Office Of Communications

Portfolio of Work ‘10 - ’11
New Jersey Agricultural Experiment Station (NJAES) Annual Report Re-Design.

Funding Sources

Funding from government sources provides the New Jersey Agricultural Experiment Station (NJAES) with a foundation for program development and delivery, while competitive grants, contracts, and gifts ensure the scope and impact of research and extension programs.

State-appropriated for 2010 included $21,788,000 in federal ARRA stimulus funds. "Other" funding included restricted and unrestricted gifts, income from sales of service activities, grants and grants-in-aid from non-governmental organizations, as well as federal and stateauxiliary amounts.

NJAES received $471,000 in federal stimulus funds in Year 2009. The funds were used to support help pool and agencies, a large part of the increase in federal stimulus funds was issued by creation of new office.

FACULTY SALARIES

STAFF SALARIES

OPERATING EXPENSES

GRANTS AND CONTRACTS

TABLE OF CONTENTS

Jersey Roots, Global Reach
Commercial Agriculture

What do annual Margarita hongos, stachyurus, espinozas, pears, peaches, apples, grapes, diminutive flowers, bananas, tomatoes, or cacao have in common? All are integral to Rutgers’ world class plant-breeding programs, whose scientists and discoveries have been planted across the U.S. and around the world. New Jersey is ideal for a diverse breeding program, as various crops developed here are either highly adaptable and well suited to the climatic conditions in the eastern United States or to regions of New England where they grow better. The long partnership of NJAES with stakeholders in the turf industry has led to the development of commercially viable turf species. Ornamental deciduous and evergreen species such as pears, peaches, and apples have long been established programs. Newer efforts to breed hardy evergreens as a sustainable horticulture crop were founded by a major effort led by the New Jersey Agricultural Experiment Station, the USDA Northeast Regional Research Center, and the Advisory Committee on Turf. This work is ongoing and yields cultivars that are native to these growing regions, and outstanding ornamental results have been developed by NJAES. Rutgers’ plant breeders provide the farming, landscaping, ornamental, and turf industries with new genetic material; and, in turn, help to fund Rutgers breeding and research programs through royalty streams.

SPECIAL CROPS LINK FARMERS AND CONSUMERS

The Rutgers specialty crops research group, comprising ornamental and plant scientists, is led by Anna Centraline. Ornamental specialty in agriculture to economics and marketing. For the past eight years, the group has worked to document and quantify ethnic produce market opportunities for farmers. For the past two years, the group has conducted a study of the ethnic produce market on the East Coast and other ethnic produce markets in the U.S. and around the world. New Jersey is ideal for a diverse breeding program, as various crops developed here are either highly adaptable and well suited to the climatic conditions in the eastern United States or to regions of New England where they grow better. The long partnership of NJAES with stakeholders in the turf industry has led to the development of commercially viable turf species. Ornamental deciduous and evergreen species such as pears, peaches, and apples have long been established programs. Newer efforts to breed hardy evergreens as a sustainable horticulture crop were founded by a major effort led by the New Jersey Agricultural Experiment Station, the USDA Northeast Regional Research Center, and the Advisory Committee on Turf. This work is ongoing and yields cultivars that are native to these growing regions, and outstanding ornamental results have been developed by NJAES. Rutgers’ plant breeders provide the farming, landscaping, ornamental, and turf industries with new genetic material; and, in turn, help to fund Rutgers breeding and research programs through royalty streams.

GROWING THE WINE GRAPE INDUSTRY

With over six acres of vineyard land, the New Jersey Agricultural Experiment Station is a leader in grape production and research. The cooperative research of the grape program at Rutgers and NJAES in New Jersey is led by Dr. Ramu Govindasamy, extension specialist in agricultural economics and marketing. The program has won numerous awards for its research, including the 2006 “Outstanding Extension Program” award from the American Society for Viticulture and Enology. The program has developed new grape varieties, such as the “Silverado” and “Merlot,” and has conducted research on the economic and social impacts of grape production in New Jersey. New Jersey is home to over 200 wineries, making it an ideal location for grape cultivation.

UNLOCKING THE SECRETS OF DISEASE

The Rutgers plant pathology program is one of the most advanced in the country. It is led by Dr. D. Bhattacharya, who is a world-renowned expert in the field of plant pathology. The program has developed new methods for detecting and combating plant diseases, such as the “Ethnic Bitter Gourd” project, which focuses on developing new methods for detecting and combating plant diseases. The program has also developed new methods for detecting and combating plant diseases, such as the “Ethnic Bitter Gourd” project, which focuses on developing new methods for detecting and combating plant diseases.

NEW JERSEY AGRICULTURAL EXPERIMENT STATION BOARD OF MANAGERS

The New Jersey Agricultural Experiment Station Board of Managers is appointed by the Rutgers University President and the New Jersey Agricultural Experiment Station. The Board of Managers is made up of five members appointed by the Rutgers University President and the New Jersey Agricultural Experiment Station. The Board of Managers is made up of five members appointed by the Rutgers University President and the New Jersey Agricultural Experiment Station.

NEW JERSEY AGRICULTURAL EXPERIMENT STATION STATION MANAGERS

The New Jersey Agricultural Experiment Station Station Managers are appointed by the Rutgers University President and the New Jersey Agricultural Experiment Station. The Station Managers are made up of five members appointed by the Rutgers University President and the New Jersey Agricultural Experiment Station. The Station Managers are made up of five members appointed by the Rutgers University President and the New Jersey Agricultural Experiment Station.
Office Of Communications

School of Environmental and Biological Science (SEBS) Year in Review 2010-2011 Design and Layout.

Table of contents

1 Executive Dean Robert M. Goodman
4 Student life
6 President Richard L. McCormick
9 New facility
10 Dean of Academic Programs Jerome J. Kukor
12 Teaching style
14 Engaging the community
16 International programs
18 Research portfolio
20 Supporting the school
22 Thanking our donors
24 By the numbers

Acknowledgments:
This publication was designed and produced by the Rutgers Office of Communications and Rutgers University, and the Office of Communications and Rutgers University.

Executive Dean Robert M. Goodman

sebs.rutgers.edu

Price per printed copy $1.16
Welcome to this inaugural "Year in Review" publication celebrating the Rutgers School of Environmental and Biological Sciences, which has a long and rich history with deep roots in science-based agricultural education.

Today, reflecting the vast potential of scholarship in the environmental and biological sciences, the school has evolved into an integrative center of teaching and research for the common environments.

In Fall 2010, we enrolled 3,496 undergraduate students, our largest enrollment ever. Our goal is to grow the school to 4,000 through strategic recruitment, here and abroad, and enhanced course offerings that enable the student learning experience.

From the moment they step on campus, our first-year students are exposed to inspiring experiences like the Ryan Family seminars, taught by some professors to small discussion settings designed to give purpose to our students’16-term years and careers.

I’ve been thrilled to learn just how strongly international are our expertise and institutions of our faculty. Coupled with the increasing presence of international students on our campus and the growing options for study abroad, students who grow up in New Jersey as well as those who choose to come to Rutgers from states across the U.S. are gaining a truly global education.

Recent facility hires, made for their interdisciplinary approach to teaching and research, are helping to change the culture of scholarship on our campus. As our faculty incorporate more global dimensions of course work and service learning opportunities beyond the classroom and laboratory, our students benefit from a vastly expanded and enriched college experience.

A journey of discovery awaits you at our school!

By the numbers

8 CENTERS AND INSTITUTES
14:1 STUDENT-TO-FACULTY RATIO
227 ON-CAMPUS FACILITY
73 UNDERGRADUATE RESEARCH OPPORTUNITIES
25 UNDERGRADUATE PROGRAMS
3,496 UNDERGRADUATE STUDENTS
212 GRADUATE PROGRAMS
73 STUDENT CLUBS AND ORGANIZATIONS
12 CENTERS AND INSTITUTES

OFFICE OF THE EXECUTIVE DEAN OF AGRICULTURE AND NATURAL RESOURCES
Robert M. Goodman, Executive Dean
School of Environmental and Biological Sciences

Jenifer J. Richer, Dean
Academic Programs
Interlibrary, online programs

Richard D. Luedeking, Campus Dean
Centralized Academic Services

Mark C. Ciesielski, Dean
Agroschool and Urban Programs
Schools/urban programs

Kelly L. Watts, Associate Dean
Director of Development
school/urban programs

Lisa Estler, Associate Dean
Academic Personnel, Office of Human Resources

Gail Alexander, Chief of Staff
Office of the Executive Dean
dergan.ein@aesop.rutgers.edu

Elwood Abernathy, Dean
Agricultural and Urban Programs

Xenia K. Morin, Associate Dean
Liaison for Sponsored Programs, Office of Career Endowment
dergan.ein@aesop.rutgers.edu

Young W. Jones, Associate Dean
Office of Sponsored Programs, Office of Career Endowment

Xenia K. Morin, Associate Dean
Liaison for Sponsored Programs, Office of Career Endowment
dergan.ein@aesop.rutgers.edu

Lila Y. Young, Dean
Interlibrary, online programs

Contact

A COHORT OF NEW FACILITIES, NOTED FOR THEIR INTERDISCIPLINARY APPROACH TO TEACHING AND RESEARCH, ARE HELPING TO CHARGE THE CULTURE OF SCHOLARSHIP ON CAMPUS, AS RUTGERS INTEGRATES MORE CAMPUS, UNITS OF CURRICULUM, UNDERGRADUATE AND GRADUATE LEARNING OPPORTUNITIES BEYOND THE CLASSROOM. STUDENTS BENEFIT FROM A WIDER AND DIVERGENT COLLEGE EXPERIENCE.

Supporting the school

In the past year, Rutgers announced the public launch of its historic $1 billion fundraising campaign, "Our Rutgers, Our Future," to ensure Rutgers’ place among the world’s top institutions. As part of this campaign, a $1 billion fundraising campaign, "Our Rutgers, Our Future," designed to secure Rutgers’ place among the world’s top institutions.

The New Jersey Institute for Food, Nutrition, and Health is much more than a laboratory, our students benefit from a vastly expanded and enriched college experience. As faculty incorporate more global dimensions of course work and service learning opportunities beyond the classroom and laboratory, our students benefit from a vastly expanded and enriched college experience.

Take the past year, Rutgers announced the public launch of its historic $1 billion fundraising campaign, "Our Rutgers, Our Future," to ensure Rutgers’ place among the world’s top institutions. As part of this campaign, the school has set its own ambitious goal of raising $92 million with the strong support of a loyal and engaged community of alumni, faculty, friends, and partners in industry.

BUILDING NEW LEARNING AND RESEARCH ENVIRONMENTS
The New Jersey Institute for Food, Nutrition, and Health is much more than a laboratory, our students benefit from a vastly expanded and enriched college experience. As faculty incorporate more global dimensions of course work and service learning opportunities beyond the classroom and laboratory, our students benefit from a vastly expanded and enriched college experience.

INCREASING SCHOLARSHIPS AND STUDENT SUPPORT
A public university with a proud tradition of educational opportunity, Rutgers is committed to making higher education accessible to students from all socioeconomic backgrounds. Scholarships, scholarships and financial fellowship opportunities are available to help students succeed and graduate on time.

Recent faculty hires, made for their interdisciplinary approach to teaching and research, are helping to change the culture of scholarship on our campus. As our faculty incorporate more global dimensions of course work and service learning opportunities beyond the classroom and laboratory, our students benefit from a vastly expanded and enriched college experience.

FACULTY AND RESEARCH More than 225 teachers and researchers, many with national and international reputations, are housed within what is proposed as Rutgers’ most sustainable, planned facility.

The Rutgers Gardens continues to grow, thanks in part to more than $75,000 in gifts this year. The New Jersey Institute for Food, Nutrition, and Health is much more than a laboratory, our students benefit from a vastly expanded and enriched college experience. As faculty incorporate more global dimensions of course work and service learning opportunities beyond the classroom and laboratory, our students benefit from a vastly expanded and enriched college experience.

Schools and campuses across the country and behind the campus. As our faculty incorporate more global dimensions of course work and service learning opportunities beyond the classroom and laboratory, our students benefit from a vastly expanded and enriched college experience.

Recent faculty hires, made for their interdisciplinary approach to teaching and research, are helping to change the culture of scholarship on our campus. As our faculty incorporate more global dimensions of course work and service learning opportunities beyond the classroom and laboratory, our students benefit from a vastly expanded and enriched college experience.

The New Jersey Institute for Food, Nutrition, and Health is much more than a laboratory, our students benefit from a vastly expanded and enriched college experience. As faculty incorporate more global dimensions of course work and service learning opportunities beyond the classroom and laboratory, our students benefit from a vastly expanded and enriched college experience.
WHAT IS "THE RUTGERS ADVANTAGE"?

- Nationally recognized turfgrass program
- World-class facility
- Focused turfgrass curriculums
- Low student/teacher ratios
- Strong faculty commitment to students

UNDERGRADUATE DEGREE OPTIONS

A world of opportunities will open up to you when you pursue a degree in Turfgrass Management at the School of Environmental and Biological Sciences at Rutgers University. The undergraduate program in turfgrass management at Rutgers leads to a degree in Plant Science with an option in Horticulture and the Turf Industry. The Turfgrass Management curriculum is designed for students who are seeking a strong background in applied turfgrass science and entry into the turf industry upon graduation. Students who want a deeper understanding of the basic sciences can select a research option which is excellent preparation for graduate school.

WHY TURFGRASS MANAGEMENT?

Turfgrass is a multi-billion dollar industry in the United States. Excellent turfgrass management skills are essential for the maintenance of golf courses, parks, athletic fields, and aesthetically pleasing landscapes for businesses, homes, and communities. However, opportunities in turfgrass management do not stop there; they expand well beyond the world of sports into park planning, wildlife conservation, and home and commercial landscape management. A major in turfgrass management would appeal to people with an interest in environmental enhancement and the design, creation and preservation of quality recreational areas. Students in this major will gain an understanding of the importance of turf in land use and development. They will learn the science and technology associated with turfgrass management and the importance of turf as a sustainable land cover. Demand for turfgrass professionals has grown in popularity over the past decade. In addition, the turbulence industry associated with farms, parks, athletic fields, schools, and industrial parks employs thousands of people in NJ and throughout the country. The demand for sound turf management information causes a constant need for well-trained turfgrass managers.

WHAT ARE THE CAREER OPPORTUNITIES?

The world of turf management is vast and is constantly changing and expanding. Take a look at the Career Opportunities Chart below for a list of some exciting job possibilities in the field.

If you don't like the idea of spending your day working on a beautiful golf course or at a finely-manicured sports facility, there are many career options for students with training in turfgrass management. You might consider a job in athletic field management, the lawn care industry, pest management, private consulting, or in the sale of turfgrass maintenance equipment, styling, and so on. Here are some suggestions for students interested in the environmental field or working with a landscape architect. (Or, maybe you would like to write for a trade magazine or work at an academic institution or industry affiliated research facility. Whatever your choice, the opportunities are there if you have the necessary education and skills.

HOW MUCH MONEY CAN YOU MAKE AS A TURFGRASS PROFESSIONAL?

In general, entry-level salaries currently range from $40,000 to $75,000. However, experienced turfgrass professionals can earn well over $100,000 per year.

Here are a few examples:

- Golf course superintendents can make over $150,000 with high end salaries of over $250,000 annually.
- Research scientists command salaries from $60,000 to more than $100,000 annually.
- Landscape contractors earn $100,000 to $150,000 annually.
- Irrigation contractors earn $70,000 to $100,000 annually.
- Lawn care professionals can earn up to $100,000 or more.
The Turfgrass program at the School of Environmental and Biological Sciences at Rutgers University is located at a major research university in New Jersey, which draws students from across the globe. New Brunswick is the gateway to New York City and Philadelphia. Rutgers University offers a comprehensive program of federal and state grants, loans, and work-study jobs, based on financial need and academic achievement. In addition, numerous student scholarships, grants, and awards are available to students majoring in turfgrass management. More than $90,000 in financial aid is awarded annually to turfgrass students at Rutgers University by the New Jersey turfgrass industry. The Turfgrass industry in New Jersey also works closely with the turfgrass program at Rutgers University, providing a great avenue for future career opportunities. WHAT ABOUT FINANCIAL AID?

Rutgers University offers a comprehensive program of federal and state grants, loans, and work-study jobs, based on financial need and academic achievement. In addition, numerous student scholarships, grants, and awards are available to students majoring in turfgrass management. More than $90,000 in financial aid is awarded annually to turfgrass students at Rutgers University by the New Jersey turfgrass industry. The Turfgrass industry in New Jersey also works closely with the turfgrass program at Rutgers University, providing a great avenue for future career opportunities.

HOW DO I GET MORE INFORMATION?

The Center for Turfgrass Science is located at

Rutgers University
School of Environmental and Biological Sciences
59 Dudley Road
Foran Hall, Room 316
New Brunswick, New Jersey 08901-6520

If you still have questions or would like to arrange a campus visit, contact us through turf.rutgers.edu/education/undergraduate.html.

Come see for yourself all that the Rutgers Turfgrass Program has to offer!

TURFGRASS MANAGEMENT CURRICULUM: A TYPICAL 4 YEAR PROGRAM

<table>
<thead>
<tr>
<th>Fall Semester</th>
<th>Spring Semester</th>
<th>Summer Internship</th>
<th>Co-op/Internship</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sophomore</td>
<td>Junior</td>
<td>Senior</td>
<td>Freshman</td>
</tr>
<tr>
<td>General Biology</td>
<td>General Chemistry</td>
<td>General Ecology</td>
<td>General Chemistry</td>
</tr>
<tr>
<td>Introduction to Turfgrass</td>
<td>Turfgrass Management</td>
<td>Turfgrass Management</td>
<td>Turfgrass Management</td>
</tr>
<tr>
<td>Turfgrass Metabolism</td>
<td>Turfgrass Physiology</td>
<td>Turfgrass Physiology</td>
<td>Turfgrass Physiology</td>
</tr>
<tr>
<td>Turfgrass Diseases</td>
<td>Turfgrass Diseases</td>
<td>Turfgrass Diseases</td>
<td>Turfgrass Diseases</td>
</tr>
<tr>
<td>Turfgrass Marketing</td>
<td>Turfgrass Marketing</td>
<td>Turfgrass Marketing</td>
<td>Turfgrass Marketing</td>
</tr>
<tr>
<td>Turfgrass Environmental Science</td>
<td>Turfgrass Environmental Science</td>
<td>Turfgrass Environmental Science</td>
<td>Turfgrass Environmental Science</td>
</tr>
<tr>
<td>Turfgrass Pharmacology</td>
<td>Turfgrass Pharmacology</td>
<td>Turfgrass Pharmacology</td>
<td>Turfgrass Pharmacology</td>
</tr>
<tr>
<td>Turfgrass Physiology</td>
<td>Turfgrass Physiology</td>
<td>Turfgrass Physiology</td>
<td>Turfgrass Physiology</td>
</tr>
<tr>
<td>Turfgrass Chemistry</td>
<td>Turfgrass Chemistry</td>
<td>Turfgrass Chemistry</td>
<td>Turfgrass Chemistry</td>
</tr>
<tr>
<td>Turfgrass Genetics</td>
<td>Turfgrass Genetics</td>
<td>Turfgrass Genetics</td>
<td>Turfgrass Genetics</td>
</tr>
<tr>
<td>Turfgrass Breeding</td>
<td>Turfgrass Breeding</td>
<td>Turfgrass Breeding</td>
<td>Turfgrass Breeding</td>
</tr>
<tr>
<td>Turfgrass Breeding</td>
<td>Turfgrass Breeding</td>
<td>Turfgrass Breeding</td>
<td>Turfgrass Breeding</td>
</tr>
<tr>
<td>Turfgrass Breeding</td>
<td>Turfgrass Breeding</td>
<td>Turfgrass Breeding</td>
<td>Turfgrass Breeding</td>
</tr>
</tbody>
</table>

Students majoring in turfgrass management are encouraged to spend each summer working in the turfgrass industry or with Rutgers faculty through our Summer Internship Program. Moreover, these educators bring a range of expertise and experience to the classroom that simply cannot be found elsewhere. The unique characteristics of our turfgrass program make it possible for students to spend time working on the numerous research farms spanning more than 300 acres and a range of soil and climatic conditions. Rutgers has the largest collection of cool season turfgrasses in the world, and our research farms serve as outdoor classrooms, providing students with unparalleled hands-on experience.

WHAT KIND OF EDUCATIONAL EXPERIENCE WILL I GET AT RUTGERS UNIVERSITY?

Students majoring in turfgrass management are encouraged to spend each summer working in the turfgrass industry or with Rutgers faculty through our Summer Internship Program.
Our Mission is to generate and disseminate knowledge and to provide training and education in the turfgrass sciences to support the turfgrass industry.

This material is based upon work supported by the National Institute of Food and Agriculture, United States Department of Agriculture, under agreement number 2007-51130-03878.

Stormwater Management in Your Backyard
RAIN GARDEN OUTREACH MANUAL

Welcome

Tips on coordinating Rain Garden Education Programs
Lesson Plans for Grades 1-3 and 4-7
Scripted PowerPoint Presentation for high school and adult audiences
Program Evaluations for youth and adult audiences
Program Publicity Materials
Templates for demonstration rain garden fact sheets
Processing with High Pressure

**High Hydrostatic Pressure (HHP)** processing is a process that takes place in a pressure-controlled machine that exposes the clam (and other food products) to 30,000 to 100,000 psi. of ultra high pressure. This intense pressure eliminates pathogenic bacteria, making the product safe for human consumption. It has a value added benefit in that a knife is not needed to shuck clams from the shell. The muscles that hold the shells closed release from the shell so that it is extremely easy to get to the clam meat.

After processing, the clam can be eaten raw on the half shell or toppings can be added for cooking as one would do with hand shucked clams. A Rutgers sensory study determined that high pressure processed clams are liked equally to traditional hand shucked clams by the consumer, the processed clams looked plumper, and testers throughout the study said they tasted just like hand shucked clams. Some liked them better.

### The benefits of high hydrostatic pressure (HHP) processing:

- **No physical damage to clam.**
- **Greater meat yield.**
- **Clams retained taste and texture after HHP.**
- **Perfect Presentation for retail and food service.** Meat appearance is good, undamaged and plump.
- **Pre-shucked and safe for home preparation since a sharp knife is not needed to open the clams.**
- **Economic viability - premium product which is value added.**
- **There is improved shelf life and product integrity.**
- **Eliminates personal injury by shucking knife while shucking in food service operations where high volumes of shellfish might be needed.**
- **Raw clams which are microbiologically safer for consumption.**
- **Ease of handling.**

This process is especially important at this point since there is a growing Public Perception about Seafood Safety, and an increased desire by consumers to eat more fish and shellfish.

Shellfish consumers have always been told not to purchase clams or oysters unless they are alive. High pressure processing does not result in a live animal but since all bacteria which may have been in the clam or oyster is eliminated by the processing, the shellfish are perfectly safe to eat raw.
High hydrostatic pressure (HHP) processing:

- Raw clams which are microbiologically safer for consumption.
- Greater meat yield.
- Better retention of original raw taste.
- Improved shelf life and better product integrity.
- Perfect presentation for retail and food service; glossy, undamaged and plump appearance.
- Economic viability - premium value added product.
- Pre-shucked and safe for home preparation since a sharp knife is not needed to open the clams.
- Eliminates risk of personal injury by shucking knife in food service operations where high volumes of shellfish might be needed.

Shellfish consumers have always been told not to purchase clams or oysters unless they are alive. HHP processing does not result in a live animal but since the majority of the bacteria in clams or oysters are eliminated by HHP processing, the shellfish are safe to eat raw.

Thermal processing of foods (canning, pasteurization) has been around for many years. During thermal processing, the heat has to penetrate into the food product to destroy harmful microorganisms and it can take up to an hour for heat to penetrate into the product. This results in nutritional, flavor and texture losses.

In HHP processing, the pressure penetrates almost instantaneously throughout the product and the process time is independent of product size and shape, unlike thermal processing. HHP processing retains the nutritional quality, taste, aroma, and texture properties of food better than thermal processing.

Although HHP processing effectively destroys most of the harmful micro-organisms (bacteria, viruses, fungi, and molds), a combination of high pressure and moderate temperature (100-180°F) is needed to destroy harmful bacterial spores.

Energy wise, HHP processing consumes similar to less energy as compared to thermal processing.
SEBS Community Day Signage, Design and Layout by Kevin Paccione, and Lori Casciano.
SEBS Graduation Robe Mock Ups for Color Options.
Office Of Communications

Portfolio of Work

4-H Website Design and Layout, Completed.
Pocket Folder Concepts, Design and Layout.
Pocket Folder Concepts, Design and Layout (continued).
Card to Brochure Conversion Concepts, Design and Layout.
Card to Brochure Conversion Concepts, Design and Layout (continued).
Card to Brochure Conversion Concepts, Design and Layout (continued).
NJAES, Cooperative Extension Summary Summit Meeting Cover, Design and Layout.

Rutgers
New Jersey Agricultural Experiment Station

Summary
Summit Meeting

On the
Role of Nutrient Management in Urban and Suburban Landscapes in Nutrient Loading of Surface and Ground Waters

May 13, 2010

Barnegat Bay Partnership
Research. Educate. Restore
How do we feed nine billion people in the year 2050? With estimates that food demand will double from current requirements, do we have the capacity to grow what is needed? How will intensive cultivation affect the environment? Answers to these global questions are neither easy nor simple.

In this public lecture, Dr. Cassman will discuss these challenges as the framework for his research—finding ways to ensure that increases in crop production for human food production, livestock feed, biofuels, and bio-based products do not compromise the quality of soil and water resources or threaten the integrity of natural ecosystems.

Contact the Office of Community Engagement to RSVP by October 14 at 732-932-2000, ext. 4211, or discovery@aesop.rutgers.edu.

Sponsored by the Office of the Executive Dean, School of Environmental and Biological Sciences, and the Office of International Programs, School of Arts and Sciences, at Rutgers, The State University of New Jersey.
Susan Solomon is an internationally recognized leader in atmospheric science, and is the recipient of many prestigious awards including the President’s National Medal of Science and the Bowie Medal from the American Geophysical Union. She was named one of the 100 most influential people in the world in 2008 by Time magazine. She was the co-chair of Working Group 1 of the Intergovernmental Panel on Climate Change, which shared the 2007 Nobel Peace Prize.

RSVP by February 2, 2011
discovery@aesop.rutgers.edu
or call the Office of Community Engagement at 732-932-2000, ext. 4205

We hope you will join us for this dynamic presentation. A reception will precede the lecture.
Mesh Banners for SEBS, NJAES, and Rutgers Cook Campus.

RUTGERS
School of Environmental and Biological Sciences

RUTGERS
Jersey Roots, Global Reach

Welcome to the RUTGERS
George H. Cook Campus

RUTGERS
New Jersey Agricultural Experiment Station
The Food Innovation Center is pleased to feature five outstanding pioneers who have transformed New Jersey’s agricultural treasures into exceptional value-added food products.

From innovative processing and packaging techniques to pioneering US implementation of Ultra High Temperature Pasteurization, Cumberland Dairy’s forward thinking has allowed it to become one of the nation’s largest producers of specialty dairy products.

As the largest and longest running fresh tomato canner in the United States, Violet Packing has been processing vine-ripened Jersey tomatoes for the past 125 years. Today, this iconic company is known for their strong commitment to supporting local agriculture. Violet Packing still reflects its founding dedication to consistent quality and a unique Italian fresh taste.

Starting with Dr. John T. Dorrance’s creation of condensed soup that had a longer shelf life and that was lighter and easier to ship, Campbell Soup Company has had a long history of ground breaking thinking in the food industry. Success has continued as it has carried on as the world’s largest soup producer and leading manufacturer of juice beverages, sauces, and biscuits.

Committed to combining ‘old fashioned goodness’ with the ‘marvel of modern food processing techniques’, P.J. Ritter Company established a cannery in 1917 along the Cohansy River in Bridgeton, NJ, where they produced award-winning catsup and played an important role in the history of New Jersey Agriculture for nearly six decades.

Pioneers in developing the technology and viability of America’s frozen food industry, Seabrook Brothers & Sons freezes and distributes more than 150 million pounds of frozen vegetables across the globe every year. Seabrook Brothers & Son’s highly innovative achievements transformed the frozen food industry and has created tremendous opportunities for local agricultural growers.

www.foodinnovation.rutgers.edu
Equine Science Center, Signage.

RUTGERS
New Jersey Agricultural Experiment Station

Equine Science Center
Better Horse Care Through Research and Education

esc.rutgers.edu

Equine Science Center, Graphic.

RUTGERS
New Jersey Agricultural Experiment Station

New Jersey IS
Horse Country

There is a reason the state animal of New Jersey is the Horse...

Mission Statement
The Rutgers University Equine Science Center is dedicated to better horse care through research and education to advance the well-being and performance of horses and the equine industry.

esc.rutgers.edu

Equine Science Center
Better Horse Care Through Research and Education
Executive Summary

Assessment of Biomass Energy Potential in New Jersey

Ines Grimm and Tim Thomas

John Tiedemann & Michael Witty, Biology Department

Kevin Sullivan, Agricultural Economics

Craig Phelps, Department of Biotechnology

Rutgers University

Partners

Rutgers University, Department of Agriculture & Resource Management Agents
Program Assistants – John Applegate & Vivian Quinn

Bill Sciarappa, PI, Brian Hulme and Kevin Soldo

in the Colts Neck Watershed

Agri-Environmental Assessment of Equine Pasture in the Colts Neck Watershed

Bill Sciacoppa, Ph. Brian Hulme and Kevin Soldo

Program Assistants – John Applegate & Vivian Quinn

Rutgers University, Department of Agriculture & Resource Management Agents

Partners

Rutgers University

Biology Department

Family and Community Health Sciences

Sea Grant Extension

4-H Youth Development

people. While our name changed slightly again, our mission remains focused on key extension issues. RCE faculty and staff

Our Mission

Helping the diverse population of Monmouth County adapt to a rapidly changing society and improve their lives by applying current science-based information. Our program is in constant need of funds, thanks to the generous support of local individuals, businesses, and organizations. Our work is crucial to our mission of helping people achieve better lives. Without your support, we cannot continue to fulfill this mission.

Rutgers Cooperative Extension

Our Vision

Rutgers Cooperative Extension of Monmouth County helps individuals, groups and organizations to address their needs, problems and concerns. We identify issues and provide leadership, organizational skills and commitment to develop appropriate solutions through the educational process.

RUTGERS

New Jersey Agricultural Experiment Station

Assessment of Biomass Energy Potential in New Jersey

Executive Summary

Ines Grimm and Tim Thomas

John Tiedemann & Michael Witty, Biology Department

Kevin Sullivan, Agricultural Economics

Craig Phelps, Department of Biotechnology

Rutgers University

Partners

Rutgers University, Department of Agriculture & Resource Management Agents
Program Assistants – John Applegate & Vivian Quinn

Bill Sciarappa, PI, Brian Hulme and Kevin Soldo

in the Colts Neck Watershed

Agri-Environmental Assessment of Equine Pasture in the Colts Neck Watershed

Bill Sciacoppa, Ph. Brian Hulme and Kevin Soldo

Program Assistants – John Applegate & Vivian Quinn

Rutgers University, Department of Agriculture & Resource Management Agents

Partners

Rutgers University

Biology Department

Family and Community Health Sciences

Sea Grant Extension

4-H Youth Development

people. While our name changed slightly again, our mission remains focused on key extension issues. RCE faculty and staff

Our Mission

Helping the diverse population of Monmouth County adapt to a rapidly changing society and improve their lives by applying current science-based information. Our program is in constant need of funds, thanks to the generous support of local individuals, businesses, and organizations. Our work is crucial to our mission of helping people achieve better lives. Without your support, we cannot continue to fulfill this mission.

Rutgers Cooperative Extension

Our Vision

Rutgers Cooperative Extension of Monmouth County helps individuals, groups and organizations to address their needs, problems and concerns. We identify issues and provide leadership, organizational skills and commitment to develop appropriate solutions through the educational process.

RUTGERS

New Jersey Agricultural Experiment Station

Assessment of Biomass Energy Potential in New Jersey

Executive Summary

Ines Grimm and Tim Thomas

John Tiedemann & Michael Witty, Biology Department

Kevin Sullivan, Agricultural Economics

Craig Phelps, Department of Biotechnology

Rutgers University

Partners

Rutgers University, Department of Agriculture & Resource Management Agents
Program Assistants – John Applegate & Vivian Quinn

Bill Sciarappa, PI, Brian Hulme and Kevin Soldo

in the Colts Neck Watershed

Agri-Environmental Assessment of Equine Pasture in the Colts Neck Watershed

Bill Sciacoppa, Ph. Brian Hulme and Kevin Soldo

Program Assistants – John Applegate & Vivian Quinn

Rutgers University, Department of Agriculture & Resource Management Agents

Partners

Rutgers University

Biology Department

Family and Community Health Sciences

Sea Grant Extension

4-H Youth Development

people. While our name changed slightly again, our mission remains focused on key extension issues. RCE faculty and staff

Our Mission

Helping the diverse population of Monmouth County adapt to a rapidly changing society and improve their lives by applying current science-based information. Our program is in constant need of funds, thanks to the generous support of local individuals, businesses, and organizations. Our work is crucial to our mission of helping people achieve better lives. Without your support, we cannot continue to fulfill this mission.

Rutgers Cooperative Extension

Our Vision

Rutgers Cooperative Extension of Monmouth County helps individuals, groups and organizations to address their needs, problems and concerns. We identify issues and provide leadership, organizational skills and commitment to develop appropriate solutions through the educational process.
Scholarship Appreciation Dinner Program Updated Artwork.

Rutgers School of Environmental and Biological Sciences Scholarship Donors and Recipients
2010 - 2011 Academic Year

A special thanks to our donors for their generous support of our students...

Ben and Eva Adelaja Student Leadership Prize
DONOR REPRESENTATIVE: Dr. Adegboy O. Adelaja
STUDENT: Elissa P. Nagy

Barry and Deborah Venezia Adler International Study Scholarship
DONORS: Dr. Barry Adler and Ms. Deborah Venezia Adler
STUDENT: Stacy Brody

David H. Agans Memorial Scholarship
DONOR: Mr. Franklin Pompper, Jr.
STUDENTS: Lauren A. Baro, Laura R. Chan, Elvie Carway, Michelle R. Huey, Christopher S. Keenum, Nicole M. Peterson

Philip and Ann Aines Endowed Fellowship
DONOR: Dr. Philip D. Aines
STUDENT: Kristy Longene

Philip Alampi Scholarship
DONORS: Mr. Richard J. Alampi, Mr. and Mrs. E. Brockett, Jr., The New York Farmers, Mr. Oakeleigh Thorne
STUDENTS: Anson J. Ahna, Michael M. Broadbent, Helen W. Chandler, James V. Cocchone, Barbara E. Davis, Jeffrey D. Esquivel, Michael C. Fontano, Michele M. Gomez, Julie Haza, Davis Huang, Kristen M. Johnson, Christopher C. Marziano, Mash S. Patel, Bryan S. Ramos

Bayer Environmental Science Scholarship
DONOR REPRESENTATIVE: Mr. Rich Hanrahan
STUDENT: Katelyn A. Venner

Anthony Nicholas Betances Memorial Scholarship
DONORS: Mr. and Mrs. Robert A. Betances, Mr. William K. Rhoads
STUDENTS: Amanda S. Cloke, Luisa Rodriguez

Jayanth Bhatt Memorial Scholarship
DONORS: Dr. and Mrs. Vinaka P. Bhatt
STUDENT: John J. Daub

Eileen Brennan Graduate Scholarship Endowment in Plant Biology and Pathology
DONORS: Dr. Bruce R. Clarke, Dr. Eva Lindsberg Pell, Dr. Barbara A. Zilinskas, Dr. Ann F. Rhoads, Mr. Eugene and Barbara Rutger
STUDENT: Recipient To Be Awarded in Spring of 2011

Murray and Helen Buell Scholarship
DONOR: Mr. Frank R. Buell
STUDENTS: Shyula S. Arno, Kenneth G. Dishaw, Rebecca C. Freitag, Chelsea A. Goodwin, Lynne N. Massenburg

Linda Rudolph Burns Memorial Scholarship
DONOR: Mr. Frank R. Burns
STUDENTS: Britney A. Kelly, Timothy A. Luns, Kevin J. Whitney

Dr. Kenneth and Mrs. Jane Charlesworth Endowed Scholarship in Teacher Education
DONORS: Dr. Kenneth and Mrs. Jane Charlesworth
STUDENTS: Krista Coleman, Gail Stewart

SCHOLARSHIP APPRECIATION DINNER 2010
Scarlet’s Smithsonian Flyer, Design and Layout.

Rutgers Institute of Marine and Coastal Sciences’ undersea Slocum glider RU27, christened Scarlet Knight by the U.S. Integrated Ocean Observing System (IOOS), was launched from Tuckerton, New Jersey on April 27, 2009. For 221 days, scientists and students on both sides of the Atlantic navigated the Scarlet Knight 7,400 km eastward across the ocean.

Entering Spanish waters during the stormy North Atlantic winter, the Scarlet Knight was recovered off the coast of Spain by the Puertos del Estado research vessel Investigador. On December 9, 2009, the Scarlet Knight made safe landfall in Baiona, Spain, the first port visited by Columbus’ vessel La Pinta upon its return from the New World in 1493.

A year to the date after Scarlet reached Spain, she was welcomed to the Sant Ocean Hall at the Smithsonian National Museum of Natural History as its newest exhibit. Scarlet is highlighted on the Smithsonian’s Ocean Portal web site at: ocean.si.edu/ocean-news/underwater-robots-explore-ocean.

The photos to the right are from the induction ceremony celebrating this great collaborative mission. Photo descriptions are below.

First Photo: Scarlet proudly on display in her new home at the Smithsonian National Museum of Natural History.

Second Photo: Shere Abbott, representing the White House Office of Science and Technology Policy, delivers the welcome address to the Smithsonian guests before previewing the film about Scarlet’s journey titled “Atlantic Crossing: A Robot’s Daring Mission.”

Third Photo: Representatives from Rutgers, NOAA, U.S. Navy, Teledyne Webb Research, the Smithsonian Institution, U.S. Department of Commerce, Puertos del Estado, and the White House join in on the ribbon cutting ceremony to officially welcome Scarlet into the Smithsonian National Museum of Natural History.

Fourth Photo: Rutgers undergraduate students chat with Fabien Cousteau about their involvement with Scarlet’s Atlantic crossing mission and the importance of ocean exploration for future generations.
Scarlet’s Great Adventure Event Program.

Celebrate Scarlet’s Great Adventure
School of Environmental and Biological Sciences
School of Arts and Sciences
School of Engineering
Scarlet Knight RU27

December 9, 2010 . Thursday . 6:00 p.m.
Smithsonian National Museum of Natural History
Baird Auditorium and Sant Ocean Hall

COLLABORATIVE EXPLORATION
The Scarlet Knight’s successful Atlantic crossing is a historic demonstration of national and international collaboration. The partnership between Rutgers and Webb Research began in 1999, resulting in the first at-sea deployment of a Slocum glider by Doug Webb and then student Josh Kohut offshore Tuckerton, NJ. That partnership, initiated by the National Ocean Partnership Program, has been sustained by the Office of Naval Research, the National Science Foundation, the National Oceanographic and Atmospheric Administration, the Gordon & Betty Moore Foundation, and the Department of Homeland Security.

Ten years later, funded in part by a gift from a Rutgers alumna, the Scarlet Knight was launched from the same port where Slocum gliders first went to sea.

International partners at Puertos del Estado, the Universidad de Las Palmas de Gran Canaria, PLOCAN, and Qualitas in Spain and the University of the Azores in Portugal made possible the recovery in Spanish waters. This tradition of collaboration is the core of both the U.S. IOOS and the Global Earth Observation System of Systems.

THE CHALLENGER MISSION
The H165 Challenger began the first dedicated scientific circumnavigation of the globe in 1872, a response to the growing public debate on evolution. The British research vessel traversed 111,000 kilometers in 3.5 years, exactly 15 times the distance covered by the Scarlet Knight. At the Scarlet Knight’s landfall ceremony in Baiona, NOAA presented the oceanographic community with another grand challenge: Pilot a coordinated international fleet of gliders along synchronized legs that revisit the historic track of the H165 Challenger.

As with the first Trans-Atlantic glider mission, a circumnavigation will require the use of new technologies like the energy harvesting Slocum Thermal glider. It will require the development of new international partnerships around the globe that link glider technology centers in the U.S. and Europe with new centers developing on other continents. Support to build and deploy this new fleet of ocean-clim gliders, and scale up global glider technology centers, is crucial to the mission. Most importantly, it will require us to excite a new generation of global ocean explorers as we prepare to meet the challenges of our changing water planet.
Spotlights for NIAES, Design and Layout by Kevin Paccione with Art Direction from Lori Casciano.
Spotlights for NIAES, Design and Layout by Kevin Paccione with Art Direction from Lori Casciano.

Each Community a Place for ARTS and Youth to GROW

Helping Entrepreneurs Bring Food Products to Market

Maintaining a Strong Solidarity with the Poor

Tree Climbing Champion with Rutgers Roots Comes Full Circle
Spotlights for NIAES, Design and Layout by Lori Casciano.

2010
A Year In Review

REDDUCING Impact ON OUR Waters
learn about the state’s new fertilizer law
Spotlights for SEBS, Design and Layout by Kevin Paccione.

Gardening
Their Way to
Environmental
Stewardship

Forensics Conservation
Courtyard Spurs
Student Action

Gardening
Their Way to
Environmental
Stewardship

Forensics Conservation
Courtyard Spurs
Student Action

Gardening
Their Way to
Environmental
Stewardship

Forensics Conservation
Courtyard Spurs
Student Action

Gardening
Their Way to
Environmental
Stewardship

Forensics Conservation
Courtyard Spurs
Student Action
Spotlights for SEBS, Design and Layout by Kevin Paccione, with Art Direction from Lori Casciano.

Celebrate Our Community Spirit! @ Community Day on Tuesday September 14, 3:30-6:30 p.m.

Learn First-Hand From Our Scientists and Researchers Be a DISCOVERER

Celebrate scarlet's Great Adventure Rutgers Glider Added to Smithsonian National Collection

Adventures Beyond the Classroom International Summer Scholarships
Spotlights for SEBS, Design and Layout by Lori Casciano.

**Do Soft Skills Drive Economic Success?**

**RUTGERS NUTRITIONAL SCIENTIST HELPS STATE Combat Top Disease Killers**

learn more ▶
We Need a Headline to Place Right Here

Rutgers School of Environmental and Biological Sciences offers a unique learning experience both in and out of the classroom. Cooperative Education, research opportunities, and an outstanding student life and leadership program are all integral components of this unique school experience. The School of Environmental and Biological Sciences prepares students for professional school (medical, dental, veterinary medicine, and law), graduate study, and positions in government, industry, business, and health-related areas.

- Agricultural Science
- Animal Science
- Biochemistry
- Biological Sciences
- Bioenvironmental Engineering (Five Year Program)
- Biotechnology
- Chemistry
- Communication
- Ecology, Evolution and Natural Resources
- Environmental and Business Economics
- Environmental Planning and Design
- Environmental Policy, Institutions, and Behavior
- Environmental Sciences
- Exercise Science and Sport Studies
- Food Science
- Genetics
- Geography
- Geological Sciences
- Journalism and Media Studies
- Marine Sciences
- Meteorology
- Microbiology
- Nutritional Sciences
- Plant Science
- Public Health

For more information, please visit sebs.rutgers.edu or call the Office of Academic Programs and Research at 732-932-3000, ext. 512

sebs.rutgers.edu
Laurel Van Leer
2nd Vice President

Jersey Roots, Global Reach: 4-H Climate Science Program

The Rutgers New Jersey Agricultural Experiment Station’s Jersey Roots, Global Reach: 4-H Climate Science Program delivers programming in Camden and Newark, New Jersey, two urban, high-at-risk communities, to help youth develop a greater understanding of global climate change and its impact on our local communities while addressing a variety of 4-H Science, Engineering and Technology areas. The overall objective is to teach students about the science, causes, and impacts of climate change.

This project is under the CYFAR/SCP program of the National Institute of Food and Agriculture. The program utilizes collaboration across Rutgers University, including Rutgers Cooperative Extension (administered through the Department of 4-H Youth Development) and disciplines of marine science, geography, and environmental science.

Climate change study is an ideal interdisciplinary theme for education. Focusing on the simple concepts and observations of climate science through fun, hands-on activities, the program addresses core curriculum science standards including scientific inquiry, data collection and analysis, examining evidence, and making predictions.

Youth will address climate change issues related specifically to urban communities, such as:

• Increase in temperatures in the cities.
• Increase in flooding and storm effects.
• Impact on human health.
• Changes in distribution of organisms including changes in growing season.
• Increase knowledge in climate change. This will include developing a community service project related to climate change issues in their community.

Webinars conducted with experts in various topics related to the foci aided in the development of the scope, sequence, and identification of activities. The webinar topics include Understanding Climate Change, Effective Strategies for After-School Science Learning, Service Learning in Citizen Schools, and Developing a Scope and Sequence of Learning for Climate Literacy. Recorded webinar links are available as a resource at cyfar.rutgers.edu.

For more information, visit us at cyfar.rutgers.edu.