment opportunities while also building on the New Jersey Youth Corps' models of leadership and citizen development. Specific evaluations of the participating youth revealed:

- 66% are considering a career in the green industry
- 100% would recommend the training to other potential participants
- 92% would use or share their new knowledge even when following another career choice
- 78% rated the overall program as “Very Good” or “Excellent”

Internet web sites highlighting the program include:

- <http://ext.msstate.edu/srdc/cred/> Arboriculture Training & Internship Program: Workforce Preparation, The Community Resources & Economic Development Web site
- <http://www.nrem.net/programs/flagship.phtml> Arboriculture Training & Internship Program, the Cooperative Extension Service System, Natural Resources & Environmental Management (NREM) Web Site

In summary, Rutgers Cooperative Extension made tremendous impact on its constituents in 2006-2007. Continuing in the theme area of “Enhancing the Quality of Life for New Jersey,” RCE departments make a difference in the quality of life of state residents every day. The Department of Family and Community Health Sciences has focused its efforts on “New Jersey Living Well” with its Get Moving Get Healthy initiative; 4-H Youth Development continues to provide “Positive Futures for Youth” with its Science, Engineering, and Technology focus; and ARMA has broadened its programming in the area of “Agriculture and Horticulture for Environmental, Community and Human Health.” We believe that RCE programs fit well within the overall mission of Rutgers University and that with an increased audience base, reflective of New Jersey’s diverse population, we will continue to be a valued partner locally, regionally and nationally as we move our urban agenda forward.

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