NEWS FROM THE DEPARTMENT HEAD
Julia Kornegay

It was a rather quiet summer. The undergraduate students disappear and the building gets really quiet. Faculty and graduate students are frequently gone as they travel the state to evaluate field trials at research stations or attend professional meetings to present their research results. Summer is also a time for vacations with families and friends and to recharge our internal batteries before the fall semester begins.

During the summer, Dr. Ted Bilderback was appointed Director of the JC Raulston Arboretum after serving as Interim Director for two years. Dr. Jim Ballington started phased retirement and is working half time for three years. Renovation of Dr. Jim Burton’s lab was initiated and will be completed by October, 2010. The National Research Council (NRC) report “Toward Sustainable Agricultural Systems in the 21st Century” was released by the National Academies with a press briefing session at the National Press Club in Washington, D.C. As Chair of the committee that wrote the 570 page report, some of my time this summer was spent responding to the press and other media about the report. I also developed a new graduate-level course, Public Garden Administration that I teach this fall.

In January 2011, I will be stepping down as Department Head after 7.5 years in the position. I will return to the faculty ranks and will take on more teaching and research responsibilities. I will also serve as the Director of the Graduate Program for the department. I am very excited about the upcoming change and am looking forward to working more closely with our students. I plan to continue the work we started with the NRC report, but focus primarily on horticultural systems. I may also resume some plant breeding – which I did for nearly 20 years before becoming an administrator.

Over the last seven years, the department has undergone profound changes. One of my greatest satisfactions has been the hiring of about one-third of our total faculty, as a number of our senior faculty retired or left for other positions. These new faculty have brought enormous enthusiasm, ideas, and expertise to the department, and I am confident that they will maintain and further the high standards and national reputation that our department has had over the years.

My most difficult job as department head has been the implementation of a series of painful budget cuts mandated by the state legislature and college that reduced our total budget by over 17%. This was done primarily by reductions in faculty, staff, and other positions, while trying to maintain core expertise and strength in our primary program areas. While state funding to the department has declined, external funding through grants, contracts, and gifts has more than doubled since 2003, and it is now over $6 million per year.

One of my final responsibilities as department head has been to oversee the external review of our graduate and undergraduate programs. This review is required by the university every 7 years or so. We brought in a high level review team who spent three days with us doing a thorough assessment of our undergraduate and graduate programs, and gave us some excellent feedback. We have already implemented some of their recommendations.
Now that it is September, the halls of the Kilgore are once again full of students. With the excitement of a new semester and new classes, it full steam ahead till December.

**Faculty News**  
Todd Wehner and Elaine Levin

**Dr. Ted Bilderback** has been appointed Director of the JC Raulston Arboretum effective July 1, 2010. He has served as Interim Director since January 1, 2009. The JC Raulston Arboretum is a nationally acclaimed garden with the most diverse collection of cold hardy temperate zone plants in the southeastern United States. It is primarily a working research and teaching garden that focuses on the evaluation, selection and display of plant material gathered from around the world. The Arboretum is named in honor of its late director and founder, Dr. J.C. Raulston. Ted is the fourth director of the Arboretum since it was established in 1976.

Ted is a professor in the Department of Horticultural Science, where he began his academic career in 1977. He worked closely with Dr. Raulston in the early years of the Arboretum development and Ted’s students were responsible for planting many of the older specimens in the collections and the older holly border.

Ted served as a Nursery Extension Specialist from 1987 to 2009, working in close collaboration with the nursery industry. He continues to serve as an educational advisor to the North Carolina Nursery and Landscape Association. His research led to the development of cost effective and environmentally conscious cultural practices for growing nursery stock, with emphasis on container substrates, irrigation practices, and plant and substrate nutrient levels. His research investigations have included 24 graduate students and have resulted in 57 scientific papers and a total of 541 published articles. His extension programs introduced new technologies to the nursery industry through county horticulture agents via distance education courses and to the nursery industry through many workshops and popular nursery publications.

Ted is married to Linda Bilderback and they have two adult sons.

An international effort coordinated at N.C. State University that has revealed the genetic makeup of the peach could have far-reaching implications for the future of peaches as well as related plants such as roses, strawberries, raspberries, cherries, apples, plums and even poplar and chestnut trees.

**Bryon Sosinski,** associate professor of Horticultural Science, was the American coordinator of an effort to sequence the genome of the peach. Bryon said the International Peach Genome Initiative (IPGI) spanned the globe, involving scientists in Italy, Spain and Chile. In the United States, N.C. State, the DOE Joint Genome Institute, Clemson University and Washington State University were the principal partners.
Bryon said that in the U.S., the effort was funded by the U.S. Department of Energy, while the Italian government funded the international effort. He added that the peach genome sequence is available online [http://www.peachgenome.org](http://www.peachgenome.org).

When the genome of an organism is sequenced, scientists determine the order, or sequence, in which the nucleotides, or molecules, that make up DNA appear on chromosomes. These nucleotides are identified by the letters A,T,C,G, so a genome sequence is a long list of these letters.

While sequencing the genome of an organism is a significant scientific achievement, Bryon said it is just the beginning of scientific work related to the genome. The genomic sequence of an organism is roughly equivalent to a book that is simply a long list of letters, without spaces between words or punctuation, paragraphs or chapters.

Todd Wehner was elected president of the National Association of Plant Breeders at their annual meeting in Johnston, Iowa in August, 2010. For information about the NAPB, see PlantBreeding.org.

Huseyin Tumturk, visiting scholar from the May Seed Company in Antalya Turkey, has finished his research on parthenocarpic (seedless) cucumbers with Todd Wehner. Huseyin will be returning to his home in October, after 6 months at NC State.

Rain Garden Seminar. On Monday, September 20, 2010, Helen Kraus and Anne Spafford gave a seminar entitled: “Rain Gardens in the South: All the Cool Gardeners Have One... You Should Too!”

If rain gardens really are the next best thing to sliced bread, why don't you have one of your very own yet? Come learn about what a rain garden is...and isn't! Rain gardens capture and treat urban runoff water and protect our drinking water supplies. In addition, they are gorgeous additions to a home landscape. Participants learned what writing a popular gardening book is REALLY like, as they shared the wild experience of writing, publishing, touring/lecturing, and the multitude of other outreach efforts. It's been a wonderful, hectic two years, but wait until you see what Helen and Anne are up to now, rain garden research efforts and ongoing projects!

**Awards**

**Richard Hartlage** is the 2010 Outstanding Alumnus for Horticultural Science. He has agreed to give a seminar and meet with students and faculty during his visit (September 29 to October 2, 2010).

Please plan on attending our Outstanding Alumnus Reception on Friday, October 1st at 2:00 pm in 121 Kilgore Hall (Conference Room).

Richard graduated in 2007, but he was a student in the Department during the late 1980's. He is the principle landscape architect/designer and partner in the large firm AHBL. Richard wrote the book, *Bold Visions for the Garden* in 2001, and in 2009 he was the only landscape designer in Metropolitan Home and Garden Design magazine's "Design 100" list.

Prior to becoming a partner at AHBL, Richard worked for 15 years in public gardening as Superintendent of Horticulture for the Morris County Park Commission in Seattle, where he directed horticulture at both Willowwood and Frelinghuysen Arboretums. As Director of Seattle’s Elisabeth C. Miller Botanical Gardens, Richard initiated the highly successful regional education program "Great Plant Picks," which promotes the best performing plants for the Pacific Northwest. Richard has received numerous awards and recognitions for his design work. He is also the Hartlage of "Hartlage Wine", an interspecific sweetshrub cultivar from a cross he made when he worked with **J.C. Raulston** at the JC Raulston Arboretum.
Visit one of Richard’s designs at: http://www.pointclickhome.com/remodel/articles/midsummer_landscape. During this past year, AHBL was awarded the job for designing the landscape for the glass artist, Dale Chihuly's exhibit at the Seattle Space Needle. The complex will be called 'Chihuly at the Needle.'

**John Williamson receives first Departmental Safety Award.** The Horticultural Science Safety Committee evaluated candidates for the 2010 Safety Incident of the Year Award. In recognition of "overcooked" soil samples that resulted in a 5:00 am (Saturday!) phone call to the Department Head by the Campus Fire Marshall, the Paul Nelson Lab received third place in an incident entitled, "Mary 'Peat' is no longer in the building--but her fires keep on burnin.'" Water faucet abuse in the Steve Clouse lab led to a cascade of water flowing down to the lecture hall below. This incident entitled, "The drippings will continue until the moldew in Kilgore returns (or, until we get a backup generator for my lab)", received 2nd place. An individual awardee, John Williamson, received first place with his incident, "Everyone must evacuate the building so I can eat my scorched popcorn alone." The voting was so overwhelmingly positive for John that the Safety Incident of the Year Award was renamed the "Johnny D." A trophy was presented to John at the final Faculty Meeting of the '09-10 academic year. In addition to the take-home trophy, John received the unabridged microwave cooking safety guidelines from NIOSH and a coupon for scorch-proof microwave popcorn. NCSU has the “Johnny V. Award” to commemorate former glory days in basketball, but we in Horticulture can take pride in bestowing the "Johnny D".

Congratulations to Dr. Williamson.

Submitted by Wayne Buhler, Safety Committee Chair
Photo Credit: Bill Fonteno

**STAFF NEWS**
Elaine Levin

Meetings of the Horticultural Science faculty are also attended by a representative staff member. This staff member reports to the faculty about matters of concern to the staff. Beth Harden is the outgoing staff representative. Congratulations to Chris Harlow and to Angela Oldham who will now represent the On-Campus SPA personnel and to Amy Hamilton who will represent the Off-Campus SPA personnel at faculty meetings.

**GRADUATE PROGRAM**
John Dole and Rachel McLaughlin

Please welcome our newest graduate students for Fall semester, 2010:

**Jared Barnes.** Jared was born in Martin, Tennessee and is most recently from Union City, TN. In May 2008 he received his BS degree from the University of Tennessee majoring in environmental biology. From August 2005 to mid-2008, he was a garden columnist for a local bimonthly magazine. Prior
to starting his graduate program, Jared worked on a sweetpotato farm, a nursery and in January 2007, he began a landscaping business. He completed his MS in Horticultural Science this past summer under the direction of Brian Whipker and will graduate in December. While working towards his MS, Jared has been very active in Pi Alpha Xi and the Horticulture Club. Jared will be working on his PhD degree with Paul Nelson and Brian Whipker.

Leethaniel Brumfield III. Leethaniel was born in Chicago, Illinois and is most recently from Stillwater, Oklahoma. In May 2009 he received his BS from Langston University located in Langston, OK, majoring in biology with a minor in chemistry. While pursuing his BS degree, he had numerous internships and scholarships including the Siemens Foundation Teacher Scholarship, the Exxon-Mobil Corporate Scholarship, the Edwin W. Gaston, Jr. Scholarship and the Palmolive-Colgate Undergraduate Scholarship. Currently he is working on a MA Teaching degree at NCSU. He has been awarded an NSF Graduate Research Fellowship and a GEM Fellowship. Leethaniel will be working on his PhD degree with David Monks and Katie Jennings.

Raymond Jacobs III. Ray was born in Charleston, South Carolina and is most recently from Green Pond, SC. In May 2009 he received his BS at Cornell University majoring in plant sciences. Through his experiences with Cornell’s undergraduate horticulture club, he became increasingly interested in the business side of plant breeding, resulting in his decision to get a business minor. During his four years at Cornell, working with the horticulture club allowed him to travel to Puerto Rico, Costa Rica, the UK, Germany and Holland. He became president of the club during his senior year, leading the club to raise nearly $40,000 and organizing a trip for eighteen members to explore horticultural production systems in Panama. Following his graduation from Cornell, he participated in a year-long internship with Seminis Vegetable Seeds in California. Ray will be working on his PhD degree with Jeremy Pattison.

Chen Jiang. Chen was born in Beijing, China. In July 2010 she received her BS degree from Nanjing Agricultural University (NAU) majoring in agronomy. While pursuing her BS, she received research experience working in the National Key Lab of Crop Physiology and Ecology at NAU. She was also a journalist and chief of the school press group and English tutor for her classmates at NAU. Chen will be working on her MS degree with Jonathan Schultheis.

Norimah Jumat. Ima was born in Kota Kinabalu, Malaysia and is most recently from Petaling Jaya, Malaysia. In February 1996 she received her BS degree from University Putra Malaysia, majoring in horticultural science. After graduating, she did some work with various landscaping businesses. From 2000 to the present time, Ima has been the Principal Assistant Director in the Department of Agriculture Malaysia on a broad range of fruit projects. Ima will be working on her MS degree with Penny Perkins-Veazie.

Moo Jung Kim. Moo Jung was born in Busan, South Korea and is most recently from Yangsan, South Korea. She received her BS and MS degrees from Seoul National University majoring in plant sciences and horticultural science, respectively. After receiving her MS, she worked as a researcher with the Research Institute for Agriculture and Life Sciences at Seoul National University. Moo Jung will be working on her PhD degree with Penny Perkins-Veazie.

Jason Lattier. Jason is a Raleigh, North Carolina native. In May 2007 he received his BS degree from NCSU double majoring in horticultural science and plant biology with a minor in business management. After graduating, Jason was a research intern at Longwood Gardens in Pennsylvania, a visiting scientist at the Nectandra Institute in Costa Rica, a research intern at Garden Genetics in Pennsylvania, a Bent Creek Institute volunteer at the NC Arboretum in Asheville, and a research intern at our Mountain Horticultural Crops Research and Extension Center in Mills.
River. He also received the RHS McLaren Horticultural Scholarship from the Garden Club of America & Royal Horticultural Society, which allowed him to visit gardens and participate in study programs throughout the United Kingdom. Jason will be working on his MS degree with Tom Ranney.

Shen Ma. Shen was born in Guilin, China. In July 2007 she received her BS from Beijing Forestry University majoring in horticulture. In December 2009 she received her MS from Mississippi State University, majoring in ornamental horticulture. Her MS thesis research involved flower forcing on banana shrub and bougainvillea. Shen will be working on her PhD degree with Todd Wehner.

Irene Palmer. Irene was born in Asheville, North Carolina. In May 2009 she received her BA degree from Centre College in Danville, Kentucky, majoring in environmental studies with a minor in history and international relations. While receiving her BA degree, her studies took her to Merida, Mexico for one semester. She spent three months studying Mayan civilization and improving her Spanish. In summer 2005, after she graduated high school, Irene began working with Tom Ranney. She has continued to work with Tom on and off from May 2005 until the present time. While working at the Mountain Horticultural Crops Research and Extension Center, she was given the opportunity to conduct her own research project and she was able to produce two award-winning presentations and a publication in HortScience as the primary author. Irene will be working on her MS degree with Tom Ranney.

Rebecca Pledger. Rebecca was born in Brenham, Washington. In May 2010 she received her BS degree from Stephen F. Austin State University, majoring in ornamental horticulture. While pursuing her BS degree, Rebecca was a student assistant with the SFA Mast Arboretum. She was also very involved in the SFASU horticulture club, starting there as secretary and moving up to president. In the summer of 2009, she interned at the Missouri Botanical Garden in St. Louis. Rebecca will be working on her MHS degree with Ted Bilderback.

Brandon Smith. Brandon was born in Greensboro, North Carolina and is most recently from Franklinville, NC. In May 2010 he received his BS degree from NCSU, double majoring in horticultural science and plant biology. From May 2009 and until he began his MS program, he worked at the Horticulture Field Lab for Helen Kraus and Ted Bilderback. He is also very active in the departmental Horticulture Club and Pi Alpha Xi. Brandon will be working on his MS with Katie Jennings and David Monks.

Brad Thompson. Brad was born in Pinehurst, North Carolina and lives in Raleigh, North Carolina. He received his BS in May 2003 from NCSU majoring in meteorology with a minor in horticultural science. After graduating from NCSU, he began working full time as a research technician under the supervision of Jonathan Schultheis. In Fall 2006, he began taking graduate level courses. After doing very well in those classes, he decided he would like to pursue an MS degree. Brad will be working on his MS with Jonathan Schultheis.

Awards

Jared Barnes has been awarded the 2010 American Conifer Society (ACS) scholarship and the 2010 Roy A. Larson Floriculture Scholarship. The ACS scholarship selection is based on merit in the field of horticulture. Jared was sponsored by The Scott Arboretum. This scholarship is valued at $2500.00. Awards from the Roy A. Larson Floriculture Scholarship are given annually to one or more undergraduate or graduate students within the Department of Horticultural Science at NCSU. The selection of recipients is based on scholarship, leadership, character and potential for service to the field of floriculture. The goal of this program is to teach, reward and encourage students who have a high degree of interest in and commitment to floriculture.
In this year's Graduate Student Research Symposium competition, Stephen Lawrence Meyers, doctoral student in Horticultural Science, received second place for his poster entitled, 'Palmer Amaranth Interference in Sweetpotato.' Steve’s interest in horticultural crops and weed science began while he was a student in Indiana. A native of Rensselaer, IN, he received his B.S. degree (with distinction) in 2007 from Purdue University, with a major in Horticultural Production and Marketing, along with minors in Plant Biology and Weed Science. NC State's strong horticultural science graduate program enticed Meyers away from Purdue. A campus visit to NC State in Spring 2007, where he met Horticultural Science faculty and graduate students, and decided to attend NC State’s graduate school.

Steve’s graduate research on Palmer amaranth interference in sweetpotato is unique. He says that although much research has been done on the "... interference and control of Palmer amaranth in agronomic crops (corn, soybean, cotton) ... little research had been conducted in sweetpotato."

Palmer amaranth is a vigorous weed that has the potential to reach heights of over six feet and produce as many as half a million seeds per plant. This sort of growth competes with the production of crops for light, water, and nutrients. Understanding these interactions make for well-informed management decisions.

Steve says that Palmer amaranth is "... especially common and troublesome in the Southeastern U.S., which is where 80% of the sweetpotato acreage in the U.S. is located. Palmer amaranth greatly reduced sweetpotato yield and quality." He continues to explain that tall Palmer amaranth plants intercept sunlight before it reaches the low growing sweetpotato foliage, thus interfering with the sweetpotato yield. Additionally, the sweetpotato plants produced limited amounts of carbohydrates used to create storage roots.

One of the more interesting findings in Steve’s study is that at low densities Palmer amaranth tended to grow wider and branched out more than plants at higher densities. The result was that even at low densities, this weed was still capable of intercepting large amounts of sunlight, consequently contributing to large sweetpotato yield and quality losses.

Steve found that creating a poster for the symposium using limited space, and which included all the pertinent information from a larger study, was a challenge. "Creating a poster that could be easily understood by individuals of multiple educational backgrounds but that adequately covered research from a very specific niche within plant science was a great learning experience."

What does Steve do when he's not chasing down Palmer amaranth? He says that he spends his "...spare time removing weeds from my large vegetable garden." But he also enjoys growing and collecting orchids, making homemade wines, and fishing.

Steve suggests that graduate students surround themselves "...with the most knowledgeable, innovative, and experienced advisor and committee members available in your discipline and be willing to accept criticism."

Suzanne O'Connell was recently awarded a $10,000 graduate student grant from the Southern Sustainable Agriculture Research and Education Program (S-SARE) which is funded by the U.S. Department of Agriculture-National Institute of Food and Agriculture (USDA-NIFA) for her research project entitled, "Predictors of short-term nitrogen availability in
organic farming systems that utilize warm season cover crops”.

Suzanne has also been awarded a U.S. student Fulbright fellowship from the U.S. Department of State to study abroad in Honduras during the 2010-2011 academic year. She will be conducting research on the use of cover cropping in the tropics in conjunction with Zamorano University and CIDDICO (The International Cover Crop Clearinghouse). This opportunity will compliment her dissertation research on short-term nitrogen mineralization from warm-season cover crops in North Carolina.

In addition, Suzanne received a research and education scholarship from the Organic Crop Improvement Association (OCIA) this past Spring for her PhD research focused on green manures in organic farming systems.

**UNDERGRADUATE PROGRAM**

Bryce Lane and Betty Coleman

The Fall Semester is off to a good start! Classes are full, and students are excited (at least for now!). Our Undergraduate student enrollment in Horticultural Science is now at about 160 students, slightly down from last year at this time. We have an equal number of freshmen and new transfer students. About 76 students are in our General Concentration, 68 in Landscape design, and 12 in the Science Concentration.

The student Horticulture Club has been busy with their first meeting and the fall picnic. Both events had great turn outs, with attendance at 60-80 people. The club has a full schedule for the Fall semester: Regular meetings with speakers, intramural football, community service projects, PAX Plant Sale, and the famous Fall field trip! This year the club is sponsoring a student trip to the Asheville area at the end of September! We will be visiting the North Carolina Arboretum, Biltmore House, Hawksridge Nursery, the Mountain Horticultural Crops Research and Extension Center in Mills River, as well as doing some mountain hiking.

As we continue to do more with less, our undergraduate program remains strong. We have a group of very dedicated faculty who work hard to provide our students with an outstanding educational experience. We are planning for the future by offering more and new service courses, and we will continue to offer the best quality undergraduate program for science based hands on horticulture!

Come see us!

**NEWS FROM AROUND NORTH CAROLINA**

Center for Environmental Farming Systems (Goldsboro)

Nancy Creamer and Lisa Forehand

CEFS Launches Campaign To Build North Carolina’s Local Food Economy; 31 Businesses/Organizations Already on Board to Support the 10% Campaign!

The Center for Environmental Farming Systems (CEFS) launched a new statewide effort to build North Carolina’s local food economy. The 10% Campaign encourages consumers to spend 10 percent of their existing food dollars on foods produced in North Carolina. By supporting local food producers and related businesses, the 10% Campaign will create jobs, boost the viability of North Carolina farms and fisheries and promote healthy communities statewide.

“In these challenging times, buying local foods will benefit our farmers and fishermen and help grow our economy”, said Dan Gerlach, Golden LEAF president. Golden LEAF is proud to support the 10% Campaign because North Carolina’s agricultural products are fresher, tastier and healthier.
North Carolinians spend about $35 billion a year on food. If individuals spent 10 percent on foods produced locally, roughly $1.05 per day, about $3.5 billion would be available in the local economy.

“North Carolina is uniquely positioned to capitalize on the increased consumer demand for locally produced foods”, said Nancy Creamer, co-director of CEFS. “Agriculture is the backbone of our economy. The state’s climate, soils and coastal resources support production of a wide variety of produce, meats, fish and seafood. We have the capacity to build a robust local food economy to the benefit of all; and the 10% Campaign will help to get us there.”

Critical to the success of the 10% Campaign is the active support of the North Carolina Cooperative Extension. Extension has designated a local foods coordinator in all 100 counties and for the Eastern Band of Cherokee Indians to help connect consumers and food producers, and to support local businesses and organizations who want to participate in the campaign.

“CEFS could not have undertaken this statewide effort without Extension”, said CEFS co-director, John Sullivan. “These 101 on-the-ground experts will provide consumers, producers, and local businesses with key information and support. We are thrilled to have them as a partner.”

Compass Group, the world’s largest foodservice company, is another key partner. In addition to sourcing 10 percent of the produce it sells to all its North Carolina clients from local producers, Compass Group will also work with CEFS to develop a model farm to institutional buying program.

Three opportunities exist for businesses and organizations to participate in the 10% Campaign. They can pledge 10 percent of their purchasing/growing power; host an employee/member challenge; and/or promote the campaign externally.

Two of the campaign’s 31 launch partners include North Carolina State University, College of Agriculture and Life Sciences, and North Carolina A&T State University, School of Agriculture and Environmental Sciences. Both have pledged to join the campaign at each of the three levels. Additionally, the North Carolina State University Campus Enterprises and University Dining has pledged to serve 10 percent locally grown or produced foods at all campus dining facilities, including all catering operations, by 2012.

The website address is http://nc10percent.com/about.php for more details about launch partners and how consumers, businesses and organizations can support the campaign.

Individuals interested in joining the 10% Campaign can register online at http://www.nc10percent.com/ and pledge to spend 10 percent of their food budget on foods produced/grown locally. The website also hosts a wealth of information about the efforts of the many great organizations already working in the field.

The 10% Campaign is truly a collaborative effort. Our intention is to support existing efforts to promote local foods, establish new ones as needed and work to develop the missing links necessary to build North Carolina’s local food economy, said Nancy. Carolina Farm Stewardship Association, Appalachian Sustainable Agriculture Project, Cabarrus County, North Carolina Department of Agriculture and so many others are already in the field, doing great work. The campaign will support and promote these and other efforts through the website and with the help of the local food coordinators.

For more information about participating in the campaign, contact the 10% Campaign Manager Teisha Wymore at: nc10percent@ncsu.edu or by phone at 919-515-0244.
**JC Raulston Arboretum (Raleigh)**
Ted Bilderback

Friends of the Arboretum Lecture and Reception for Ted Bilderback. On July 29, 2010 at 7:00 pm, a reception was held for our new director of the Arboretum, Ted Bilderback.

At 7:30 pm, Mike Parker presented an overview of the rich history of peach production in North Carolina, and what it takes to successfully grow peaches. Mike covered some of the basics of where peaches can and do grow. He also discussed some of the newer and unique characteristics of peaches that are now being sold. The evening ended with a tasting of different cultivars of North Carolina grown peaches, which pleased everyone! "Peaches of North Carolina - What Could Be Finer?"

**Notes from the JC Raulston Arboretum.**
Construction on the new lathhouse began in August and will be completed in October, just in time for the Southern Region International Plant Propagators Society meeting visit on October 12, 2010. Another new feature at the JCRA is Rebecca Pledger, our new graduate student. Rebecca was a 2010 summer intern and is now integrating a public gardens dimension into her graduate studies. Another new element for the JCRA is the development of a children’s education program and a plan to offer an elementary science education module in 2011. Our fall schedule of events, including Friends of the Arboretum lectures and Plantsmen’s walks, are now on line. Come and join us!

**Garden Conservancy’s Open Days (Raleigh).** *(Sponsored by the Garden Conservancy and the JC Raulston Arboretum).* The Garden Conservancy’s Open Days Program came to Raleigh, North Carolina, in September, featuring four private gardens to visit on Saturday, September 19 and 20, 2010. A portion of the proceeds from the weekend will benefit the JC Raulston Arboretum, a working research and teaching garden of NC State University.

Visitors started the tour on either day at the JC Raulston Arboretum at 4415 Beryl Road in Raleigh, where discount admission tickets were sold (six tickets for $25.00).

**Centennial Campus (Raleigh)**
George Allen and Sergei Krasnyanski

Two new basic research grants were recently received and a couple of other projects are being started at the Plant Transformation Laboratory (PTL):

1. We received a grant from NSF (3 years at $627,000) in which **George Allen** is the PI and Bill Thompson (Plant Biology) is the Co - PI. This grant will provide support for Rosy (Roselyn Loreen Hatch) for finishing her PhD project and for us to hire a new postdoc. The title of the grant is "Molecular Mechanisms of MAR Effects in Arabidopsis". MARs (Matrix Attachment Regions) are important regions of DNA in the genome of eukaryotes, which are thought to play a role in gene expression, DNA replication, and nuclear organization. Bill and George have been doing work for many years to understand the role of MARs and how they alter gene silencing.

2. This grant (#1) will also be synergistic with another five-year grant that we are receiving from the NSF Plant Genome Research Program to study epigenetic changes that take place during different phases of the cell cycle in Arabidopsis and maize. The final official amount of the second grant (#2) has not been officially determined. Hopefully, the exact amount will be known in a couple of weeks. This grant will involve George Allen (Co-PI -- Horticultural Science), Bill Thompson (PI -- NCSU Plant Biology), Linda Hanley-Bowdoin (Co-PI -- NCSU, Molecular and Structural Biochemistry), Rob Martienssen (Co-PI -- Cold Spring Harbor, NY), and Matthew Vaughn (Co-PI -- University of Texas).

3. The PTL (Sergei Krasnyanski, PI -- Horticultural Science) is also in the process of developing an improved cotton transformation
protocol to produce novel plants. It appears that Cotton, Inc will help to fund this work.

4. We (the PTL) also plan to submit a grant to NSF-BREAD as part of a collaboration with Venganza (a company in our building), and NARO (Uganda) to produce tomato and banana that have resistance to multiple pathogens that are endemic to Uganda.

5. In a related project that was submitted to NCBC (John Williamson, PI -- Horticultural Science and Dilip Panthee, Co-PI -- Horticultural Science), we hope to develop tomato that express Mannitol dehydrogenase (MTD) for fungal resistance in addition to using the Venganza technology to develop improved resistance to additional tomato pathogens.

6. We are developing new collaborations for the use of nanoparticles for plant transformation (Nagoya University, Japan) and are also developing a Yam transformation protocol (NC A&T).

Horticultural Crops Research Station
(Clinton)
Allan Thornton

The vegetable production in the summer of 2010 has experienced a season of extremes. It was too cold and wet to get started in the spring, and then the weather turned into a dry baking summer. Many places had rain showers dump too much rain or miss them altogether. That said, sweetpotato harvest is underway with what looks to be a respectable crop. Fall vegetables are fairing rough as the heat continues.

NC Research Campus (Kannapolis)
Mary Ann Lila, Tara Vogelin and Penny Perkins-Veazie

Dr. Jeremy Pattison, strawberry breeder, N.C. State University at the N.C. Research Campus, and Chef Mark Allison, Dean of Culinary Education, Johnson & Wales University, delivered a presentation introducing a new partnership on Wednesday, September 15, 2010, on the Johnson & Wales campus, located at 801 West Trade St. in uptown Charlotte.

N.C. State University agricultural researchers and Johnson & Wales University culinary professionals and students are working together in a first-of-its-kind project: “The N.C. Strawberry Project.” It is a dynamic effort created to strengthen the agricultural sector of the N.C. economy. The project connects plant breeders with the culinary world and introduces “chefs of tomorrow” to agricultural research and to N.C. farmers. The overarching goal is to glean important information from the culinary industry, produce buyers and consumers with whom the N.C. State strawberry breeding program can cooperate to breed a better N.C. strawberry. The project, supported by a $200,000 Golden LEAF Foundation grant, is the first to connect the culinary world with the plant breeders, researchers and producers in this manner. Johnson & Wales, with its internationally recognized culinary education program, brings the Charlotte campus’ renowned Chef, Mark Allison and JWU students – the “chefs of tomorrow” – to the table.

During this year-long project with N.C. State, they will help identify the characteristics that culinary professionals and high-end restaurants are looking for in strawberries, such as flavor, color, texture and size. Chefs commonly serve as intermediaries between growers and consumers, which gives chefs a unique insider’s perspective of the fresh produce market demands of both parties. Through a series of guest lecturers from the agricultural sector and visits to the N.C. Department of Agriculture & Consumer Services’ Piedmont Research Station in Salisbury and local farms, JWU students will learn about the science and business of food production.

Strawberry breeder and researcher, Jeremy, part of N.C. State’s Plants for Human Health Institute (PHHI), located on the N.C. Research Campus in Kannapolis, will incorporate the culinary feedback into his efforts to breed a better N.C. strawberry. Jeremy is working to
identify and encourage particular characteristics in the strawberry to produce a strawberry plant uniquely suited to the North Carolina climate. North Carolina became only the third state to dedicate the resources to a full-time strawberry breeder when N.C. State hired Jeremy in 2008. The goal, says Jeremy, is to develop superior strawberry varieties that will taste better and contain qualities that N.C. consumers, chefs and producers indicate are important.

**Muscadine Grape Program (Kenansville)**  
Connie Fisk

September is a busy month for North Carolina's muscadine industry. The weather this year sped up ripening and some growers started picking some of their fresh varieties in early August!

Future event: A muscadine grape growers meeting at the Duplin County Cooperative Extension Office planned for the evening of Thursday, November 18, 2010.

**Mountain Horticultural Crops Research and Extension Center (Mills River)**  
Tom Ranney

The summer vegetable field day was a big hit, which included a visit by Chancellor Woodson himself. Harvest of tomatoes and apples are in full swing with great crops. Hisanori and Chikako Kojima, two interns from Japan, have been working and studying with the nursery crop breeding program in Mills River (picture below). To this point, their English is better than our Japanese. Antony LeBude has been on extended road trips visiting nurseries across NC to collect water samples. So far, he has encountered two rattlesnakes, some green herons, fifty dogs, and plenty of good quality irrigation water.

**Initiation of the New Mountain Organic Research Unit.**

On August 31, 2010, over 115 people showed up to learn about and provide input on the new organic research unit at the Mountain Research Station in Waynesville. Visitors toured field studies on weed control barriers for peppers, heirloom and heirloom-type hybrid tomatoes, and grafted tomatoes. They also got some hands-on experience removing row covers which had been applied to protect broccoli variety trial from flea beetles. Following the field tour, there was a tomato taste test, a lunch featuring tomato sandwiches, a trade show with local vendors of organic agricultural products, and a community listening session on the development of the unit.

For the past three months, the coordinator of the project, Emily Bernstein, has been interviewing organic and small farm research units across the country, surveying farmers, extension agents, and others in an effort to create a program that would best meet the region's needs. She will soon be surveying researchers in CALS to get their input. The organic unit is led by Jeanine Davis and this planning phase is funded by USDA Specialty Crops Block Grant administered through the NC Department of Agriculture and Consumer Services.
Work is progressing nicely on the renovations to Jim Burton's laboratory in Kilgore Hall. Just remember that things will get a little messy in that area before they finish. We are looking forward to having a cutting edge and asbestos-free lab for growth regulator and herbicide research.

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