

Clemson IMPACTS

Clemson University Public Service Activities

Summer 2007



Beetle trap helps protect honeybees



Russian medical delegation meets S.C. counterparts



Watershed demonstration project established



Food bank marketing plan helps Lowcountry citizens



Students discover the science of learning



Fall plant sale in Botanical Garden



Letter from the Vice President

Innovation is one of the driving forces in improving the quality of life for South Carolinians. For that reason, it is also one of the driving forces behind Clemson Public Service Activities. In this issue, you'll see evidence of that innovation in action.

Clemson entomologist Mike Hood has developed a trap that protects honeybees from predatory hive beetles that can wipe out entire colonies. Without honeybees as pollinators, many of your favorite fruits and vegetables would not be available.

A new internship program provides service learning for Clemson students and much-needed help for government officials dealing with population growth and development along the state's Grand Strand.

Alternative energy research, led by Clemson's Restoration Institute, is investigating the power of coastal winds to generate electricity. This is just one of several possible sources of renewable energy that can reduce our dependence on imported fuels.

Research by food scientist Paul Dawson measures the validity of the "five-second rule" when food is dropped on the floor. A better use of those five seconds may be to consider the risk of illness from salmonella or E. coli.

Middle school students are discovering the science of learning through CSI: Clemson Student Investigators, forensic investigations led by the Youth Learning Institute. And 4-H youth are learning high-tech skills that can help emergency officials develop maps to pet shelters during hurricane evacuations.

Sincerely,

John W. Kelly
Vice President for Public Service and Agriculture

Knowledge for living. Knowledge for life.



Clemson *Impacts*, a quarterly publication of Clemson Public Service Activities, is available to South Carolina residents upon request. *Clemson Impacts* is also available on the web www.clemson.edu/public/

Vice President
John W. Kelly

Editor
Debbie Dalhouse

Designer
Rachel Mumford

Comments, questions and subscription requests:
Editor *Clemson Impacts*, 130 Lehotsky Hall,
Clemson, SC 29634-0101, ddalhou@clemson.edu,
(864) 656-6737.

©2007 Clemson University.

Information and articles in *Clemson Impacts* may be reprinted provided no endorsement of a commercial product is stated or implied. Please credit *Clemson Impacts*, Clemson University. Use of product names does not imply endorsement nor does omission of product names imply criticism.

Writers
Stephanie Beard
Pam Bryant
Kerry Coffey
Peter Kent
Tom Lollis
Tracy Outlaw
Diane Palmer

Clemson Public Service Activities
www.clemson.edu/public/

Cooperative Extension
www.clemson.edu/extension/

Experiment Station
www.clemson.edu/agforestry-research/

Livestock-Poultry Health Programs
www.clemson.edu/LPH/

Regulatory Services
<http://drpsp.clemson.edu/>

Baruch Institute Of Coastal Ecology And Forest Science
www.clemson.edu/baruch/

Clemson Institute For Economic And Community Development
www.clemson.edu/sandhill/

Genomics Institute
www.genome.clemson.edu/

Institute on Family and Neighborhood Life
www.clemson.edu/ifnl/

Institute for Nutraceutical Research
<http://www.clemson.edu/inr/>

Strom Thurmond Institute of Government and Public Affairs
www.strom.clemson.edu/

Youth Learning Institute
www.clemson.edu/yli/



Printed on recycled paper with soybean oil-based ink.

Beetle trap helps protect *honeybees*

By Diane Palmer

A one-way death trap invented at Clemson is helping protect honeybees from small hive beetles that threaten bee colonies. The invasive pest from Africa damages honeycombs, stored honey and pollen, causing bee colonies to collapse.

Honeybees pollinate most of the state's fruit and vegetable crops. Without them, there would be no apples, watermelon, cantaloupe, squash, or cucumber. There are two pesticides that are available to control small hive beetles, but alternative methods to control this pest are needed.

Clemson entomologist Mike Hood developed the Hood Beetle Trap that allows beetles to enter but not escape. The plastic box has three separate compartments and uses cider vinegar to attract the beetles and food grade mineral oil to foil their escape.

Research grants from the USDA Agricultural Research Service and the Almond Board of California helped fund this research. Clemson graduate student Brett Nolan is assisting with field tests. The trap is distributed by Brushy Mountain Bee Farm, Inc., in North Carolina: www.brushymountainbeefarm.com.

For more information: Mike Hood, 864-656-0348, mhood@clemson.edu.



Photo by Diane Palmer

Small grains provide valuable double crop

By Peter Kent

Small grains provide a valuable second crop for South Carolina's cotton, corn and soybean growers. Cool-weather crops such as soft winter wheat, oats, barley and triticale are grown on some 200,000 acres.

Growers seeking new varieties and improved production methods look to agronomist Ben Edge. He evaluates grain performance and adaptation to South Carolina at Clemson research farms on campus and at the Pee Dee Center in Florence and the Edisto Center in Blackville.

Pest management research focuses on resistance to Hessian flies and diseases such as powdery mildew, leaf rust and stripe rust. Results are published in guides that contain current and multiple year data for several standard varieties as well as new varieties of grain. The reports include yield, test weight, plant height and heading date and are available at www.clemson.edu/agronomy/VT/SmallGrain/smgrain.htm.

For more information: Ben Edge, 864-656-3520, bedge@clemson.edu.



Photo by Tom Lallis

Hog feed investigation protects meat supply

By Peter Kent

Hog producers faced a potential threat this spring when feed imported from China was found to be contaminated with melamine. One South Carolina farm purchased feed that contained the suspect wheat gluten and rice protein concentrate.



As a result, Clemson Livestock and Poultry Health officials quarantined approximately 500 hogs at the farm. The Clemson veterinarians worked with the federal Food and Drug Administration (FDA) and the Food Safety and Inspection Service, as well as the state Department of Agriculture, to conduct a thorough investigation.

The potentially affected feed was identified, and feed and urine samples were collected for testing by the FDA. Feed samples were found to be negative for melamine contamination; extremely low levels of melamine were detected in the urine. The hogs were found to be healthy and the quarantine was lifted.

"Surveillance and inspection are ongoing activities to ensure that South Carolina's meat supply remains safe and plentiful," said Tony Caver, director of Livestock and Poultry Health programs.

For more information: Tony Caver, 803-788-2260, jcaver@clemson.edu.

Hollow-heart melon test goes high-tech

By Tom Lollis

Wireless technology is helping track water and nutrients to pinpoint the causes of hollow-heart in watermelons.

Gilbert Miller, area vegetable specialist at the Edisto Research and Education Center in Blackville, is using equipment provided by EarthTec Solutions to construct a three-dimensional soil profile. This information allows moisture and nutrients to be targeted to the root zone.

By starving, then overfeeding test plots for water or nutrients, he can determine what causes hollow-heart, which makes melons unmarketable. Four solar-powered monitoring stands collect data from vertical and horizontal sensors buried at depths of 4, 8, 12, 16 and 20 inches. Another solar array powers a weather station.

Every two hours each stand communicates via cell phone to a server in New Jersey, where EarthTec puts the data in chart form that Miller can access on the Internet. In the future a fiber optic line in the field will post data locally.

For information: Gilbert Miller, 803-284-3343, ext. 225, gmlr@clmson.edu.



Photo by Tom Lollis



Photo courtesy APSnet

Powdery mildew threatens crops

By Diane Palmer

Powdery mildew is showing up on watermelon and cantaloupe plants in south Georgia and is expected to move into South Carolina this year, according to Anthony Keinath, plant pathologist.

“Dry weather favors powdery mildew over other leaf diseases, because the spores contain water that allows them to germinate on dry leaves,” said Keinath.

If powdery mildew is found, he recommends applications of the fungicides Nova or Procure and Quintec for watermelon, cantaloupe, and summer squash. Nova or Procure, which have the same active ingredient, should be rotated with Quintec.

To minimize the risk of yield loss, growers should make one preventive fungicide application and then scout fields regularly. Home gardeners can spray chlorothalonil (Daconil), sulfur, copper fungicide, or SunSpray horticultural oil to control powdery mildew.

For more information: Anthony Keinath, 843-402-590, akeinath@clmson.edu.

Online soil science training builds career skills

By Peter Kent

Clemson agriculture students are learning about soils without getting their hands dirty. Horticulture, forestry, agricultural mechanization and agricultural education majors are getting hands-on experience using the USDA Natural Resources Conservation Service Web soil survey.

The soil survey was used in introductory soil science coursework taught by assistant professors Elena Mikhailova and Christopher Post. Students used the online tool to evaluate soil physical properties, septic-system and basement suitability and to evaluate soil chemical properties.

The tool has even led some students to see how the Web soil survey will assist them in their careers. “I plan to open a lawn-maintenance and landscaping business,” said John Hollis. “I’ll use the Web soil survey to check soil properties and make necessary adjustments to my landscape plans. This will give me an advantage over my competitors in understanding the way water moves into and through soil.”

The Web Soil Survey replaces printed materials and expands public access to the national soils information system.

For more information: <http://websoilsurvey.nrcs.usda.gov/app/> or Elena Mikhailova, 864-656-3535, eleam@clmson.edu.

Summer intern helps Horry County with growth management

By Kathy Woodard

Municipal officials addressing growth issues along the Grand Strand will get help from a new Clemson student internship program established through the Myrtle Beach Public Service Initiative Endowment.

Funded by proceeds from University land sales in the area, the initiative provides a summer intern to assist local officials in managing growth issues such as land use, environmental conservation, zoning, transportation and tourism.

The first intern began this summer, working with the City of Myrtle Beach. Garrett Stroud, a civil engineering student, conducted a beach visitor survey and collected vacant building data for the Kings Highway corridor.

The program provides real-world educational experience for students who work for both the Clemson Cooperative Extension Service and local government officials who deal with the impact of growth in the Grand Strand area.

For more information: Kathy Woodard, 864-656-0205, ckathy@clemson.edu.



Russian medical delegation meets S.C. counterparts

By Stan Perry

Russian physicians worked with Clemson's Institute for Economic and Community Development (CIECD) as their country prepares to privatize the medical system.

The Institute hosted the fact-finding delegation of 11 Russian medical professionals, in partnership with the Kiwanis Club of Columbia-Northeast. During their two-week visit, the delegation met with hospitals, medical universities, private medical practices, and legal and human resources specialists in Columbia, Charleston and Clemson.

"It would have taken seven years of travel and seminars to acquire the information we did in our two-week visit," said Dr. Viktor Dodukh, a psychiatrist from Novorossiysk, Russia.

Selected members of the delegation will continue to work with CIECD as they incorporate their new knowledge and seek to refine their business practices.

For more information: Stan Perry, 803-528-9892, perry8@clemson.edu.

Teacher of the Year joins Leadership South Carolina

By Peter Kent

As part of an ongoing commitment to improve education, Leadership South Carolina has granted a scholarship to the state's Teacher of the Year, beginning with the Class of 2008.

Each year, the program prepares 50 individuals for a higher level of service to the state. Participants are selected based on their demonstrated commitment to improving the quality of life in South Carolina. During the nine-month program, they meet experts around the state in seven three-day sessions to explore natural resources, quality of life, economic development, education, social issues and diversity.

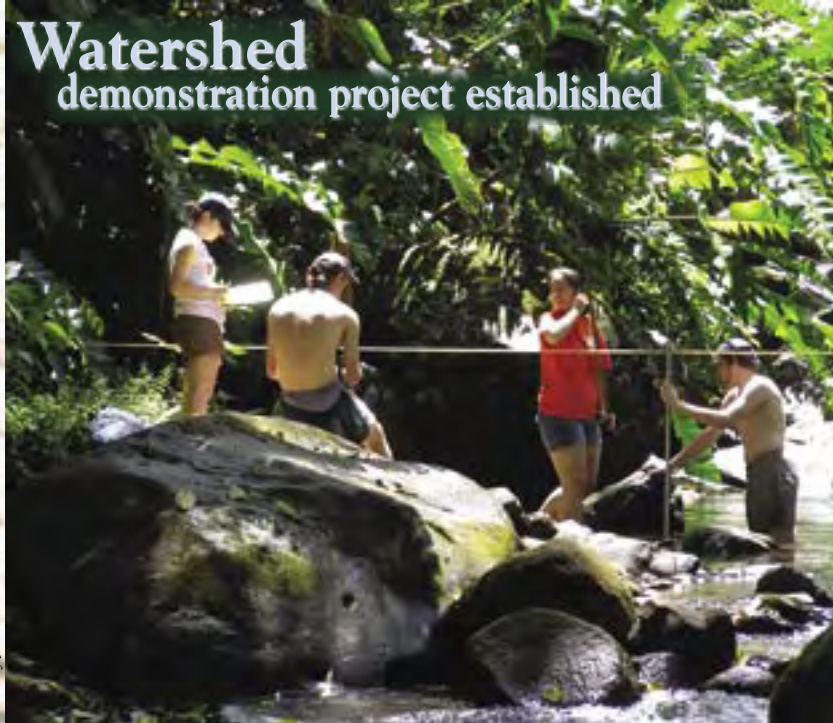
At each session, they network with professionals, business executives, community and government leaders and social change agents who encourage them to pursue positive change in South Carolina. The scholarship for Teachers of the Year was proposed by S.C. Superintendent of Education Jim Rex, a Leadership alumnus.

"We are delighted the teacher will be part of our class," said Helen Munnerlyn, Leadership South Carolina director. "Dr. Rex saw the value, and we responded."

For more information: Helen Munnerlyn, 803-788-5700 ext. 44; hmunner@clemson.edu.



Watershed demonstration project established



By John Hains

A watershed demonstration project was established this spring at the Archbold Tropical Research and Education Consortium (ATREC) in Dominica, West Indies. The project will describe water resources and stream hydrology in the watershed. It also will initiate a long-term monitoring effort for stream flow, temperature, ecology and water quality.

The work was conducted under a research permit from the island's Ministry of Agriculture and Forestry and funded in part by a grant from Clemson's Service Alliance. The creative inquiry team, led by biological sciences associate professor John Hains, included undergraduate students Justin Brown, Rachel Herold, Jessi Howard, and John Shuler.

In addition to the work at ATREC, the team traveled to other parts of the island to learn more about the natural features and to plan for future expansion of the project. Sites visited were Boiling Lake, Freshwater Lake, Emerald Pool, Champagne reef, Middleham Falls and Trafalgar Falls.

For more information: John Hains, 864-506-1111, jhains@clemson.edu.

Monitoring stations measure wind energy potential

By Susan Polowczuk

Wind may offer an alternative to foreign oil as a power source for South Carolina. Wind power is a clean, indigenous energy resource that potentially could provide a portion of the power needed for the rapidly growing demand along the coast.

To test the possibility, monitoring stations are being established at two coastal locations. The stations – on Waties Island near Cherry Grove and at Clemson's Restoration Institute at the former Navy base in North Charleston – will measure whether coastal winds are sufficient to generate electricity.

Data will be collected for one year to assess the wind potential. If results are favorable, a commercial scale wind turbine is planned for North Charleston.

Research is being led by the S.C. Institute for Energy Studies (SCIES) at Clemson, along with Santee Cooper, Coastal Carolina University and the Savannah River National Laboratory. Funding for student participation is provided by the S.C. Research Authority.

"We hope this initiative sets the stage for South Carolina to serve as the hub for offshore wind development along the Atlantic Coast," said Nick Rigas, director of SCIES and the renewable energy program at the Restoration Institute.

For more information: www.clemson.edu/scies/ or Nick Rigas, 864-656-2267, nrigas@clemson.edu.



Photo by Baruch Institute

Environmental sensors track impact of development

By Dan Hitchcock

Often it's not until houses and businesses are built that we realize the environmental impact. But soon environmental researchers

and developers will have data that can be used to evaluate and encourage environmentally sustainable building practices.

Remote data sensors and transmitters are being installed in coastal watersheds as part of Clemson's Program of Integrated Study for Coastal Environmental Sustainability (PISCES). The monitoring system will provide real-time data from water measurement equipment housed on the Bannockburn Plantation in Georgetown County.

The property is slated for future development. Owner Lucille Pate is partnering with Clemson researchers to understand and minimize the impacts of development on the environment. Data collection will begin before construction to track the impact before, during and after development.

The monitoring system was designed by scientists from the Baruch Institute of Coastal Ecology and Forest Science, the Department of Forestry and Natural Resources, and the Agricultural and Biological Engineering Department. In addition to scientific research, the program will provide an educational resource for natural resources and the environment, land use change and sustainable development.

For more information: William Conner, 843-546-6323, wconner@clemson.edu.

Dune restoration rebuilds sea turtle nesting sites

By Stephanie Beard

New work to remove beach vitex, the “kudzu of the beach,” will help restore nesting sites for sea turtles. The U.S. Fish and Wildlife Service awarded a \$135,000 grant to Clemson for dune restoration to protect the endangered species.

Chuck Gresham, forest scientist at the Baruch Institute of Coastal Ecology and Forest Science in Georgetown, will lead the effort. Sea turtles, federally listed as threatened or endangered in South Carolina, abort their attempt to dig a nest if they encounter vitex at the base of sand dunes.

Restoration will occur in stages. First, the highest priority areas are identified and permission obtained from the property owner. Next, herbicide is applied to a machete cut in the vitex and allowed to work for four months. Finally, native sea oats and bitter panicum are planted to build stable dunes for turtle nests.

Vitex eradication has already occurred on 75 beachfront lots in Georgetown and Charleston counties. This grant expands the project to 71 additional parcels along the state’s entire coast.

For more information: Chuck Gresham, 843-546-6314, cgrshm@clemson.edu.

Land managers learn about forest invasion

By Tom Lollis

Some things in South Carolina forests should not be there, and more invaders are on the way. Timber producers, buyers, foresters and forest landowners learned how to recognize and combat invasive plants, insects and diseases this spring at the Edisto Research and Education Center in Blackville.

“A shocking number of exotic insects and diseases are killing trees in the eastern United States,” said Beth Richardson, Extension forestry agent who led the short course. “Many of them started out in northern states but now are moving to South Carolina.”

The list includes emerald ash borer, sirex wood wasp, redbay wilt disease, beech bark disease, longhorn Asian beetle, sudden oak disease and hemlock wooly adelgid. Course participants, who represented 1.2 million acres of forest lands, learned about these pests and invasive plants such as Chinese tallow tree and privet, which is considered to be more invasive than kudzu.

A booklet with descriptions and color photographs of invasive species is available at: www.clemson.edu/extfor/vegetation_management/invasive%20species%20booklet.pdf

For more information: Beth Richardson, 803-534-6280, ext. 36; mrchrds@clemson.edu.

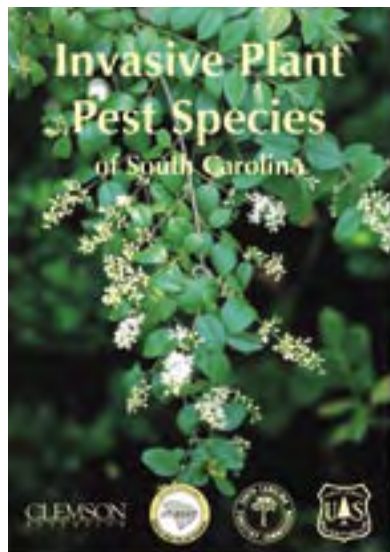


Photo by Baruch Institute

Web sites offer homeowners help with fire ants

By Tom Lollis

Information on red imported fire ants is now available on two Web sites through the work of Tim Davis, Clemson Extension fire ant specialist. One Web site, created by Davis, contains news, background information, recommendations for controls and answers to frequently asked questions at <http://entweb.clemson.edu/fireant/>.



“Fact sheets include how and when to use baits, mound treatments or granular materials for long-term control,” said Davis. “If you don’t have an Internet connection, go to your county’s Clemson Extension office for a free printed version.”

Davis is also one of the experts who contributed to the national Extension Web site on fire ants. This site brings together the latest research-based information from university experts across the nation at www.extension.org/fire+ants/.

For more information: Tim Davis, 803-730-7956, tdvs@clemson.edu.

Five-second rule is baloney

By Peter Kent

Sad to say, the five-second rule is baloney. Recent research shows that – no matter how fast you or your children pick up food that has dropped on the floor – it still collects bacteria that can cause illness.

Food scientist Paul Dawson and students in the creative inquiry program tested the five-second rule by applying salmonella bacteria to tile, wood flooring and nylon carpet, and measuring the results.

Slices of bologna and bread left for five seconds absorbed 150 to 8,000 bacteria from surfaces that had been contaminated eight hours earlier. Left for a full minute, the slices collected about 10 times more bacteria from the tile and carpet; a lower number from the wood.

As few as 10 salmonella bacteria can cause illness, and fewer than 100 of some strains of *E. coli* can be deadly, for youngsters, the elderly and the ill. The better rule may be: When in doubt, throw it out.

For more information: Paul Dawson, 864-656-1138, pdawson@clermson.edu.



Photo by Peter Kent

Scientists tackle tough bacteria

By Tom Lollis

Clemson scientists are looking for ways to protect fresh produce from contamination by *Escherichia coli* O157:H7.

Each year, *E. coli* infects approximately 73,000 people in the U.S., causing about 60 deaths. Food scientist Xiuping Jiang is leading research to determine how the microorganism survives and grows in composted materials used to produce leafy greens.

“Our hypothesis is that current composting practices may be insufficient to kill O157:H7, and that re-growth of pathogens may occur in some situations,” Jiang said. During the next year she will conduct experiments in the laboratory, in the greenhouse and in field settings to identify processes that are more efficient in eliminating O157:H7 from composted materials.

Collaborating on the project are Geoff Zehnder, organic crops specialist, and Feng Luo, computer scientist. The research is funded by a grant from Fresh Express®, a fresh produce company. Discoveries will be made public to benefit the fresh produce industry and consumers.

For more information: Xiuping Jiang, 864-656-6932, xiuping@clermson.edu.

Food bank marketing plan helps Lowcountry citizens

By Kathy Woodard

To improve the quality of food distributed to low-income families, the Lowcountry Food Bank began a partnership with Clemson’s Institute on Family and Neighborhood Life in 2005.

The “Growing Foods Locally” program, piloted in Beaufort County, includes fresh vegetables grown by local farmers on St. Helena’s Island. The program promotes both nutrition and economic development by encouraging local food markets, increasing small-scale farm income, and providing healthy food alternatives to Food Bank clients.

This spring, service-learning students from Clemson and Cornell University met with farmers, food bank officials, and retail food executives to develop a marketing plan for the program.

“I think it’s valuable for students to get hands-on experience by assisting a group who needs their expertise,” said project leader Ken Robinson, a Clemson economist. “Students appreciate the opportunity to work on a real-world problem.” The students will present their marketing plan to Food Bank officials in fall 2007.

For more information: Ken Robinson, 864-656-1723, krbnsn@clermson.edu.

Photo by Ken Robinson



4-H'ers prepare to help with hurricane evacuation

By Tom Lollis

During future hurricanes, coastal South Carolinians may rely on maps developed with the help of 4-H'ers to find safe shelter for their pets.

This spring, 4-H youth, volunteers and Extension agents participated in a pilot program to identify evacuation routes using global positioning equipment and mapping software.

Training materials for the program, called "Alert, Evacuate and Shelter – Mapping Our Way to Safety," were developed by faculty members from Clemson and universities in Georgia, Missouri and Nevada. Sponsored by the USDA and funded by a National Geographic Society grant, the program will be offered to all 12 east coast states within a year.

"These emergency preparedness programs developed by the National Geographic Society prepare 4-H youths across the nation to help with disaster relief," said Howard van Dijk, Clemson Extension emergency preparedness coordinator.

One way that the 4-H'ers may use their new skills could be helping emergency officials meet a new federal requirement to develop an emergency sheltering plan for pets during evacuations.

For more information: Howard van Dijk, 803-865-1216, ext. 128; hjdijk@clemson.edu.



Photo by Howard van Dijk

4-H Congress on At Home, Southern Style TV

4-H members served as co-hosts of *At Home, Southern Style* in July during the statewide 4-H Congress. Here they join hosts Bob Schuster and Ann Lee McPhail on the set. *At Home, Southern Style* airs on SCETV at 6:30 a.m. Monday through Friday. It delivers information from Clemson specialists on food safety, nutrition, horticulture, natural resources, youth and other topics.



Photo by Liz Smitherman

Organic gardening project improves children's health

By Diane Palmer

To help children learn about sustainable agriculture, healthy eating habits and the environment, 4-H joined with the Greenville Organic Foods Organization to build four gardens at local elementary schools.

The 4-H Grow Healthy Kids project, led by Clemson Extension agent Liz Smitherman, began during a Hands-on-Greenville Day this spring. Children will plant, maintain, and harvest produce in their school's organic garden, and learn to prepare the foods they have grown. The program also includes environmental science activities that teach community leadership, life skills, and healthy nutrition.

"Local businesses have contributed to the project and several Greenville Master Gardeners are volunteering as advisers to the 4-H Grow Healthy Kids clubs," said Smitherman.

The program focuses on organic gardening to produce vegetables without synthetic pesticides, herbicides or genetically modified seeds.

For more information: Liz Smitherman, 864- 232-4431, ext. 125; esmithe@clemson.edu.



Photo by Patrick Wright

Putting media, literacy and civic engagement to work



Photo by Youth Learning Institute

By Pam Bryant

In June, teams of high school teachers and students learned how to use video documentaries to generate awareness and public discussion on important social issues in their communities.

In the week-long Media, Literacy and Civic Engagement Summer Institute, five teams, each with one teacher and three students from Pickens and Greenville Counties,

learned to use digital video cameras, documentary techniques, interviewing and writing skills, and how to select community issues as topics.

During the upcoming school year, student teams are expected to produce five video documentaries for public viewing that will engage parents and community leaders in discussions.

The program was hosted by Clemson's Youth Learning Institute. Facilitators were Betsy Newman, SCETV producer and multi-media content developer, and Amy Melnick from the Educational Video Center, a media arts center that teaches social documentary production and media analysis to youth, educators and community leaders. Other partners included Write to Change, Inc.; Jim Self Center on the Future at Clemson's Strom Thurmond Institute; and the School District of Pickens County.

For more information: Pam Bryant, 803-553-7705, pbryant@clemson.edu.

Students discover the science of learning

By Allison Caldwell

This spring, 98 middle school students from across the state came to the Youth Learning Institute in Pickens for a new learning adventure called CSI: *Clemson Student Investigators*.

The three-day program teaches students to solve mysteries using math, forensic science and technology. Hands-on activities include hair and handwriting analyses, pH tests, paper chromatography and footprint casting.

While students engage in forensic fun, teachers earn continuing education credits through workshops developed and led by Institute staff. Courses such as *The Resilient Educator and Catalytic Learning* prepare teachers to respond clearly and quickly under pressure, stop the negative impact of stress, and engage students in learning.

One teacher's evaluation comment was: "This was our school's first overnight field experience and it was great! The academics and instruction were sound and thoroughly engaged the students. We are very pleased that we chose CSI, and hope it will become a tradition for our school."

For more information: Jen Collier, 846-878-1103, collie4@clemson.edu, www.clemson.edu/yli/csi/.



Photo by Youth Learning Institute



Photo by Lydia Petrakis

Model UN program builds diplomacy and skills

By Kathy Woodard

As a step toward understanding international relations, students from Clemson's Model United Nations Club spent a week in May working with schools and youth groups in the Commonwealth of Dominica.

Held at the Archbold Tropical Research and Education Center (ATREC), the program designated high school and college students to represent different countries, present that country's position on a global issue and debate resolutions. Students and teachers from the Dominica State College, Saint Mary's Academy, the Youth Advocacy Movement and Pioneer Preparatory School debated HIV-AIDS and other issues.

"It is a unique role-playing experience in international diplomacy and empathy," said Kimisha Thomas, co-facilitator at ATREC with Clemson professor Michael Morris. "The program is so flexible it can be adapted to any age group or education level. It would make a great after school program for our future leaders."

Clemson political science student Lydia Petrakis said, "Working with Dominican students and administrators was an amazing experience. I was extremely impressed by the students' active involvement in debating world issues and genuine interest in Model United Nations." The program was sponsored by Clemson's Service Alliance.

For more information: Michael Morris, 864-656-3545, morrism@clemson.edu.

Dawson earns top agricultural research award

By Peter Kent

Food scientist Paul L. Dawson has received Clemson's highest agricultural honor: the 2007 Godley-Snell Award for Excellence in Agricultural Research.

His research includes developing soy-based packaging films that are environmentally friendly and can be recycled as animal feed, reducing the risk of food-borne illnesses, and enhancing the healthful ingredients in fruits and vegetables through protein films that control microbes and provide antioxidant protection.

Joining the Clemson faculty in 1991, Dawson includes students at the heart of his research program. He or his students have presented 92 scientific presentations, published 66 research articles in nine peer-reviewed journals, 34 trade or technical publications and 10 book chapters. He is also a co-inventor on four patents.

Dawson completed his doctoral and post-doctoral studies in food science at North Carolina State University.

For more information: Paul Dawson, 864-656-1138, pdawson@clemson.edu.



Turfgrass and crop scientists join Pee Dee center

By Tom Lollis

Two new scientists have joined the Pee Dee Research and Education Center in Florence. Juang-Horng "J.C." Chong brings expertise in the biology, ecology and management of pests for turfgrass and ornamental plants. David Gunter is responsible for integrated pest management and agronomic programs for peanuts, soybeans, corn, tobacco and other crops.

Chong, a native of Malaysia, holds a B.S. in ecology and evolutionary biology from the University of Arizona and M.S. and Ph.D. degrees in entomology from the University of Georgia. Prior to joining Clemson, he implemented biological control of invasive pests for the University of Florida and the USDA Animal and Plant Health Inspection Service (APHIS).



Chong

Gunter, a native of Pelion, holds a B.S. in agricultural mechanization and business and an M.S. in agriculture, both from Clemson. He served as a



Gunter

county agent in Darlington County prior to moving to the Pee Dee center. He will work with specialists there and at the Edisto center in Blackville, and with county Extension agents in the Pee Dee region.

For more information: J.C. Chong, 843-662-3526, ext. 224, juanghc@clemson.edu; David Gunter, 843-662-3526, ext. 226, dgunter@clemson.edu.

Fall plant sale in Botanical Garden

By Diane Palmer

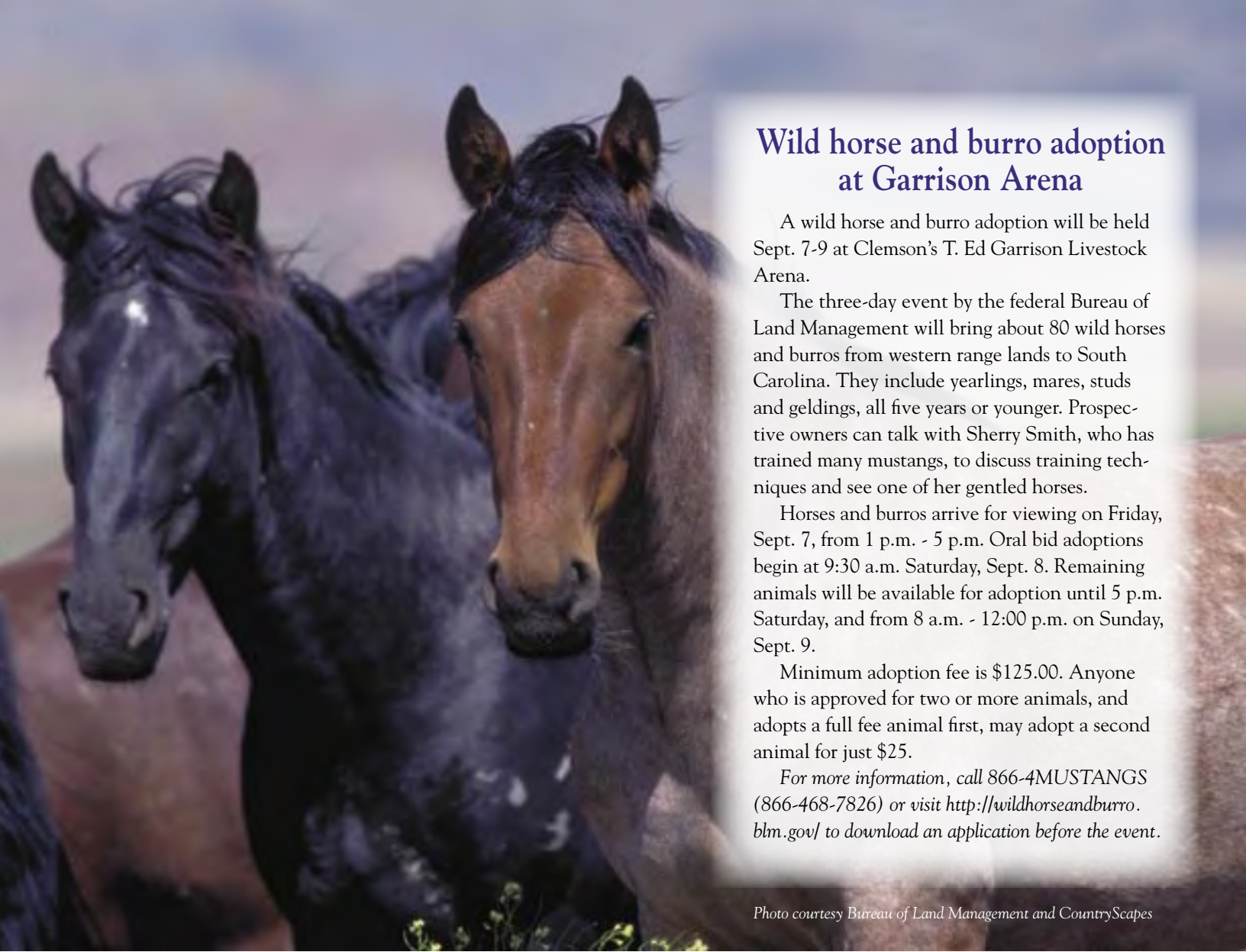
Unusual shade-loving plants, perennials, natives, trees, shrubs and orchids will be among hundreds of plants for sale at the South Carolina Botanical Garden's fall plant sale September 28-29.

Garden staff and Master Gardener volunteers will be available to help with plant selection and garden design ideas. The plant sale features plants grown at the Garden that are suited for Zone 7 but may not be readily available in commercial nurseries.

A preview sale for Friends of the Garden members will be held Friday, Sept. 28, from 2:30 to 6:30 p.m. Non-members may join at the sale. The public sale is Saturday, Sept. 29, from 9 a.m. to 1 p.m.

A list of plants to be offered is at www.clemson.edu/scbg/plant_sale.htm.

Photo by Diane Palmer



Wild horse and burro adoption at Garrison Arena

A wild horse and burro adoption will be held Sept. 7-9 at Clemson's T. Ed Garrison Livestock Arena.

The three-day event by the federal Bureau of Land Management will bring about 80 wild horses and burros from western range lands to South Carolina. They include yearlings, mares, studs and geldings, all five years or younger. Prospective owners can talk with Sherry Smith, who has trained many mustangs, to discuss training techniques and see one of her gentled horses.

Horses and burros arrive for viewing on Friday, Sept. 7, from 1 p.m. - 5 p.m. Oral bid adoptions begin at 9:30 a.m. Saturday, Sept. 8. Remaining animals will be available for adoption until 5 p.m. Saturday, and from 8 a.m. - 12:00 p.m. on Sunday, Sept. 9.

Minimum adoption fee is \$125.00. Anyone who is approved for two or more animals, and adopts a full fee animal first, may adopt a second animal for just \$25.

For more information, call 866-4MUSTANGS (866-468-7826) or visit <http://wildhorseandburro.blm.gov/> to download an application before the event.

Photo courtesy Bureau of Land Management and CountryScapes

CLEMSON[®]
PUBLIC SERVICE

130 Lehotsky Hall
Clemson, SC 29634-0101

Address service requested

*Come to the Botanical Garden's
fall plant sale Sept. 28-29
www.clemson.edu/scbg/plant_sale.htm*

Nonprofit
Organization
U.S. Postage
PAID
Permit 10