

Department of Horticultural Science Newsletter

Winter 2008

North Carolina State University, Raleigh, NC 27695-7609

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

NEWS FROM THE DEPARTMENT HEAD

Julia Kornegay

We have successfully filled three of our four new faculty positions for the **Plants for Human Health Institute** at Kannapolis, NC. Joining us is Dr. Penelope (Penny) Perkins-Veazie (Postharvest Physiologist), Dr. Allan Brown (Molecular Geneticist), and Dr. Jeremy Pattison (Strawberry Breeder). More information is available in the Fall 2008 newsletter. Unfortunately, our candidate for Leafy Vegetable Breeder was unable to join us, so we will be recruiting that position again this year. We are also recruiting two Assistant Professors: one to teach in the Landscape Design Program and the other to teach in the Ornamentals Program. The latter also has a research appointment.

In December, Dr. Dennis Werner stepped down as the Director of the **JC Raulston Arboretum** and returned to Kilgore Hall to resume his successful plant breeding and teaching program. Dr. Werner recently released two new buddleia varieties (Blue Chip and Miss Ruby) that have been widely acclaimed. He also has new redbud cultivars that will be released later this year as well as other exciting materials in development. Dr. Ted Bilderback, Nursery Production Specialist in the Department, is the new Interim Director of the JCRA. Ted brings over 30 years of research and extension experience working with the NC nursery industry and ornamental plants. He was a longtime friend and colleague of JC Raulston with whom he co-taught two courses. Ted feels a deep affinity for the Arboretum and looks forward to offering his knowledge and experience to advance its mission.

Over the last five years, the Department has gone through major changes in faculty with numerous retirements, departures, and new hires. We begin 2009 faced with a bleak economy, reduced budgets, and cutbacks in programs and people. Certain horticultural industries, especially the nursery / landscaping / ornamental industries, are suffering serious financial losses due to the slump in the housing and construction sectors and the sharp decline in spending by the public. One area of growth, however, has been a renewed interest in vegetable gardening. I, too, have felt the urge to grow my own vegetables and this past year I dug up part of my front yard (the sunniest area) to plant a vegetable garden. I was a bit concerned about having a vegetable garden in the front yard, but fortunately, my neighborhood association has no regulations against it, and my immediate neighbors haven't complained. This December, as a Christmas present, my husband installed raised beds in my vegetable garden to give it a bit more formal look appropriate for a front yard and, hopefully, will allow me to produce a bumper crop. I'm looking forward to planting! I am also looking forward to our new President, Barack Obama, to lead us forward to renewed prosperity and quality of life based on energy efficiency, sustainable development, and environmental stewardship.

DEPARTMENTAL HIGHLIGHT

Todd Wehner

The **muscadine grape** website was built by Connie Fisk to help growers and industry with production of the crop in North Carolina. See: <http://www.ces.ncsu.edu/muscadines/>



FACULTY NEWS

Todd Wehner

Katie Jennings is expecting her first baby (a boy) in February.

The Royal Horticulture Society at Wisley, England has conducted an all European Buddleia trial that includes all cultivars available in the trade, 107 in all. The top vote getters, by a decisive margin, were Buddleia x 'Miss Ruby' and Lo & Behold(tm) 'Blue Chip', respectively. The trial coordinator commented that the votes for Lo & Behold(tm) 'Blue Chip' would most likely have been even higher had the voting continued longer. That is because Lo & Behold(tm) 'Blue Chip' continued to flower well beyond all other cultivars. This is great news and is a good indication that each plant is in the running for the prestigious RHS award of Garden Merit. **Denny Werner** should be pleased that his plants took the top two spots. I expect that his breeding will garner ever more accolades in the future, as his Buddleia breeding is the best in the world.



Awards

Dick Bir, retired Extension Nursery Specialist with the Department of Horticultural Science at NCSU, has recently received the International Award of Honor from the International Plant Propagators' Society. The person on the left is James Johnson, Rutgers Cooperative Extension, who made the plaque presentation in his role as International IPPS Delegate from the Eastern Region of IPPS.



Joe Neal received the Outstanding Researcher Award from the Northeastern Weed Science Society (NEWSS) at the annual meeting in Baltimore, Maryland on January 6, 2009. Joe received the award for development of chemical and nonchemical weed management programs, addressing troublesome weeds in container and

field nursery production. He is a past president of the NEWSS.

STAFF NEWS

Dolores Lawson

Tom Hoyt is working with Mike Parker, and is located at the Mountain Horticultural Crops Research and Extension Center (MHCREC). He started with us September 9th, working with the apple orchard program as a research technician.

Amy Hamilton is working with Jeanine Davis and is also located at MHCREC. Amy started with us October 6th as a research specialist.

GRADUATE PROGRAM

John Dole and Rachel McLaughlin

We are pleased to announce the following **fall 2008 graduates**: MS awarded to **Mr. Dennis J. Carey**, "The Effects of Benzyladenine on Ornamental Crops. Dr. Brian Whipker and Dr. Wayne Buhler, Co-chairs. PhD awarded to **Ms. Fang-yi Cheng**, "Pathogen-induced Protein Secretion in Plants," Dr. John Williamson, Chair. MS awarded to **Mr. Adam D. Criswell**, "Screening Cucumber (*Cucumis sativus*) for Resistance to Downy Mildew (*Pseudoperonospora cubensis*)," Dr. Todd Wehner, Chair. Horticultural Science Graduate Certificate awarded to **Mr. Desmond A. Cutler**, Dr. Mary Peet, Advisor. MS awarded to **Ms. Suzanne O'Connell**, "Grafted Tomato Performance in Organic Production Systems: Nutrient Uptake, Plant Growth and Yield," Dr. Mary Peet, Chair. MS awarded to **Ms. Jiyoung Oh**, "Growth Regulator Effects on Watermelon Chilling Resistance, Flowering, and Fruiting," Dr. Todd Wehner, Chair. MS awarded to **Ms. Angela R. Post**, "A Systematic Study of *Cardamine* Weed Species in United States Container Nurseries," Dr. Joe Neal, Chair. MS awarded to **Ms. Alison E. Prehn**, "Gravimetric Approach to Real-time Monitoring of Substrate Water Content in Container-grown Nursery

Crops," Dr. Stu Warren and Dr. Ted Bilderback, Co-chairs. MS awarded to **Ms. Erin M. Regan**, "Developing Water Quality and Storage Standards for Cut Rosa Stems and Postharvest Handling Protocols for Specialty Cut Flowers," Dr. John Dole, Chair. PhD awarded to **Ms. Antonia Y. Tetteh**, "Breeding for Resistance to Powdery Mildew Race 2W in Watermelon [*Citrullus lanatus* (Thunb.) Matsum. and Nakai]," Dr. Todd Wehner, Chair. MS awarded to **Ms. Emily R. Vollmer**, "Cover Crop Mulches for No-till Organically Managed Onion Production," Dr. Nancy Creamer, Chair. MS awarded to **Mr. John M. Wooldridge**, "Propagation by Stem Cuttings and Nitrogen Nutrition of Eastern Redbud (*Cercis Canadensis*)," Dr. Frank Blazich and Dr. Stu Warren, Co-chairs.

Please welcome our new, **incoming graduate students for Spring semester**: **Connie Fisk** is a native to Oregon. She received her BS in Nutrition and Food Management from Oregon State University in 1999 and a MS in Food Science and Horticulture from Oregon State University in 2006. Connie has worked on hardy kiwifruit. She was hired by our Department in 2006 as Extension Associate for muscadine grapes. Connie will be working with Mike Parker on her PhD. **John Biai** is a native to Selangor, Malaysia. He received his BS in Agronomy and Crop Science from the University of Agriculture, Malaysia in 1994. His first job was as a secondary school teacher then he was hired as an Agriculture Officer by the Ministry of Agriculture. He became unit head for Planting Material Production Unit in 2005. Chris will be working with Chris Gunter on his MS. **Ryan Lambert** is a native to Siler City, North Carolina. He received his BS in Horticultural Science from NCSU in December 2008. He has worked for Dennis Werner on redbud and buddleia breeding and did an independent study with Diane Mays in our conservatory. He also interned with Ball Horticulture the Summer of 2008. Ryan will be working with Frank Blazich on his MS as part of the Elizabethan Gardens program. **Michelle McElhannon** is a native to Spokane, Washington. She worked for Carole's Nursery

and interned at Oglevee's. Michelle received her BS in Ornamental Horticulture from University of Georgia in 2004. She was an Environmental Health Specialist for Clarke County, Georgia. In 2008 she received her MS in Ornamental Horticulture from Auburn University working on seed germination of hellebores. Michelle will be working with Brian Whipker and John Dole on her PhD. **Suzanne O'Connell** is a native to Salem, Massachusetts. She received her BS in Environmental Studies from Barnard College in 2000. She has worked as a biologist, community supported agriculture apprentice, conservation agent and research assistant. She received her MS in Horticultural Science from NCSU with Mary Peet in December 2008 working on grafted tomatoes. Suzi will be working with Nancy Creamer on her PhD. **Todd Rounsaville** is a native to Nashua, New Hampshire. He received his BS in Ornamental Horticulture and Turfgrass Management from University of Rhode Island in 2005. He has interned at several gardens including Arnold Arboretum, Harvard, US National Arboretum, Scott Arboretum, and Swarthmore College. Recently he has worked for Plant Delights Nursery. Todd will be working with Tom Ranney on his MS. **Ben Winslow** is a native to Towson, Maryland (near Baltimore). He has interned with Brickman Group and McHale Landscape Design. He received his BS in Horticultural Science from NCSU in 2006. He is a research technician for Craig Yencho (which is where Ben developed an interest in plant breeding). Ben will be working with Craig Yencho on his MS.

Awards

Congratulations to **Jessica Barb**, who received the Krezdorn Award for Excellence in Doctoral Research and Writing. Jessica received a recognition plaque and \$100 cash at the annual meeting of the Southern Region meeting of ASHS. The publication for the award was: Barb, J.G., D.J. Werner and R.J. Griesbach. 2008. Genetics and biochemistry of flower color in stokes aster. J.A.S.H.S. 133:1-10. Jessica received her PhD in Spring 2008 under the direction of Dr. Dennis Werner.

UNDERGRADUATE PROGRAM

Bryce Lane and Betty Coleman

Spring semester is off to a great start. Our 4 year undergraduate enrollment is at 161 students. We graduated 20 students in December and will be looking for a new crop of freshmen and transfer students for the coming Fall semester.

Dr. Paul Fantz retired last August and we are in the midst of recruiting for a replacement for his position. We hope to have someone on board by July 1.

NEWS FROM AROUND NORTH CAROLINA

JC Raulston Arboretum

Dennis Werner

Dennis Werner has stepped down from the position as Director of the JC Raulston Arboretum (JCRA) at the end of December in order to return to his interests in ornamental plant breeding and undergraduate teaching. **Ted Bilderback**, will be the Interim Director of the JCRA starting January 2009.

Cunningham Research Station (Kinston)

Bill Jester

The **NC Specialty Crops Program** has wrapped up a successful year of projects and educational activities. Tammy Baysden, SCP assistant has done a great job of writing and preparing the NC Specialty Crops Newsletter that goes to over 500 people monthly. We are in the process of preparing the annual report that goes to the General Assembly and would appreciate any information the faculty has on their Specialty Crops activities for 2008. This can be send to me at bill_jester@ncsu.edu.

We are preparing for another year of **lettuce** research. Our project was funded by Goldenleaf again. Most of the work will be in the mountains. The work we have done has resulted

in the growth of processing and fresh lettuce industry in the eastern part of the state.

Bill Jester's mother died in early November; he would like to thank the faculty for the cards, flowers and kindness during his time of grief.

Horticultural Crops Research Station (Clinton)

Allan Thornton

Extension folks and growers are in the middle of meeting season. It is a good time to get updates on the crops you grow.

Muscadine Grape Program (Kenansville)

Connie Fisk

North Carolina **muscadine acreage** is growing. And so is the interest in fresh market and organic production. Next year will bring an additional 60 A or more of organic, fresh market muscadines in the southeast part of the state. To address the needs of these new growers, several meetings have been held at the Duplin County Cooperative Extension Office. Read more about the November 19th meeting at <http://duplin.ces.ncsu.edu/index.php?page=news&ci=CROP+4>

Have questions about **pruning muscadine grapevines**? Contact the North Carolina Cooperative Extension Service in your county to inquire about pruning workshops in your area. Demos in 2009 are tentatively scheduled for Jones County on January 20th, Hoke County on January 31st, and Johnston County on February 21st, with more dates and locations to come. Visit

<http://www.ces.ncsu.edu/muscadines/muscadine/Musc-mg/musc-mgVol4No5.html> for our recent email newsletter containing more information on dormant pruning and other winter muscadine chores.

Mountain Horticultural Crops Research And Extension Center (Mills River)

Tom Ranney

Extension In-service Training on Organic Horticulture. In October, 44 county extension

agents and two extension specialists (one from Tennessee) participated in one of two three-day training sessions on Organic Horticulture. The sessions were held in Valle Crucis and Pittsboro. The training was led by Jeanine Davis and is part of a multi-state Southern SARE funded project to train extension personnel in the South on organic horticulture and develop a web based curriculum and resources for their use.

New Natural Products Initiatives in the Mountains. Natural products are at the center of several economic development efforts in the southern and northern mountains. Jeanine Davis gave presentations on the status of the industry and opportunities for growers and small businesses at the Watauga Naturally Conference and the State Extension Advisory Committee meeting, both held in Boone, and at an Entrepreneurship Conference in Spruce Pine.

Organic and Heirloom Tomato Project. Since 2005, Randy Gardner and Jeanine Davis have conducted a trial at the Upper Mountain Research Station studying production of heirloom and heirloom-type hybrid tomatoes in organic and conventional production systems. This year the new tomato breeder, Dilip Panthee, and extension agent, Richard Boylan, joined the team and an additional field trial was added at the Upper Mountain Research Station. Workshops, field days, and taste tests were well attended. These studies demonstrated that organic tomatoes can be grown successfully in WNC and that the heirloom-type hybrid tomatoes have superior fruit characteristics and fare better in consumer taste tests than popular comparable heirloom tomatoes. Local farmers reported that demand exceeded supply for organic heirloom tomatoes that were sold at retail prices of \$4.50 to \$5.50 per pound.

Gym facilities. Anthony LeBude has worked with the Benefits Office at N.C. State University and the athletic administration at UNCA to allow faculty and staff of the MHCREC to use the gym facilities on the UNCA campus at no cost. This is a one year trial period and the administration will revisit their decision next

year. Spouses and children of faculty and staff, however, are not eligible. So far, Jeff Jones and Nathan P. Lynch have played racquetball.

'Spirit' Hydrangea. The first pink-flowering, smooth hydrangea (*Hydrangea arborescens*) developed. From Tom Ranney's program, this new cultivar is similar to the immensely popular 'Annabelle' hydrangea, except now in pink. A portion of royalties will be donated to the Breast Cancer Research Foundation.

NC Research Campus (Kannapolis)

Mary Ann Lila

Three new faculty have joined the department, at the Kannapolis location. They are **Allan Brown** (molecular genetics), **Penny Perkins-Veazie** (postharvest physiology), and **Jeremy Pattison** (fruit breeding).

Vernon James Research and Extension Center (Plymouth)

Mark Clough

In September, **Mark Clough** went to Presque Isle, ME for the annual USDA-ARS breeders harvest where he selected new and advanced clones developed by the USDA-ARS for trials in NC. In December, Mark attended the NE1031 regional potato meeting in Raleigh, and participated in the annual Pasquotank County Extension Winter Potato Meeting. Also in December the potato breeding and genetics project harvested a record (for the project) 20,000+ mini-tubers for planting as single hills in the field in March. Each hill is genetically distinct and has the potential to be a new variety after 4 years of selection and 4 years of trials.

HORTICULTURE FACILITIES

Todd Wehner

Roger Batts moved into his new office at Brickhaven Drive. In addition to a nice office, he also has storage facilities there. It is located next to the Horticultural Field Laboratory. Horticultural Science faculty now occupy space in five buildings on campus: Kilgore, Marye Ann Fox, Partners II, 520 Brickhaven, and McSwain Education Center.

Departmental Newsletter Committee

- Editor: **Todd Wehner**

- Assistant: **Rachel McLaughlin**

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