

Department of Horticultural Science Newsletter

Winter 2007

North Carolina State University, Raleigh, NC 27695-7609

http://www.cals.ncsu.edu/hort_sci/

DEPARTMENTAL HIGHLIGHT

Lucy Bradley

Community gardens are as varied as the neighborhoods in which they thrive. Each is developed to meet the needs of the participants who come together to grow fruits, vegetables, flowers, herbs and ornamental plants on common ground. In addition to providing fresh fruits and vegetables to those on a limited income, gardens can also build community, teach life skills, promote health, and much more. Community gardens can be found at such diverse locations as schools, parks, housing projects, places of worship, vacant lots, and private properties. NC State University Cooperative Extension has established an integrated taskforce of professionals from A & T School of Agriculture, NC State Extension Education, Family Consumer Science, 4-H Youth Development, and Horticultural Science to develop materials and train agents to support Communities in using Community Gardens as a tool for achieving a variety of outcomes. Two day workshops for county teams were conducted at the Fletcher Research Station in July, 2007 and at the Edgecombe Extension Office in December, 2007. Additional training is planned for the piedmont region in 2008.

For more information on Community Gardening see

<http://www.ces.ncsu.edu/depts/hort/garden/CommunityGarden/index.html> in addition, there are community gardening resources for county agents available at

<http://www.ces.ncsu.edu/depts/hort/garden/CommunityGarden/AgentsOnlyCommunityGarden/index.html>

Look for the AG Publication "How to Organize a Community Garden" by Keith Baldwin & Lucy Bradley due out in the Spring 2008.

On November 28-29, 30 Extension Agents and 60 Volunteer Master Gardeners from across the state came to J.C. Raulston Arboretum to learn more about creating and managing **Demonstration Gardens** as tools for achieving program goals. Mark Weathington and Denny Werner (Assistant Director and Director of J.C. Raulston Arboretum) kicked off the event with a comprehensive tour of the arboretum focusing on maximizing the educational value of a garden. Agents, specialists and guests gave a variety of presentations.

In addition Carl Matyac, Horticulture Agent Wake County, and Wake County Master Gardeners provided tours of the demonstration gardens at the state fair grounds. There are a variety of successful **teaching gardens** at Cooperative Extension Offices across the state, for example: New Hanover Arboretum, Wilson Botanical Garden, and Pitt County Arboretum. In addition, a number of Cooperative Extension agents are managing teaching gardens off site in cooperation with other organizations: Forsyth County uses Tanglewood Gardens, and Carteret County uses the North Carolina Aquarium. These gardens take a variety of forms and focus on a myriad of themes including heritage gardens, children's gardens, edible gardens, drought gardens, rain gardens and more. Master Gardeners and Agents are using these gardens to teach, conduct research and to demonstrate environmentally responsible gardening and landscaping principles.

FACULTY NEWS

Todd Wehner

Paul Fantz has announced his retirement, effective July 31, 2008.

Shengping Zhang completed his research on cucumber genetics as visiting scholar with **Todd Wehner**, and has returned to the Institute of Vegetables and Flowers in Beijing, China.

Two demonstration units were built on the Small Farm Unit in 2006 using funds from an Extension Small and Part-Time Farm grant and an Extension IPM grant led by **Mary Peet**. The two demonstration units were designed with slightly different features to emphasize cost savings vs. heat retention. Cool-season crops, including lettuce, broccoli and greens were successfully grown over winter, with the addition of warm season crops, like tomatoes, in the spring. Tomatoes survived early season frosts with the added protection of row covers. Two large research units were constructed in the C2 field below the Small Farm Unit in a rush of activity this spring so that they could be ready for the 2007 research season. Original funding for tunnel construction came from a SR-SARE Research and Extension grant to Mary Peet and Frank Louws, although much-appreciated contributions in terms of guidance, labor, infrastructure and facilities, have been made by CEFS, Cherry Research Center, the O'Berry Center and NCA&T. The SR-SARE grant also supports the graduate studies of Cary Rivard, a Ph.D. student in Plant Pathology and Suzanne O'Connell, an M.S. student in Horticultural Science.

Liz Driscoll and Carol Norden took a group of budding horticulturists from the Wake County Junior Master Gardener 4-H program to Fort Wayne, Indiana to participate in competitions at the National Junior Horticultural Association (NJHA) on October 5-9. The Wake County team received the Grand National Champion Award in the Open Category (ages 15-19), where they identified plant material, took a written exam, and judged plant specimens. The team won four additional National Awards. Twenty-two younger students (ages 5-14) received individual Grand National or National Awards for projects submitted in Gardening, Plant Propagation, Experimental Horticulture, and Environmental Awareness.

The Wake County team is coached by Carol Norden with assistance from her son Daniel Norden. Carol is a Master Gardener employed with Wake County Extension who coached the team from Wake County that placed third in the 4-H Category in 2006, and the team that won the NJHA Grand Award in 2002.

In addition, Carol currently is teaching plant identification in a HS 211 lab with Paul Fantz as a volunteer departmental Teaching Assistant. Daniel currently is a departmental graduate student completing his M.S. degree under the direction of Frank Blazich and Stu Warren. Liz Driscoll is our Extension Associate providing leadership and support of Extension youth programs throughout North Carolina.

Awards

Randy Gardner received the 'educator of the year' award from the NC Vegetable Growers Association at their annual meeting in Myrtle Beach, SC on December 12.

STAFF NEWS

Dolores Lawson

Absalom Heatwole Shank joined the small fruits program in September as technician with Dr. Gina Fernandez. He is from Brussels, Belgium, and has been living in the US for the past 9 years. He received his BS degree at Eastern Mennonite University in Harrisonburg, VA, with a double major in Environmental Science and International Agriculture.

GRADUATE PROGRAM

John Dole and Rachel McLaughlin

We are pleased to announce the following Fall 2007 graduates: MHS awarded to **Ms. Amy L. Tillman**, "The Influence of Root Mass on Subsequent Vegetative Growth of Rooted Stem Cuttings of Selected Woody Landscape Plants,"

Dr. Frank Blazich and Dr. Stu Warren, Co-Chairs.

MS awarded to **Mr. Daniel S. Norden**, "Development of Protocols for Containerized Culture of Seabeach Amaranth (*Amaranthus pumilus*) and Nitrogen Nutrition of Southern Seoats (*Uniola paniculata*) Grown in the Float System," Dr. Frank Blazich and Dr. Stu Warren, Co-Chairs.

MS awarded to **Ms. Maria F. Onofrietti**, "Propagation and Cultivation of Bloodroot (*Sanguinaria canadensis*)," Dr. David Danehower and Dr. Jeanine Davis, Co-Chairs.

PhD awarded to **Ms. Michelle S. McGinnis**, "Vermicompost Amended Pine Bark Substrate Improves Nursery Crop Production," Dr. Stu Warren and Dr. Ted Bilderback, Co-Chairs.

PhD awarded to **Mr. Matthew D. Taylor**, "Elucidation and Control of Sudden pH Decline of Geranium," Dr. Paul Nelson, Chair.

UNDERGRADUATE PROGRAM

Bryce Lane and Betty Coleman

The department conferred degrees on twelve students on December 19 at the **commencement ceremony** held at the JC Raulston Arboretum. After a busy semester of class and extra curricular activity the faculty and students were glad to see the semester come to a close. The spring semester kicks off on January 9.

The fall semester came with it's own set of challenges. **Dr. Stuart Warren** left the Department on December 1 to become Department Head at Kansas State University. Stu taught in both the 2-year and 4-year program for 20 years and contributed greatly to the undergraduate program in many ways. He served as the PLANET (ALCA) team advisor and also served as Horticulture club advisor for many years.

Betty Coleman was out for the whole fall semester on leave caring for her husband Mel who passed away from Cancer on December 14. Betty will be back in January after a little rest and recovery form a strenuous fall.

NEWS FROM AROUND NORTH CAROLINA **JC Raulston Arboretum**

Dennis Werner

Greetings from the JC Raulston Arboretum. This summers' drought has been tough on the collections at the JCRA. We have limited staff and irrigation infrastructure to adequately water all of the collections on a timely basis, so we resorted to the use of moveable sprinklers, spot watering, Gator Bags, and lots of dedicated assistance from volunteers. Thanks to our garden staff, summer interns, and our wonderful volunteers whom so faithfully came in to assist our staff to water our collections.

The JC Raulston Arboretum for Excellence general endowment fund has now passed the \$100,000 level. This endowment fund generates yearly income that can be used for any worthy purpose at the JCRA. One of the most serious challenges the JCRA faces is the lack of recurring yearly revenue from endowment funding. Many botanical gardens and arboreta benefit from significant yearly endowment fund revenue to sustain operations, but we do not have that luxury at the JCRA. One of my goals as Director is to build our endowment funding to ensure a more dependable cash flow for the JCRA in the future. As a consequence of your generous contributions, we have made significant progress in the past two years growing the endowment fund. Continuing the tradition initiated by previous director Bob Lyons, I routinely invest \$10,000 to \$15,000 of yearly Gala income into the general endowment fund. If you are considering a gift to the JCRA in the near future, please consider making a contribution to the JCRA Endowment for Excellence. By doing so you can take satisfaction that your contribution will generate

recurring yearly income to sustain the operations of the JCRA.

I hope you have had an opportunity to participate in some of the recent JCRA educational programs. Our recent Friends lectures have been well attended, and remember, if you miss a lecture, view it online through our members' only link. Mr. Mark Weathington, our new assistant director and curator of collections, has resumed our historically popular Plantsman Walks on the first or second Tuesday afternoon of the month. These too are recorded, and made available online for member viewing.

In the garden, plants in the renovated rooftop garden and the newly installed summer geophyte border have grown well this past growing season. Speaking of celebrations, we are celebrating the slow but steady assault and removal of most of the English ivy, *Hedera* sp, from the JCRA. Eradication efforts this past spring have resulted in significant progress, and efforts will continue next spring. Over the years, English ivy has become pervasive in some areas of the JCRA, visually impacting display of our collections, and competing with desirable plants. We have commenced renovation of the old southwest garden, and hope to have renovation and planting completed by next spring. The garden will still house many southwestern U.S. taxa, but we will broaden the scope of the garden to include a diversity of drought tolerant herbaceous and woody taxa, including a collection of cold-hardy palms.

Although the JCRA has a healthy population of wild bumblebees (*Bombus* sp.) working in our collections, I have noted the general absence of honeybee activity (*Apis mellifera*) at the JCRA since my arrival. As many of you are aware, wild honeybee populations are few, and managed hives have been negatively impacted by a number of pests and stresses, including mites, beetles, and pesticides. Thanks to the generosity and interest of Charles Heatherly, President of the North Carolina Beekeepers Association, three healthy hives of honeybees were placed at the JCRA in late October.

Already, one can see significant numbers of honeybees working in the JCRA collections.

In late October the JCRA had the pleasure of partnering with Horticulture magazine in presenting a symposium entitled "Gardening in Small Spaces". About 180 registrants were entertained and educated by 5 incredible speakers who shared their ideas for creating wonderful gardens in limited space. We plan to partner with Horticulture magazine in offering future symposia. Looking ahead later in this year, please "save the date" for the JCRA fall 2008 symposium on September 26-28. The 2008 symposium, entitled "Surround Yourself with Shady Characters" (the title courtesy of the fertile imagination of Tony Avent) will focus on trees for urban landscapes, gardening in a woodland environment, and biogeography of trees. We again have an exciting line-up of speakers. Please plan on joining other shady characters and attend our fall symposium.

Muscadine Grape Program (Kenansville)

Connie Fisk

The muscadine program has had a busy fall! Our muscadine field day at the Castle Hayne Horticultural Crops Research Station on September 12 was well attended and continues to generate interest in fresh muscadine production. Consumer surveys at the Raleigh Farmers Market's Grape Day on September 14 again showed Supreme as the fresh cultivar preferred most by the public. The 3rd Annual NC Muscadine Harvest Festival was bigger than ever and plans are already underway for next year's event. A research plot of the leading muscadine cultivar in North Carolina, Carlos, is being established at the Clinton Horticultural Crops Research Station to further explore the effects of pruning severity on yield and fruit quality, a continuation of Stephanie Romelczyk's graduate research project. And although we were expecting substantial yield reductions due to damage from the 2007 Easter Freeze, we were pleasantly surprised by the fruitfulness of base and latent buds, data contrary to everything currently in the literature. Acreage and interest in muscadine grapes is

continuing to grow as we enter 2008, due to emerging health benefits from consuming muscadines and muscadine products, a stellar marketing campaign for fresh muscadines by the NCDA&CS Marketing Division, and increasing Extension programming for growers statewide.

NC Research Campus (Kannapolis)

Todd Wehner

The department of Horticultural Science is seeking candidates for several positions to work at the **NC Research Campus** being built at Kannapolis. See:

<http://www.northcarolina.edu/content.php/pa/kannapolis.htm>

There will be **new faculty positions** in leafy vegetable breeding, small fruit breeding, postharvest physiology, and molecular genetics. See:

http://www.cals.ncsu.edu/hort_sci/hsassist.html

Vernon James Research and Extension Center (Plymouth)

Mark Clough

After being **Tropical Spiderwort**-free for a year and half, it was found in the field where it was originally discovered several years ago. The cause may have been a deep drain that was cut, turning up some soil that was apparently below the level the fumigant could reach. Thus, we will be under quarantine at the TRS a little longer than hoped.

In October, TRS got a new Superintendent, **Jewel Tetterton**. Jewel has been at the TRS for a number of years as the Crops, Maintenance, and Greenhouse Unit Manager. The faculty at TRS are happy, since he has been a great resource and easy to work with, going the extra distance to see the successful implementation of our projects.

HORTICULTURE FACILITIES

Todd Wehner

Lab 201 in Kilgore Hall is being renovated for use by John Williamson and Sara Spayd. There are new cabinets, benchtops and floors, and the equipment should be operational in January. Craig Yenko is moving his lab to 273 Kilgore, along with Bryon Sosinski.

Departmental Newsletter Committee

- Editor: **Todd Wehner**

- Assistant: **Rachel McLaughlin**

Send items for the newsletter to Todd Wehner (todd_wehner@ncsu.edu)