NEWS FROM THE INTERIM DEPARTMENT HEAD
John Dole

The arching yellow stems of goldenrod,
the goldfinches foraging on the
seed heads on the sunflowers
and the bright orange fruit on the pomegranates
tell me that summer is almost
over in my garden.

Of course, if there were any doubt about that, all
of the students returning to campus is a sure
sign of summers’ end. This is my segue into
discussing our academic programs. Student
recruitment will be one of our key issues this
coming year. Departmental enrollment has
dropped from 190 students in 2006-2007 to only
130 students in 2011-2012. However, despite
the recession, our students continue to get jobs,
especially if they are able to be flexible on
where they live. In fact, within the last month, I
have received announcements for four excellent
horticulture jobs. Potential salaries have always
been an issue of concern for any student and I
am pleased to say that the salary of many
horticulture positions continues to increase.

So what are we doing about this challenge?
This summer we took one small step by hosting
a Horticulture Camp for high school students.
Organized by Liz Driscoll with seed money
from the Bill and Libby Wilder Endowment,
the camp was by all accounts a great success.
The 15 students had a great time learning about
all aspects of horticulture and just hanging out
with fellow horticulture enthusiasts. It will be a
while before we know how many of them
continue on to being hort majors, but at least we
have “planted the seeds”.

Another new initiative is the Plants For
Freshman project being conducted by Julie
Sherk, Lee Ivy, Lis Meyer, and Bryce Lane.
Over 650 students of the First Year College will
receive a durable house plant, donated by
Altman Plants and the American Floral
Endowment, and a visit by one of our current
students, talking about opportunities in
horticulture. Students in the first year college
have not yet selected a major. We hope this
project will increase student awareness of
horticulture and increase the likelihood that
students will select horticulture as a major or
minor or select a horticulture course as an
elective. At the very least we know that the
plants will improve the living spaces of the First
Year College students. Bryce and Lis are also
handing out plants to students in their lower-
division courses and following up on their
students’ reactions to the plants.
These projects will be part of an overall recruitment plan being organized by Lee Ivy and Lis Meyer. They will be enlisting the aid of alumni and industry folks around the state to recruit students both face-to-face and via distance education. Needless to say, any effort to reach young people depends on having a top-notch website and Lis and Lee are working on that as well. Many horticulture programs around the country have reported declines in student numbers, and several have put together successful recruitments plans, in particular, Cal Poly in California. Because the demand for trained horticulturists is continuing to be strong, we need to succeed.

**FACULTY NEWS**

Wayne Buhler and Elaine Levin

Congratulations to **Delmarie Frederici** and **Todd Wehner**, who were married on June 30, 2012, at the JC Raulston Arboretum, in Raleigh, NC. All of the best to both of you!

Sylvia Blankenship

Sylvia Blankenship served as Dean in the Interim of the College of Agriculture and Life Sciences from July 1, 2012 to Sept. 15, 2012. Dr. Richard Linton, a nationally recognized food-safety authority who serves as professor and chair of the Department of Food Science and Technology at The Ohio State University, has been named Dean of North Carolina State University’s College of Agriculture and Life Sciences, effective Sept. 15, 2012.

Blankenship joined the faculty in 1983 in the Department of Horticultural Science, and has served as assistant department head, department head, and associate dean for administration in the college. She is a postharvest physiologist with an emphasis in researching ethylene biology in fruits, vegetables and flowers, and is a Fellow of the International Society of Horticultural Science.

David W. Monks

The News Center for the College of Agriculture and Life Science at NC State reports in its August 31, 2012 issue that **David Monks** has been named Interim Associate Dean and Director of the North Carolina Agricultural Research Service following the September 1, 2012 retirement of Dr. W. David Smith.

Monks currently serves as Assistant Director of the Agricultural Research Service. He joined the N.C. State University faculty in 1989 after working as an extension weed scientist at the University of Tennessee. In the Department of Horticultural Science, Monks served as Extension Leader and Assistant Department Head. He was also responsible for weed management in vegetable and fruit crops. Monks was named Assistant Director of the Agricultural Research Service in 2006. His responsibilities included commodity relations and research station administration. Monks was honored by the American Society for Horticultural Science in 2009 with both the Outstanding Extension Publication Award and the Outstanding Extension Educator Award. He also received the society’s Distinguished Achievement Award in 2006, and in 2005, he received the Educator of the Year award given by the North Carolina Vegetable Growers Association.

A search will be mounted to permanently fill the position of Associate Dean and Director.
Thomas G. Ranney was awarded the ASHS Outstanding Educator Award on July 31, 2012, at the ASHS Annual Conference in Miami, Florida. This award recognizes an educator who has had a distinguished and outstanding graduate education teaching career in horticultural science. Ranney’s research focuses on the genetic improvement of woody ornamental plants across a range of ornamental species. Many of these have been released as new introductions, and nine have plant patents. He has conducted breakthrough work in the use of dinitroaniline herbicides to artificially develop polyploids for overcoming interspecific hybridization barriers in woody plant taxa. A national and international leader in breeding for sterile, noninvasive forms of popular woody ornamentals, his current efforts have expanded to include the development of sterile forms of Miscanthus grass for both landscape ornamental and biofuel use.

Ranney works at the Mountain Horticultural Crops Research and Extension Center, Mills River, NC. Despite the distance of 260 miles from Raleigh, he spends countless hours mentoring his graduate students, who are well prepared for productive careers following completion of their programs. He has published 64 refereed journal articles, 40 of which have been co-authored by graduate students. His primary interaction with students is direct collaboration on research projects, internships, and nonclassroom activities. He works extremely hard to help prepare students for professional careers. He coordinates and facilitates a summer student seminar series, trips to attend industry and research conferences, visits to nurseries and botanical gardens, and field trips to study native flora. His graduate students also participate in diverse teaching and extension activities to further broaden their backgrounds.

Actively involved in teaching, outreach and service in the broader horticultural community, Ranney regularly presents lectures nationally and internationally. He is also an adjunct professor and advisor to several universities and community colleges.

Dennis J. Werner

The Plantarium Show is the major summer trade show in the Netherlands, and Dennis Werner’s ‘Ruby Falls’ redbud received a Silver Medal, his ‘Ice Chip’ Buddleja, called ‘White Chip’ in Europe, won a Bronze Medal, and his ‘Lilac Chip’ received the 2012 Plantarium "Colour
"Your Life Award" and was chosen as the best new plant introduced in the Plantarium Show in twelve years! These are important awards in this flower-enthusiast country! [Link]

Frank A. Blazich was awarded the Outstanding Researcher Award on July 31, 2012, at the ASHS Annual Conference, in Miami, Florida. His research on the propagation and culture of herbaceous and woody plants has resulted in 129 refereed journal articles, 21 book chapters, and numerous other publications. His productivity is legendary; and the list of his publications exceeds 40 pages. From herbaceous perennials to loblolly pines, his research has focused on understanding the role of plant nutrition, growth regulators, dormancy, rooting environment, media, daylength, temperature, micropropagation, and somatic embryos on the ability of a plant to be successfully propagated. Many of the plant propagation protocols used by the nursery industry, botanical gardens, U.S. Forest Service, conservation groups, and others are a result of his research.

A highly distinguished and successful educator and advisor to undergraduate and graduate students, Frank Blazich’s excellence in teaching and research has resulted in numerous awards including Alumni Distinguished Graduate Professor, Fellow of ASHS, National Fellow for Pi Alpha Xi, ASHS Outstanding Graduate Educator Award, Outstanding Alumni Award, College of Agriculture and Life Sciences, University of Vermont; Porter Henegar Memorial Award for Horticultural Research, Southern Nursery Association, and many others. He is also a decorated Vietnam War veteran. He has advised 33 graduate students, 13 at the PhD level. These students have gone on to successful careers in academia, government, private sector, and not-for-profit organizations.

Giving years of service to the department, university, professional societies and community, Frank Blazich has received numerous service awards from the North Carolina Museum of Natural Sciences as a volunteer instructor in their educational program. He has been faculty advisor to Pi Alpha Xi since 1982, and involved with the
Southern Nursery Association, ASHS, and the Horticultural Research Institute, and he has served on dozens of committees and chaired many of them. He has served as an Associate Editor (Ornamental Horticulture) for both the ASHS Journal and HortScience and as Science Editor for the Journal, 1999-2002.

Ten Years “In the Garden”!

Viewers love watching Bryce Lane “In the Garden”! The show also serves as a distance education course, winning an Emmy last year, and being nominated twice again this year. The show has visited nurseries and botanical gardens afar as England, Italy and Brazil.

Viewers, both novices and advanced gardeners, appreciate constructive takeaways. After showing gorgeous archways built with rebar and branches at the Chanticleer Gardens, Lane re-created this Pennsylvania landmark at his home. Lane is always upbeat and honest, showing viewers precisely what is involved in each project.

Lane lacked prior TV experience. His love of horticulture began as a boy in western Massachusetts, where universities and farms were located five miles from the family home. He tended his parent’s bounteous vegetable garden, helped pickle the cucumbers every fall and saved for college by working part-time at the Hadley Garden Center. While carrying heavy bags of manure, straw bales and plants to customers’ cars, Lane realized he loved talking about plants.

Keeping the Garden Center job while studying horticulture at the University of Connecticut, he took the advice of a dear professor, and abandoned plans to manage the Hadley Garden Center in favor of pursuing his master’s degree.

The idea for an instructive gardening show evolved 22 years after Lane began teaching horticulture at NC State. He was initially camera-shy, but Lane’s producer, Sonya Harris observed him teaching his students out in the field one day, and she saw a more natural and enthused style. “I asked him to speak just like that on TV,” she says.

The new season of “In the Garden” first airs on Sept. 22, 2012 and will cover garden trends for 2012, energy-efficient landscaping, and visits to gardens in Atlanta. For Lane, it’s all a joy. “Visiting beautiful gardens and putting to trial intricate gardening practices in my own backyard has been a privilege,” he says, as he returns to his plants.

DEPARTMENTAL HIGHLIGHTS

Wayne Buhler

Welcome to Lis Meyer in her new role as a Lecturer in the department. An NC State alumnus, Lis will be teaching two and four-year courses, will continue to coordinate our certificate programs and will lead our cooperative distance education programs with other institutions. Lis will head our distance education recruitment efforts.

Lee Ivy

Welcome to Lee Ivy, an NC State alumnus and former professor at Sandhills Community College, now a new Lecturer in our department. Lee will be teaching several two and four-year
courses and will be leading our recruitment with high schools and community colleges.

**Horticultural Science Summer Institute**

The July 30, 3012 issue of the NCSU News Center reported the successful inaugural year for the Horticultural Science Summer Institute. Held July 8 to 13, 2012, fifteen high-school sophomores and juniors found out what it’s like to study horticultural science at NC State University’s College of Agriculture and Life Sciences. The teens spent a jam-packed week sampling various academic areas of study and research projects in the Department of Horticultural Science, presented by CALS faculty in Horticultural Science classrooms, labs, greenhouses and field facilities, including the JC Raulston Arboretum. Students toured several horticultural businesses and learned about career opportunities in horticultural fields.

The Horticultural Science Summer Institute was supported by an endowment funded by nurserymen and longtime JCRA supporters Bill and Libby Wilder of Knightdale, and co-sponsored by CALS departments of Horticultural Science, 4-H Youth Development and Family and Consumer Sciences, and NC Cooperative Extension Service.

Sunday began with a cookout, a keynote talk from Bryce Lane, and warm welcomes from Liz Driscoll and John Dole. Monday’s sessions at the JC Raulston Arboretum included lessons in plant collection/identification, post-harvest management in floriculture, and tours of annual trial beds and the Lath House, which shelters rare plants. That afternoon the group traveled to Juniper Level Botanic Gardens and Raleigh’s Plant Delights Nursery, where owner and CALS alumnus Tony Avent led the tour against a backdrop of a threatening storm.

Tuesday morning brought learning opportunities in Kilgore Hall’s classrooms and labs, as students attended separate sessions on ornamentals, vegetable and sweetpotato production, breeding and weed management. Lunchtime included learning, as the teens ate while a panel told them about the work at Goldsboro’s Center for Environmental Farming Systems. There was an afternoon plant identification scavenger hunt on NC State campus, after which the group traveled to Pender Nursery, hosted by owner Jim Deal, and then on to a tour of Bob Kellam and Susan Wyatt’s Kellam-Wyatt Farm.

Wednesday morning began with sessions on potential career paths, explorations into the science of growing peaches, and lessons in bramble breeding and production. Lunch included a discussion of food safety. Early afternoon brought a trip to John Vollmer’s organic production and agritourism business, Vollmer Farms, in Bunn. Later the students returned to campus and learned about cut flower arranging and post harvest care.

Thursday’s activities were at the NCSU horticulture field lab, where students learned about sustainable landscape gardening and rain gardening, before heading over to CALS landscape design instructor Will Hooker’s home backyard for a permaculture (permanent agriculture living organically) tour.

After lunch, returning to Kilgore, the students created landscape design projects for the Kilgore back lawn area.
The afternoon brought lessons in community gardens and a tour of the Highland Methodist Church Community Garden in Raleigh, hosted by Cullen Whitley.

Friday, July 13, 2012 was the camp’s final day, and the students made group presentations about what they had learned during the week. Among impression-making moments the students noted were those about mildew-resistant cucumbers, growing peppers that have no heat, rain-gardening, weed-management, vegetable and sweetpotato production, sustainable planting, bramble tasting, peach grafting and testing how long flower cuttings last in various solutions.

There were also some vivid (or as they described them “gross”) food safety lessons. Students were enthusiastic about Hooker’s lessons in self-sustaining in his garden of fruits and vegetables and his chickens which provide not only eggs but also pest control on his grapevine:

“This was our first year for this program. We had a good time, great presenters and amazing field trips,” said Driscoll, explaining that the final student presentations were intended as “a way for them to debrief, reflect and talk about what they take with them, their perspectives.”

In addition to those instructors mentioned, camp session leaders from CALS included Ted Bilderback, Tim Alderton, Mark Weatherington, Ingram McCall, Alicain Carlson, Chris Gunter, Craig Yencho, Ken Pecota, Joe Neal, Katie Jennings, Nancy Creamer, Michelle Schroeder-Moreno, Julie Grossman, Bernadette Clark, Gina Fernandez, Ben Chapman, Barbara Fair, Helen Krause and Lucy Bradley.

Also joining the students and their families on Friday were camp benefactors Bill and Libby Wilder, and Ross Williams, Executive Director of the N.C. Nursery and Landscape Association, who is a CALS Horticultural Science alumnus.

Former Horticultural Science student Keith Davis became an overnight celebrity when his article “A Ghostly Pursuit” appeared in the July, 2009 issue of Orchids magazine. The story details his discovery of the secret to growing the elusive and celebrated “Ghost Orchid, Dendrophylax lindenii, native to the Fakahatchee Strand of southwest Florida. This beautiful leafless species has a difficult reputation. Growers find it easy to produce quantities of seedlings in flask, but nearly impossible to grow them to adulthood once they are removed. After years of trying, Keith has discovered a method that works well, and he has been recognized by the Audubon Society for his efforts.
Dendrophylax lindenii, the Ghost Orchid

Keith graduated from NCSU in 1979 with BS degrees in Forestry and Horticultural Science (Ornamental Horticulture, and Fruits and Vegetables concentrations), and an additional degree in AG Education. After graduation, he worked on an oil rig in the Gulf of Mexico, and taught Horticulture in a high school in Corpus Christi, Texas. He returned to farm with his father in Reidsville, NC. Developing a passion for orchids, he now has a greenhouse with over 10,000 orchid plants, mostly cattleya hybrids.

For additional information, please see http://www.aos.org/AM/Images/pdf/GhostOrchidSidebar.pdf

Qinghua Shi will be finishing his research in the department as a Visiting Scientist in October, 2012. He has been working with Todd Wehner on mutation breeding in watermelon. Dr. Shi is Associate Professor at Shandong Agricultural University in Taian, China.

Weihua Zhang is starting research as Visiting Scientist in September, 2012. Dr. Zhang is Associate Professor in the Vegetable Institute at the Shandong Academy of Agricultural Science in Jinan, China. She will be working with Todd Wehner for one year on cucumber breeding.

Wishing a speedy and uneventful recovery to Gregory Scott, Laboratory Research Specialist, whose ankle broke when his bicycle slipped on a wet wooden bridge. Gregory is cheerfully riding a knee scooter around the department, and plans to heal and get back on the road soon.

Best to Christie Gordon, Accounting Technician in the CALS Business Office, who is recovering from an illness. We hope she will return to juggling numbers and financial concepts as soon as she is able!

Issac Lewis began full-time permanent employment status on August 1, 2012. His position is now classified as Administrative Support Specialist for Pesticide Safety Education and Assistant to the Department Extension Leader.

New SPA representatives to faculty meetings for 2012-13 are:

On-campus (Raleigh):
Lisa Hopkins, Issac Lewis and Meri Reeber

Off-campus:
Emily Bernstein (located at Mills River, and will attend meetings virtually, via the Polycom).

Bob McRackan, Extension Associate, retired this year. Bob began work with Wayne Buhler in 2000 as Coordinator of the Southern Region
Welcome to our new graduate students for Fall semester, 2012:

Susan Barkley, MS, Jonathan Schultheis
Krishna Bhattarai, MS, Dilip Panthee
Paige Burns, MHS, Chris Gunter
Jennifer Crumley, MS, Jeanine Davis
Diane Ducharme, PhD, Chris Gunter and Penny Perkins-Veazie
Yu Gu, MS, Julia Kornegay
Ben Jones, MHS, Anne Spafford
Jonathan Kressin, MS, Dilip Panthee
Ying-Chen Lin, MS, Allan Brown
Mitchell Schumann, MS, Craig Yencho
Junyan Zhou, 3+X (MS), Julie Sherk

Suzanne O’Connell, a doctoral student in Horticultural Science, recently returned from a month-long exchange program between NCSU-CALS and The University of Zagreb in Croatia. She had the opportunity to visit more than a dozen departments engaged in agricultural and resource management research, and participated in a European course on global climate change. The goal of the exchange was to evaluate, from a graduate student’s perspective, the promise and probability of establishing more formal academic exchanges in the future. She had an amazing time and was very impressed with the organized and enthusiastic welcome from the University of Zagreb. She learned about many research projects that overlap interests of horticultural researchers, such as horticultural crop production (vegetables, fruits, herbs, olives), viticulture/enology, tissue culture (garlic and grapes), marketing, and more.

Croatia is in Southeast Europe. There are three distinct geographic regions, quite similar to North Carolina, which include: the Adriatic coast, the mountains, and the Pannonian plains. Due to the diversity of climates, both temperate and sub-tropical crops are widely grown. The country was heavily influenced by the Austrian, Venetian, and Ottoman Empires, both World Wars, and more recently the rise and fall of communist Yugoslavia. Next summer, Croatia will officially become a part of the European Union. Many researchers are concerned about how EU integration will affect Croatia’s agricultural community. Current research efforts include improvement of production and marketing of high quality and unique regional products, improvement of environmental protection and remediation efforts, understanding and addressing the effects of global climate change, and identifying alternative N & P fertilizers. Suzanne created a travel journal online, and she will be presenting a talk this October at NCSU on the experience. She is available to share more about her experience with anyone who is interested! Read more at: http://suzi-adventuresincroatia.blogspot.com/
Greetings from PAX! Garrett Owen, Co- Vice President for Perennials, tells us that the Fall 2012 PAX Plant Sale will be held at the JC Raulston Arboretum on Saturday, September 29, 2012, 8am to 4pm and on Sunday, September 30, 2012 from 10am to 3pm. Pre-ordering your plants is allowed, but only at full price. Volunteers are welcome to receive a discount. We hope to see everyone there!

Irene Palmer, an MS student working with Tom Ranney, was awarded the Syngenta Glenn Goldsmith Breeding Excellence Scholarship ($7,500). This scholarship is awarded to a student working toward a degree in plant breeding.

Jared Barnes, a PhD student working with Paul Nelson and Brian Whipker, received the John Carew Memorial Scholarship.

Kyle VandenLangenberg, a PhD student, working with Todd Wehner, received the Seed Companies Scholarship.

Read more about these outstanding Horticultural Science students and the scholarships on the AFE web site: http://www.endowment.org/afe-news/press-releases/229-seventeen-scholarships-awarded-through-afe.html

Five NC State Horticulture students have received six scholarships awarded by the American Floral Endowment! The endowment offers 17 different scholarships. NC State had five recipients, and no other institution had more than 2 scholarship winners.
Awards

Three undergraduate NC State Horticulture students have received four scholarships awarded by the American Floral Endowment! The endowment offers 17 different scholarships. NC State had five recipients, and no other institution had more than 2 scholarship winners.

Sarah Leach, a senior, received both the Harold Bettinger Memorial Scholarship and The Fran Johnson Scholarship. Andrew Scruggs, a junior, received the Jacob & Rita Van Namen Marketing Scholarship. Amanda Wilkins, a senior, received the National Greenhouse Manufacturing Association Scholarship.

NEWS FROM AROUND NORTH CAROLINA

Center for Environmental Farming Systems (Goldsboro)
Nancy Creamer and Lisa Forehand

On May 22, 2012, CALS News reported the CEFS receipt of the regional Magrath Award:

Two North Carolina land-grant universities affiliated with the Center for Environmental Farming Systems (CEFS), N.C. State University and NC A&T State University, were among those named regional winners of the C. Peter Magrath University Engagement Award for 2012, presented by the Association of Public and Land-grant Universities (APLU). Established in 2006, the Outreach Scholarship and Magrath University Community Engagement Awards recognize four-year public universities that have redesigned their learning, discovery and engagement functions to become more deeply involved with their communities.

Winners of the awards come from four regions: South, North Central, West and the 1890 university community. CEFS was recognized as the 1890 winner because NC A&T State University was established under the Second Morrill Act of 1890. In addition to the universities, the NC Department of Agriculture and Consumer Services is also a partner organization in CEFS.

Each regional Magrath winner receives a cash prize of $6,000 and moves on to compete for the national C. Peter Magrath University Community Engagement Award during the National Outreach Scholarship Conference at the University of Alabama September 30 through October 2, 2012. The national winner will be announced during the 125th APLU Annual Meeting November 11-13, 2012 in Denver, Colorado.

CEFS was started in 1994 as a center for outreach, teaching and research related to sustainable agriculture, based on a research farm in Goldsboro. During 2008-09, CEFS began an effort to develop sustainable local foods systems for North Carolina, beginning with regional meetings and a statewide summit to develop “game changer” strategies for immediate action with high impact.

These efforts resulted in the comprehensive guide From Farm to Fork: A Guide to Building North Carolina’s Sustainable Local Food Economy. Many of these “game changer” ideas have now been achieved and others are underway: The state legislature established the N.C. Sustainable Local Foods Advisory
Council, CEFS launched the statewide “10% Campaign” in partnership with N.C. Cooperative Extension, and CEFS and 4-H (along with many community partners) won a competitive proposal to serve as a pilot site for FoodCorps, an Americorps service program focused on increasing young people’s access to fresh, healthy foods.

Nancy Creamer is the CEFS director for NC State University, and John O’Sullivan is the CEFS director for NC A&T State University. Other universities receiving the Magrath Awards are East Carolina, Miami (OH) and Colorado State universities.

The CEFS Summer Internship Program concluded on 27 July, and the four CALS-sponsored International interns completed their exciting program abroad. The IPO sponsored two students from the University of Zagreb in Croatia (FAZ) and two students from the National University of Agriculture in Honduras to engage in the eight–week program on sustainable agriculture and community food systems. The interns learned basic research and data collection techniques, worked with community members on development projects and identified constraints and benefits of sustainable agriculture practices. During the final week, Dr. John Sabella traveled to CEFS to give a seminar on what they have learned through the internship.

For more information on the Center for Environmental Farming Systems, visit www.cefs.ncsu.edu, or contact Nancy Creamer, N.C. State University, 919.515.9447, nancy_creamer@ncsu.edu, or John O’Sullivan, N.C. A&T State University, 336.285.4683, johno@ncat.edu

Seasons of Sustainable Agriculture
Lisa Forehand

CEFS Dairy Unit Develops "CowVac" to Control Horn Flies Without Insecticides

The horn fly is the most serious cattle pest in the southern United States. This small biting fly takes about 10 to 12 bloodmeals per day from the cattle; and blood loss can be significant, as infested cattle may carry several hundred to thousands of flies. Traditionally, cattle producers have relied upon insecticides to control these flies. Fly populations have developed resistance to most insecticides approved for use on cattle.

Organic dairy farmers have fewer options to protect their cattle from these pests. It became imperative for the CEFS Dairy Unit to develop an alternative fly management system when it began to study the feasibility of producing organic milk. Addressing the horn fly problem, NCSU Entomologist Steve Denning designed a unique vacuum-powered walk-through fly-trap to remove flies from cattle as they pass through. This innovative solution is now part of routine cattle management at the CEFS Dairy Unit and the herd has been insecticide-free for 5 years.

To learn more about the Pasture-Based Dairy Unit, visit the CEFS website, www.cefs.ncsu.edu.
CEFS is involved in outreach projects which assist 5 communities around North Carolina to plan incubator farms on their own land, not in CEFS facilities. Here are concept plans for two of the incubator farms:

Onslow Incubator Farm Concept Plan

Urban Farming Initiative Concept Plan

Whole Foods Markets has pledged support to the NC 10% Campaign, the initiative of the Center for Environmental Farming Systems, which encourages consumers to purchase locally produced food.

NC 10% Campaign Day was hosted by the Whole Foods Market located at 8710 Six Forks Road on Thursday, July 12, 2012. There were events on July 12-14, 2012. The store donated 5% of its proceeds from that day to the 10% Campaign. Campaign staff were at the store, in addition to vendors from the North Raleigh Farmers Market who set up a mini-farmers’ market right outside the North Raleigh Whole Foods location.

Farmers selling at the market included these NC 10% Campaign partners: Homestead Harvest Farm, Wrenn’s Farm, Cane Creek Farms, Dean Farms and Randye’s Gardyns, Gurley Bath & Body, Chew Monster and Cupcake Mayhem.

For this event, shoppers who spent $100 or more at Whole Foods received a Carolina-grown cotton t-shirt, produced by North Carolina t-shirt shop TS Designs, also a 10% Campaign community partner.

5% Day kicked off the “Love Local Weekend” at the North Raleigh store from July 12-14, 2012. Events included local food tastings, local food cookout, live music, local brewery truck and more. To find out more about weekend events, visit the Whole Foods North Raleigh Facebook page.

Durham Whole Foods Market also celebrated NC 10% Day, having equally locally-enthused giveaways, local food demonstrations and live music. Look for the NC 10% Campaign signs and upcoming event dates in other Triangle stores.
The Center for Environmental Farming Systems, a partnership of N.C. State University, N.C. A&T State University and the NC Department of Agriculture and Consumer Services, develops and promotes food and farming systems that protect the environment, strengthen local communities and provide economic opportunities in North Carolina and beyond.

Since the 10% Campaign started two years ago, more than $16 million in local food purchases has been tracked through the website: www.nc10percent.com. For more information on the Center for Environmental Farming Systems, visit www.cefs.ncsu.edu. For the 10% Campaign, visit www.nc10percent.com. Read more news from the College of Agriculture and Life Science on the CALS News Center.

Local Governments See Health, Economic Benefits of Local Foods!

The adage “health is wealth” is proving true for a host of North Carolina cities and counties. As the costs of treating nutrition-related diseases like obesity (estimated to be $147 billion in 2008) rise, and the disease-fighting benefits of eating fresh fruits and vegetables are proven, municipalities from the mountains to the coast are making the connection between eating well and reducing health care costs. The Wellness Initiative of the North Carolina League of Municipalities (NCLM), providing health insurance options to municipal governments across North Carolina, recently joined the NC 10% Campaign.

“Access to healthy, local foods is a key component of our information and education program,” says Heather Rollins, who helped develop a program to help NCLM’s Wellness Initiative members gain access to local foods. “These programs have been prompted by many factors, including an interest in improving the health of employees, reduced medical costs, reduced workers comp claims and additional employee benefits. We are focused on education, health promotion, and establishing partnerships like the NC 10% Campaign as an important part of this statewide effort for municipal employees”.

The Campaign’s goal is to build a local food economy in North Carolina. North Carolinians spend about $35 billion a year on food. If each person spent 10 percent locally, about $1.05 per day, then about $3.5 billion would be available in the local economy. Individuals and businesses that join the NC 10% Campaign record their weekly local food purchases on the campaign’s website, www.nc10percent.com. The campaign has tracked more than $20 million in local food purchases.

Since it began in July 2010, the 10% Campaign has drawn the support of more than 5,500 individuals and 650 businesses, including 14 local government entities.

Cabarrus County, one of its first supporters, saw their support of local agriculture as a path to economic development. Last year, Cabarrus County partnered with the 10% Campaign. The Cabarrus County Board of Commissioners and county staff found their commitment to the 10% Campaign furthered the county’s economic development, health, and environmental initiatives,” said retired Cabarrus County Manager John Day, a long-time supporter of the 10% Campaign.

Interest in the NC 10% Campaign among local municipalities and associations is growing quickly. The Triangle J Council of Governments, a voluntary organization of municipal and county governments in North Carolina's Region J, including Chatham,
Durham, Johnston, Lee, Moore, Orange and Wake counties, also recently voted to join the Campaign. In June, Orange County Commissioners pledged support to the NC 10% Campaign. Commissioner Barry Jacobs, a long-time CEFS supporter, first introduced both Orange County and the Triangle J Council to the 10% Campaign. He supports the campaign as a way to promote local agriculture.

“We tend to forget, particularly in North Carolina's rapidly urbanizing areas, that agriculture is an important, existing industry that generates income for small farmers, preserves open space and promotes important community values,” Jacobs said. “Purchasing locally produced food is a simple way to both support those goals and to treat ourselves well.”

“We see this as a testament to the campaign’s overall message of community-focused support. This also shows consumers that our local governments feel that supporting our state’s farmers and local food businesses is important,” said NC 10% Campaign Manager Teisha Wymore. “If we have support at each level in the food system, we are successful.”

N.C. Cooperative Extension is a partner in the 10% Campaign, and has designated a local foods coordinator in each of the state’s 100 counties and the Eastern Band of the Cherokee Indians. Sara Lilley Phelps, Marketing Director of the Eastern 4-H Center, has been involved in creating a “Buy Local” campaign in Tyrrell County along with the Greater Tyrrell County Chamber of Commerce. “The 10% Campaign is a great program ‘add-on’ to our ‘Buy Local’ campaign. By publicizing 10%, residents can recognize the produce and seafood that is available, local and fresh,” she says. In July, both the Town of Columbia's Board of Aldermen and the Tyrrell County Commissioners approved resolutions to support the Buy Local program.

CEFS offers four complementary programs for local governments interested in creating or expanding their local food system. For more information please see http://www.cefs.ncsu.edu/whatwedo/foodsystems/localfoodtoolkit.html. For more information on the NC 10% Campaign, see www.nc10percent.com

FoodCorps in NC
Tes Thraves & Liz Driscoll

We are currently hiring our 2012/13 corps and are still waiting to hear if we will be awarded a state commission for even more service members for next year. So far, the year has been exciting and productive. We are looking forward to having a FoodCorps Fellow next year, to help support service members on the ground as well as to do outreach with leadership organizations working in school policy. FoodCorps is one of many organizations exploring a Farm to School Coalition in North Carolina and we look forward to many opportunities to support the increase of capacity for the Farm to School Program in North Carolina. 2012/13 should be a good year!
The JC Raulston Arboretum will be a 2012 recipient of the Sir Walter Raleigh Award for Community Appearance.

The JCRA Staff, Volunteers and Friends of the Arboretum are very excited about receiving this prestigious award. This is the 30th year anniversary of the Sir Walter Raleigh Awards for Community Appearance recognizing outstanding new contributions to the character, environment and appearance of the City of Raleigh. Since 1983, the Raleigh City Council has presented more than 200 Sir Walter Raleigh Awards to developers, designers, building owners, community groups, civic clubs, churches and citizens. The 2012 Awards Ceremony is scheduled for Tuesday October 9, 2012 with a reception starting at 6:00 p.m. at the Nature Research Center 121 W. Jones Street. Jim Goodman is scheduled to appear as the guest speaker for the evening.

Your Membership Makes a Difference!

Membership gifts are the primary support for the JCRA's daily operations and vital for its success. Yes, the JC Raulston Arboretum is free to the public, but it is not free to operate. Memberships keep the gates open and the gardens in top shape.

SPECIAL OFFER! We have a special offer for Department of Horticultural Science faculty and staff. We will include a "personalized" calendar if you join the Friends of the Arboretum membership for the first time or renewing your lapsed membership. If you are a current member, by purchasing a GIFT membership, you BOTH will receive a personalized calendar. The calendar has great pictures from the JCRA plant collections and includes the events and dates important to you each month. To join or renew now, use our secure Web site, or contact Judy Morgan-Davis at (919) 513-0264 or jvmorgan@ncsu.edu. For complete membership details and benefits, visit: http://www.ncsu.edu/jcraulstonarboretum/join_and_support_us/membership/membership.html
**Centennial Campus (Raleigh)**

**Plant Transformation Laboratory (PTL)**

George Allen and Sergei Krasnyanski

Shyam Barampuram and Sergei Krasnyanski are continuing to develop new protocols to transform cotton as part of an ongoing grant from Cotton, Incorporated. The goal of this project is develop a method to transform elite genotypes and develop a non-GMO system to speed the cotton flowering cycle.

Shingo Nagaya (postdoctoral researcher in HS) will work with Rosy Hatch (PhD candidate, HS) on a study to understand the mechanism of how DNA elements called Matrix Attachment Regions (MARs) impact gene expression. We now have our initial results and are now developing models for how MARs effect transgene expression using the model plant *Arabidopsis thaliana*.

The goal of our other NSF project is to understand the epigenetic changes that take place during DNA replication. Mariana Franco, who was funded by this project, received her PhD in HS in May. Mariana is now working in the genomics section of Syngenta at RTP. George Allen presented the data for the project at the NSF Principal Investigators meeting at NSF September 5-7, 2012. Our poster, which summarized our ongoing collaboration with Cold Spring Harbor and the Texas Advanced Computing Center (TAAC), was well received.

In our other PTL projects, we are working with John Williamson and Dilip Panthee to develop tomato that are resistant to various pathogenic fungi. Our preliminary data with several ornamentals has indicated that the celery Mannitol Dehydrogenase gene (MTD) can provide resistance to certain mannitol producing fungi. We have used the same strategy to develop celery MTD-expressing petunia and geranium that show resistance to *Botrytis cinerea*. Our project, “Engineering Fungal Resistance in Tomato”, is funded by the NC Dept of Agriculture and Consumer Service and provides support for a graduate student in John Williamson’s lab and pays for the PTL transformation cost. MTD-expressing tomatoes will be tested for resistance to mannitol-producing fungi. The PTL is also continuing several collaborations that include the USDA, companies, other universities, and NCSU researchers. Please contact George Allen (919-513-1506), if you are interested in developing a project that includes plant transformation.

**NC Research Campus (Kannapolis)**

Mary Ann Lila, Tara Vogelin and Penny Perkins-Veazie

The Plants for Human Health Institute (PHHI), located at the N.C. Research Campus in Kannapolis, hosted two visiting scholars from Bhutan as part of an international partnership promoting environmental conservation and the discovery of health-beneficial plant compounds. The Bhutanese scientists, Chencho Dorji and Mani Prasad Nirola, conducted research with PHHI director Mary Ann Lila and her team from July 9 through July 25, 2012.
Dorji and Nirola’s visit to the N.C. Research Campus has been four years in the making. Lila traveled to South Asia in 2008 to pursue a vision of scientific collaboration that had never been undertaken in Bhutan. She met with representatives from the Institute of Traditional Medicine Services, the National Biodiversity Centre and the Royal Government of Bhutan, including the prince, to propose a first-of-its-kind partnership between Western science and Bhutanese traditionalism.

The resulting arrangement granted American plant scientists access to Bhutan’s rich biological resources, under the condition that the intellectual property they helped create would remain in Bhutan. In return, Bhutan’s budding conservation research programs could tap into established American scientific resources to learn and grow at an accelerated rate. “The premise of the project is that we’re engaging in bioexploration, which involves providing scientific resources to a developing country rather than taking them away,” said Lila. “We supply all of the equipment necessary to research native plants for health beneficial compounds, conduct scientific trials with locals to educate them on the processes and then leave the supplies and intellectual ownership of our discoveries with the Bhutanese people.”

The partnership marks the first time the Institute has welcomed scientists from Bhutan, but, according the Lila, has the potential to become a long and fruitful relationship.

Nestled high in the Himalayas between global economic powers India and China, Bhutan is an economically-modest country steeped in agricultural tradition and rich in biodiversity. With more than 70 percent of the population dependent on agriculture for their livelihood, agro-biodiversity is the backbone of the national economy, according to the Bhutan Ministry of Agriculture and Forests.

Bhutan has always taken strong steps to conserve biodiversity. In 1974, Bhutan put into place a conservation policy requiring the country to maintain at least 60 percent of its land as forest cover at all times. The country’s Ministry of Agriculture and Forests reported that the country was roughly 73 percent forest with about 7,000 species of plants, 770 species of birds and 167 species of mammals in 2006. A people known as much for their loyalty to tradition as their conservation efforts, the Bhutanese have relied on “traditional knowledge” of plants and food crops for centuries. Traditional knowledge draws on indigenous practices regarding the uses and characteristics of plants and animals. But times are changing. According to the World Conservation Union, one in every eight plants in the world is threatened by extinction, a statistic not lost on the Bhutanese.

“Traditional healers in Bhutan may know that a certain plant helps human health in a certain way, but science can identify why and how,” said Lila. “Our partnership aims to target and leverage beneficial plant compounds, provide credibility and scientific documentation for Bhutan’s native plants, and help them establish their own research programs to continue this good work for future generations.”
Jeff Chandler assumed the responsibilities of Director of the Mountain Horticultural Crops Research and Extension Center at Mills River, North Carolina on August 1, 2012. Jeff will oversee facilities of the Center at Mills River as well as the research operations at the Mountain Horticultural Crops Research Station. Mills River, in addition to being the location of the Mountain Horticultural Crops Research Station, houses faculty not only in the Department of Horticultural Science, but also in Departments of Entomology, Biology, Plant Pathology, and Soil Science, and is a focal point for agricultural research, activities and meetings in western North Carolina.

We are pleased and excited about Jeff’s appointment, the coordination of activities that will follow, and the continuing excellence in agricultural research and extension programs.

Jeff previously served as Superintendent of the Sandhills Research Station near Jackson Springs, North Carolina for 9 years, and as Assistant Superintendent of the Cherry Research Farm prior to that. Jeff was a livestock and field crops agent in Polk and Wayne Counties before beginning his work on research stations. He is highly regarded by faculty and clientele for his work. Jeff is a graduate of NC State University, with a double major in Animal Science and Poultry Science, and also holds a Masters in Crop Science. He is a native of Montgomery County, and he and his wife, Amy, have four children.

Please join us in welcoming Jeff in his new role at Mills River.
Horticulture Facilities
John Dole and Wayne Buhler

We are continuously solving problems related to water leaks and subsequent damage in our old building.

ADDENDUM

Plant a Radish, Get a Radish
The Fantasticks
Music by Harvey Schmidt
Book and lyrics by Tom Jones
1960

Plant a radish, get a radish.
Never any doubt.
That's why I love vegetables;
You know what you're about!

So, plant a carrot, get a carrot,
Not a Brussels sprout.

That's why I love vegetables.
You know what you're about!
Life is merry, if it's very vegetarian!
A man who plants a garden
Is a very happy man!

Plant a beanstalk, get a beanstalk.
Just the same as Jack.
Then if you don't like it,
You can always take it back!

But if your issue doesn't kiss you,
Then I wish you luck.
For once you've planted children,
You're absolutely stuck!

Every turnip green! Every kidney bean!
Every plant grows according to the plot!
While with progeny, it's hodge-podgenee.
For as soon as you think you know what kind
you've got, it's what they're not!

So, plant a cabbage, get a cabbage.

Not a sauerkraut!
That's why I love vegetables.
You know what you're about!

Life is merry, if it's very vegetarian.
A man who plants a garden
is a very happy man!