GROUND IN RESEARCH, ROOTED IN EXTENSION

GEORGIA CENTER
FOR URBAN
AGRICULTURAL &
ENVIRONMENTAL
SCIENCES
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CENTER TECHNOLOGY: MEETING INDUSTRY, EXTENSION, AND CONSUMER NEEDS

The Center website (ugaurbanag.com) houses hundreds of convenient, curated, and easily searchable articles covering an expansive list of landscape, garden, and pest topics.

Businesses can access rainy day – any day training. Urban Ag professionals can:

- Register on-line for Green Team workshops.
- Register and order study materials for the Georgia Certified Landscape Professional and Georgia Certified Plant Professional programs.
- Sharpen their skills with on-line galleries and quizzes.
- Prepare for exams with the easy-to-use on-line platforms.
- Access Supercrew and bilingual landscape safety training program videos, study guides, and evaluations.

Center development prowess has contributed to many projects.

- GardenPro uses QR tags in stores to provide accurate and concise information for shoppers and connects them to the local Extension office.
- GardenSource helps users identify insect resistant plants.
- The Center iPAD lab (over 40 iPADs, traveling hotspot, and ProScope mobile microscope) have been used to train agents, take field data, test certification applicants, and orient new faculty.
- Center wikis organize training programs and coordinate activities
- Center websites support national meetings, house training programs, and support special projects.

For more information contact rbraman@uga.edu.

Extension agents can access resources to assist in county program efforts. Available on the Center website are PowerPoint presentations covering hundreds of topics. Ready-to-go programs in turfgrass training, water, IPM and other topics; links to time saving guides and relevant newsletters; and source material for newsletter/newspaper articles are made available for agent use.
AGENT DEVELOPMENT AND MASTER GARDENER TRAINING

Urban Agriculture and Natural Resource (ANR) agents must be on top of the latest developments in many diverse technical areas. They need to be intellectually armed to answer questions on a variety of topics, from kudzu bug infestations, tomato diseases, potential soil contamination, tree care, and water quality topics. It is important for Urban ANR agents to master technology that can help them serve their broad and diverse clientele. They need the opportunity to work collaboratively on complex issues.

Since its inception, the Center has provided a venue at which agents can hone their skills and interact. Two to four Urban Ag Updates are held annually which address these issues and many topics (e.g. the latest research developments, new programs, personnel changes that affect agents, useful apps, handling difficult people and permitting issues).

The most recent Agent Update was held at the Governor’s Mansion in Atlanta. Agents toured the house and the grounds and provided illustrative hands-on examples of tree care, ornamental beds, and unique turfgrass.

Center training efforts have also reached out to include Master Gardener (MG) Extension volunteers. These MG volunteers often handle homeowner questions and concerns in urban Extension offices. They conduct volunteer projects and interact with the general public. Center programs have provided advanced training to Master Gardeners in urban water issues, integrated pest management, tree care, and septic system maintenance.

For more information contact ebauske@uga.edu.
The public’s interest in low water use and sustainable turfgrass is increasing. Poor installation and maintenance can adversely impact water use of turfgrass. Workers on the job site are frequently temporary, seasonal workers, and rarely attend trade shows and other educational venues. Yet they are often directly responsible for the sustainability of turfgrass in the landscape.

Trainings were developed with funding from the Georgia Specialty Crop Block Grant Program. Trainings provided information on turfgrass installation and maintenance in clear, simple language and promoted sustainable, low water use turfgrass systems. The trainings were short, none exceeded 30 minutes, allowing them to be easily incorporated into the workday, either before crews left in the morning, at lunch, or after crews returned in the evening.

Trainings were held in 16 counties in Georgia, often on-site at landscape companies. A total of 2,251 workers received training. The participants received a Certificate of Completion.

In addition to the educational impact, supervisors and business owners noted other measurable benefits. After going through training, several groups decided to sharpen their lawn mower blades more often. Two groups planned on calibrating mowers to make sure mowing heights were adjusted to the turfgrass species. Another company used the training to teach their employees to change damaged irrigation sprinkler heads, freeing up supervisors for other duties. Workers mastered the material, improving 30% on post-training evaluations. Business owners and supervisors frequently asked for additional training. One supervisor noted, “Everyone commented on how informative this session was ... they gained a lot of knowledge.” All resources created for these trainings are available on-line.

For more information contact ebauske@uga.edu, cwaltz@uga.edu or beckygri@uga.edu
40 GALLON CHALLENGE WATER CONSERVATION PROGRAM

Water conservation is a necessity. The growing population and subsequent water demands have coincided with several high-impact regional droughts, increasing the pressure on limited water supplies.

The 40 Gallon Challenge is an educational program designed to teach water conservation. The participant, through their selection of practices will learn how to conserve water and how much water is used in routine activities. The program provides participants an estimate of water savings resulting from the implementation of water-conservation practices. The goal of the Challenge is to encourage people to save 40 gallons of water a day.

The website www.40GallonChallenge.org was created to log pledges and track progress. It sends an email to the participant reminding them of the pledge they have taken and the practices they chose. The website can be easily shared via Facebook or email and provides nationwide, statewide and countywide totals of pledges taken and gallons saved. Top ranked states and counties are displayed. All promotional material created to support the Challenge can be downloaded from the site.

The program is very flexible. It is used in traditional Extension venues, in schools by teachers, with 4-H programs, by Master Gardener Extension volunteers, and in other adult education programs conducted by water authorities and other groups.

Nationwide, over 7,740 people have taken the Challenge and pledged to save over 1.4 million gallons of water per day.

For more information contact ebauske@uga.edu or pugliese@uga.edu
ARBORIST SAFETY TRAINING

Arborists and tree care companies engage in hazardous work. They use chainsaws, climb trees, rig and remove trees, and work under the trees as other workers preform precarious duties above them.

The Center has sponsored and coordinated full day arborist safety trainings tailored to meet arborist and industry needs reaching 170 people. Arborists and company owners were surveyed prior to training and their input was used to select training topics and training times. A local safety company, North America Training Solutions, was hired to conduct trainings in safe tree climbing and equipment, tree rigging and removal, chainsaw safety (cutting and felling) and groundwork operations. The Occupational Health and Safety Administration (OSHA) approved trainings consisting of both classroom instruction and demonstration, and one was offered in Spanish. Agents located training sites with classroom facilities and suitable trees for climbing, cutting and rigging and they advertised and hosted the trainings.

General evaluations of the instructors and training were overwhelmingly positive and the training facilities were effective. Pre- and post training evaluation scores increased by 19%. Of the 170 participants, 80 received continuing education credits from International Society of Arboriculture.

For more information contact ebauske@uga.edu or jrolando@uga.edu.
Extension agents and their Master Gardener Extension (MGE) volunteers frequently receive questions from homeowners and others about septic systems. Many people do not know how their septic systems work, how to maintain them, or how to appropriately landscape the drainfield.

The Georgia Master Gardener Extension Volunteer Program, UGA Marine Extension Service, and the Center collaborated to create an advanced training for MGE volunteers. The training, “Cleanscapes: Landscapes, Septic Systems and You” earned participating volunteers a certificate that applies to both the Gold Star and the Silver Star advanced training recognitions.

The training focused on water in the landscape, the cleaning power of soils, location and maintenance of septic systems, and appropriate landscapes for the drainfields. The training included real-life examples of septic system impacts in Gwinnett County and coastal Georgia. It was delivered using a hybrid distance format with agents hosting the training in their counties. Lectures by specialists were delivered via webinar in the morning and agents directed the hands-on activities in the afternoon. Seventy-one volunteers were trained in 13 counties across the state. Pre- and post-training evaluation scores indicated an improvement in knowledge. The impact of the training was also assessed with a post-training on-line survey. Prior to training, 46.7% of the respondents did not feel confident responding to questions on septic systems or drainfields. After training 94% reported being likely or somewhat likely to talk or answer client questions about septic systems. Over seventy percent of the participants indicated they would recommend this training to other MGEVs.

Achieved webinars, videos, activities, PowerPoint presentations and evaluations are available on-line. For more information contact ebauske@uga.edu or sdorn@uga.edu.
LOCAL FOOD, LOCAL IMPACT - HEALTHY LIFE COMMUNITY GARDEN

The Healthy Life Community Garden (HLCG) has brought community focus and attention to the Rosenwald school building that stands next to the garden. Of great historic value, Rosenwald schools are named for Julius Rosenwald, the founder of the Rosenwald Fund. Rosenwald worked closely with Booker T. Washington and the faculty at Tuskegee Institute to design and construct schools, which played a critical role educating and empowering disenfranchised African-Americans in the 20th Century. Over 5,000 schools were built in 15 states by soliciting donations from community members and offering matching funds. Today, very few of these remarkable schools still exist.

The Fairmont Rosenwald School and the Fairmont neighborhood, with its shotgun homes and creole feel, are integral parts of Griffin, fashioned by the unique heritage and cultural patterns of the southern African Americans. The once proud neighborhood is now riddled with vacant lots and homes beyond repair.

The garden has served as a catalyst for the formation of a community revitalization task force to improve the neighborhood. The University of Georgia’s Center of Community Design and Preservation (CCDP) from the College of Environment and Design was invited to participate. An intensive three-day workshop was held with 23 graduate students in historic preservation and landscape architecture from the CCDP, with help from the Center. A plan was developed by these students, which will serve as a road map for neighborhood improvement. Pratt Cassidy, Director of CCDP noted, “The HLCG was a perfect first step for this community development project.”

For more information, please contact ebauske@uga.edu.
With 21 percent of its population in poverty and limited access to public transportation, Spalding County, Georgia is an identified USDA Food Desert. In the spring of 2012, Griffin and Spalding County residents, along with local elected officials, contacted the Center expressing their interest in establishing a community garden.

Spalding County Extension enthusiastically supported the community garden concept. After the mission and goals of the Healthy Life Community Garden (HLCG) were established, financial support for a garden was solicited and received from Griffin Housing Authority.

Spalding County Parks & Recreation worked to remove a dilapidated building located on the lot to make room for the garden. With the help of the Spalding County Water Department and Griffin Housing Authority, water was established in the garden area. Two Spalding County Extension program assistants were hired to help guide and support the garden development. These program assistants were vital in gaining and establishing a network of people and businesses that have generously donated supplies, services, and volunteer hours to support the HLCG. In May of 2013, the garden was ready to plant.

The garden now boasts over 20 raised beds, fruit trees, brambles and a community area. A board of gardeners governs garden affairs and operations. Gardeners have produced healthy, fresh vegetables and fruits including: tomatoes, peppers, green beans, potatoes, okra, various herbs, watermelons, greens, various lettuces, Swiss chard, broccoli, cabbage, carrots, beets, eggplant, and radish. An herb garden and butterfly garden add to the beauty of the HLCG and the children have created their own "fairy garden."

Spalding Extension provides trainings to the residents in Gardening 101, Organic Gardening, Integrated Pest Management and Composting, in addition to the informal training and problem solving that occurs daily at the garden.

The Children’s Summer Reading Program draws children into the garden, as does the annual Halloween with a Trick-or-Treat party. More than 200 children and family members from the neighborhood come through the garden and enjoy themselves in the positive and safe environment.

For more information contact ebauske@uga.edu or hutch@uga.edu.
CONSERVATION GARDEN - BEE, BUTTERFLY AND BENEFICIAL INSECTS

We are dependent upon ecosystem services or “life support services” provided by healthy ecosystems that we rarely recognize. Land managers should undertake the conservation of pollination systems and insects that deliver pest management services. The right combination of plant and floral resources can be used to attract beneficial and pollinating insects, which can reduce pesticide inputs.

More than 70 plant types were evaluated in the Conservation Garden at the University of Georgia Research & Education Gardens at the Griffin Campus. Plants were chosen based on several factors including high production of pollen and nectar, attractiveness to beneficial and pollinating insects, flowering phenology, and availability of floral resources. Plants located throughout the garden were monitored biweekly for one hour. Visual observations consisted of family and order of beneficial and pollinating insects observed, plant or location insects visited, and ecological classification of the insects.

Insect orders observed throughout the garden contain predatory, parasitoid, and foraging species that provide arthropod-mediated ecosystem services such as pollination and pest control. Differences between ornamentals were found with regard to types of insects attracted to a particular plant species.

Top attractors for:


For more information email kbra-man@uga.edu or bpennisi@uga.edu
Any people enter the landscape business with little experience and often little time is available for formal education. Retail garden centers are always looking for knowledgeable employees who know the plant material.

Certification programs are a means of verifying professional proficiency and developing professionalism in an industry. Landscape Contractors and Nurserymen are recognized for their knowledge and professionalism through the UGA administered Georgia Certified Landscape Professional (GCLP) and Georgia Certified Plant Professional (GCPP) Programs.

The GCLP and GCPP programs are self-study courses offered through the Center. The programs provide a means of advancing employee’s education and professional proficiency while minimizing time away from their business.

The certification programs were developed through a collaboration of green industry professional organizations, horticulture instructors, regulatory officials, and UGA faculty. Participants receive a 300-page reference manual, access to an online study course, and opportunities for hands-on reviews. There have been 1,700 graduates of the GCLP and GCPP program. They average 120 new applicants a year and currently there are 700 active applicants in process.

Properly designed and maintained landscapes not only increase property values by 15-20% but also act as filters for soil, air, and water resulting in a cleaner environment. Knowledgeable employees both in the garden center and in landscape installation/maintenance can recommend water efficient landscape plantings that are both beautiful and durable.

For more information, please visit ugaurbanag.com/certification or contact thurt@uga.edu.
CONNECTING STUDENTS TO URBAN AGRICULTURAL CAREERS

One of the hardest decisions a high school student must make is which career path or degree program to pursue. The Center and Georgia Green Industry Association (GGIA) worked across academic and professional boundaries to develop the GGIA Junior Certification program to help prepare students for careers in urban agriculture. An average of 120-150 high school and middle school students attend the annual tradeshow to test their plant identification skills and horticultural knowledge.

In addition to the certification exam, the students have an opportunity to listen to business owners describe their professions and spend time networking on the trade show floor. On-line study sites were developed for green industry professionals, teachers, and students. Three to four day workshops were developed to encourage industry certification for teachers and to provide them with teaching resources for their students.

Over 400 middle and high school students have participated in the GGIA Junior Certification program in the past three years resulting in 97 students successfully completing the exams. Approximately 60 vocational agriculture teachers have participated in over 72 hours of workshops led by Extension Specialists, Technical School Instructors, and Green Industry Professionals. Twenty-seven have become professionally certified in the Green Industry programs. In 2011 the Georgia Department of Education approved the student and professional certification programs, a major step in a school becoming industry certified. When a high school program becomes industry certified it receives a "stamp of excellence" which represents the apex of program quality. In addition to receiving a competitive advantage in the job marketplace through certification, students have also broadened their knowledge of the industry through seven live career speakers and five videos produced at job sites. The career videos have been viewed on YouTube™ 683 times in the past year.

For more information contact thurt@uga.edu or visit ugaurbanag.com/industry
THE GREEN TEAM AND CENTER EVENT COORDINATION

The Green Team is a group of Extension specialists who work with ornamental plants, turfgrass, diseases, and insects. With the help of the Center Event Coordinator, they are able to provide full or half day trainings for green industry professionals and others at the agent’s request.

When Extension trainings go well, it looks easy, but it takes a lot to make them happen. The Center Event Coordinator increases program efficiency by assisting county agents with planning, promoting, executing, and evaluating training programs.

The Center Event Coordinator helps agents by contacting speakers and confirming their availability. The coordinator creates promotional materials (flyers, registration forms, and postcards), takes on-line registrations and payments, and emails event advertisements to over 3,000 email addresses on file. The coordinator arranges for refreshments and lunch. She creates program agendas, provides necessary AV technology, collects, duplicates, and distributes any handouts and presentations to the attendees. The coordinator sends out the required forms for continuing education credits. On-site at the event, the coordinator provides on-site registrations and payments. After the event, she provides an accounting summary, disperses any unused funds to the unit specified and provides evaluation results to the agents and speakers.

To date, the event coordinator has facilitated 27 events, which were attended by 1,022 people for a total of 111.5 hours of training.

For additional training opportunities or contact bhorne@uga.edu.
HOMEOWNER ASSOCIATION NEWSLETTERS: A NATURAL CONDUIT FOR EXTENSION INFORMATION

Working with Homeowner Associations (HOAs) can be challenging for County agents. HOAs may be professionally or self-managed. Changes in leadership are common. HOAs often communicate with members via newsletters, websites, or email listservs. Though this is a familiar information vehicle, specific formatting, timing, and topic requirements demanded by publication editors make communication with HOAs challenging.

In early 2014, a concentrated effort was made to create a database of HOAs and work with them to release Extension information in their newsletters. A customer relationship management system was used to track HOA data and provide the one-to-one service required by the HOAs. Highrise (Basecamp Inc., Chicago, IL), an existing free, on-line system was selected. Highrise saves and organizes HOA information. It interacts with on-line calendars and email, reminding the user of deadlines and formats and records communications and articles previously sent. Highrise greatly reduces the time required to deliver custom articles to each HOA.

Contact information was gathered on local management, the civic association or the management company, and the number of homes in the HOA. Information regarding the presence of community gardens, septic systems, wooded areas, green space, lawn species, and the presence of retention and detention ponds was noted. Details on article formatting including required length and delivery dates were also determined.

To guide the development of the HOA outreach effort an agent advisory committee was formed. Each submitted article contains local county contact information in the format desired by the agent, promoting the local office and allowing HOA members to seek additional information or services. Agents and specialists have provided content on turfgrass issues, septic systems, and watering. There are over 40 HOAs with almost 26,000 homes in nine Georgia counties receiving Extension articles.

For more information contact beckygri@uga.edu.
ON-LINE STUDY TOOLS FOR PROFESSIONAL CERTIFICATION

Landscape contractors and nurserymen have a limited amount of time to attend face-to-face workshops to improve their plant identification skills. On-line study websites for participants in the Georgia Certified Landscape Professional Program and Georgia Certified Plant Professional Programs were developed. The courses were designed by using Moodle open-source software. The study sites include chapter modules, self-grading quizzes, and plant identification using randomized images.

Participants self-register in the certification study course. The on-line study website is an effective tool to raise scores of participants who use it. Participants who used the on-line study course scored an average of 21% higher (two full letter grades higher) than the people who took the plant identification exam without using the on-line study tools.

Based on this successful model, additional modules are being developed for the two professional classrooms, as well as content for an on-line study course for high school students to prepare our future workforce.

For more information contact thurt@uga.edu.
Since its initiation in November 2012, the Pesticide Applicator Recertification Training program has offered 12 trainings across Georgia reaching a total attendance of 600 people who received more than 2,600 hours of certified pesticide applicator credits.

This program assists local Extension agents to plan and conduct these valuable pesticide safety and handling trainings.

Evaluations at several of these trainings showed that 98% of attendees planned to use something they learned. Major lessons learned included applying pesticides more safely and gaining a better understanding of pesticide regulations. Attendee comments included these: “Excellent training – applied to many fields of pesticide application” and “I really got a lot out of this seminar today.”

Mosquito Control is a growing part of the pest control industry. Mosquito control that used to be conducted mainly by municipalities may now also be offered through private companies and these new applicators need training.

Commercial applicators of mosquito control products must have pesticide applicator certification in Category 41, Mosquito Control. This is a relatively new category and applicators must pass an exam to receive certification. This certification is offered through the Georgia Department of Agriculture.

To help applicators as they study for the exam, UGA Entomologist Elmer Gray had been offering a one hour review of the Category 41 (Mosquito Control) pesticide application and certification exam materials at regional trainings. He recorded a video of this training in 2013 and now the Georgia Mosquito Control Association hosts the video on their website (www.gamosquito.org/training.html).

The pest control industry was notified of this video through local Extension Offices, the Mosquito Control Association website, regional trainings and the statewide Pest Control Alerts and Landscape Alerts newsletters. The video is available free of charge and can help pesticide applicators to pass the exam, better understand mosquito biology & control and offer better and safer services to their clients.

For more information email wchance@uga.edu.
The Landscape Alert is an email newsletter sent to the Georgia landscape and turf industry providing UGA information regarding industry issues.

These issues include emerging pests, regulatory changes, upcoming training, and new information, or technologies for the industry. Coordinated by the Center, the newsletter is a collaboration of several UGA departments – Horticulture, Entomology, Plant Pathology, Crop and Soil Science and the Warnell School of Forestry.

Readers use the information contained in the Alerts for staff training, remaining current on upcoming issues, scouting for and identifying pests, evaluating current pest control practices and improving workplace safety. Alerts help maintain communications between state and county Extension staff, researchers, the industry, and industry associations. Alerts also serve as an educational tool for County Extension Agents.

Recently the Alerts were moved to a blog, fed through Mail Chimp to create the Alert newsletter. This allows identification of the reader’s preferences and the newsletter is adapted accordingly. These changes have increased the number of readers accessing the information in the Alert newsletter.

Landscape Alerts are currently sent to more than 1100 readers and feedback has been very good. In a recent survey, of those responding, 93% stated they learned something they plan to use.

For more information see www.blog.extension.uga.edu/urbanag/or email wchance@uga.edu.
The Pest Control Alert is an email newsletter and blog from UGA for the structural pest control industry. These Alerts are designed to anticipate industry needs and to use UGA resources to address emerging issues like pesticide resistant insects, integrated pest management of emerging pests (Africanized bees, kudzu bugs, Formosan termites, etc.) and pesticide regulatory changes. The newsletter is coordinated by the Center. The key contributor to the Alerts, the Urban Pest Management Program at the UGA Griffin campus, responds to challenges with up-to-date research, reports and trainings.

The Pest Control Alerts are emailed to nearly 500 people, many of whom share the information with co-workers. An on-line readers survey indicates that 96% of those responding have learned something they plan to use from the Alerts. The Alerts are impacting the Georgia structural pest control industry!

Examples of industry comments on the Pest Control Alerts include “Timely news-your site DELIVERS! “ and “Keep them coming”.

Extension personnel comments include “I ... always learn from your alerts. Our industry professionals also love to receive it as I pass it on to all of them.” “Our office staff and Master Gardener Volunteers use these pest control alerts to educate themselves for our clients. These alerts let us know what is out there.”

For more information visit blog.extension.uga.edu/pestcontrolalert/ or email wchance@uga.edu.
SAFETY TRAINING FOR HISPANIC LANDSCAPE WORKERS: GOOD FOR WORKERS AND GOOD FOR BUSINESS

According to a survey sponsored by the Southern Poverty Law Center in 2009, 32% of the Hispanics surveyed reported on-the-job injuries. Landscape work involves dangerous and loud equipment, pesticide handling, and potentially close contact with harmful plants and animals. Many new workers are hired during peek season, causing safety-training needs to overlap with the greatest workload.

A three-part training covering general precautions, equipment safety and pesticide safety was developed. From 2010-2014, 1,923 landscape workers received 7,867 contact hours of safety training in either English or Spanish. Working directly with business owners, trainings were arranged on-location in company facilities before the crews left for the day. On average, knowledge evaluation scores increased by 22%.

Value was built into the trainings because companies allowed employees to take them during working hours and paid them to take the training. Certificates of participation were given after the three parts of the training are completed.

The trainings are important to help companies develop a culture of safety. Support for and interest in the trainings is strong; nine out of 10 foremen interviewed would recommend repeating the training and several indicated they would like to have it more than once a year. The training continues with the on-line certificate safety-training course at http://www.ugaurbanag.com/safety.

For more information contact jrolando@uga.edu, amartine@uga.edu, or ebauske@uga.edu.
Fourth and fifth grade students from Metro-Atlanta have the opportunity to attend Pizza Farm, an event presented by UGA Cooperative Extension Agents and the Georgia Department of Agriculture at the Georgia State Farmers Market in Atlanta. This event provides urban youth an opportunity to learn about good health, nutrition and Georgia’s agricultural commodities that go into a widely popular meal. The Pizza Farm objectives are to: expose urban youth to Georgia’s agricultural commodities and to show students how physical activity and a healthy diet play a role in a healthy lifestyle.

The Cooperative Extension Metro Collaborative (Fulton, DeKalb, Gwinnett, Cobb and Clayton counties) invite groups of urban youth to visit the Pizza Farm. Nearly 60 volunteers and Extension agents from 20 North Georgia counties contribute to the success of this interactive educational event.

The multi-station event connects the parts of a pizza to Georgia Agriculture.

- A station focuses on physical activity, and a foundation for good nutrition.
- A station connects wheat to dough, and a cow to milk and cheese.
- A station focuses on pizza toppings, exposing the student to herbs, vegetables, and tomatoes before they are used to make pizza.
- A station connects cattle, pigs and/or chickens to commonly used meat toppings (sausage, pepperoni and chicken).
- A station assesses what knowledge the touring group retained.

At the conclusion of the hour and a half tour, each participant receives a pizza lunch along with dessert and a brochure designed for the parental guardian concerning the educational components of the event.

To date, 1,727 students and teachers have enjoyed the Pizza Farm. Evaluations revealed that many students were able to identify the stations and describe their relationship to agriculture. Teachers expressed their excitement about the project and how they would incorporate the information into other subject areas. State Senator Valencia Seay of Clayton County said she was “excited to have this educational opportunity at the State Farmers Market.”

For more information contact thurt@uga.edu.
OUR LANDSCAPE, OUR STREAM, OUR WATERSHED: A MULTI-STATE ADVANCED MASTER GARDENER PROGRAM ADDRESSES URBAN WATER ISSUES

From drought to floods urban Extension agents are on the front line dealing with urban water issues. Ag agents frequently use Master Gardener Extension (MGE) volunteers because they are uniquely positioned to deliver water quality information and resources to homeowners. Developing the knowledge base of these volunteers will strengthen the delivery of water quality and quantity messages to homeowners.

Teams of MGE coordinators, agents and specialists from Georgia, Alabama, and South Carolina met to pool their resources. The result was an advanced training for MGE volunteers on urban water issues. The goal of this training was to define the landscape’s impact on water in the watershed and encourage MGE volunteers to think beyond the yard, to local streams, and ultimately, to the watershed.

The team developed a three-day training, sharing expertise across state lines. The training covered the seven steps of a waterSmart landscape design and the conversion of a high water use landscape to a low water use landscape. Agents and volunteers learned about pollution sources, infiltration and rain harvesting. Everyone enjoyed learning about stream health.

Two hundred ninety-three volunteers were trained in 21 locations throughout four states. Local agents hosted the morning webinars and selected hands-on activities for the afternoon that complimented their local programs. The groups designed rain gardens, did waterSmart landscape retrofits, did irrigation audits, made rain barrels, and assessed stream health. Participants have reported that an estimated 12,021 homeowners have benefited from this training. Follow up surveys clearly demonstrated the project had strengthened the delivery of water quality and quantity messages to homeowners.

Achieved webinars, activities, PowerPoint presentations and evaluations are available on-line. For more information contact ebauske@uga.edu.
DISTANCE DIAGNOSTICS THROUGH DIGITAL IMAGING SYSTEM

The Distance Diagnostics through Digital Imaging system (DDDI) has served as an on-line diagnostic tool for Extension personnel since 1998.

Georgia residents contact one of the approximately 160 local UGA Extension offices with pest and plant problems. County Extension Office personnel utilize the DDDI system to submit digital images of these problems to state specialists who in return forward a rapid diagnosis to the county office through DDDI. The response is then shared with the resident.

Recent technology changes and emerging issues require that the UGA DDDI system be upgraded. The Center helped coordinate the creation of a task force and surveyed DDDI system users to identify current issues and needs. The DDDI system upgrades began in 2012.

The system was streamlined and simplified. New features were identified, including a method of accessing the DDDI system using mobile devices, and some local Extension offices received new DDDI diagnostic equipment. On-line and face-to-face training introduced DDDI system users to new training tools, system upgrades and/or best methods of submitting images. Seventy-five percent of the agents surveyed have noticed the UGA DDDI upgrade changes and liked them.

Ongoing user feedback is being used to continually upgrade and improve the DDDI system to provide Georgia residents with timely and accurate pest management information.

For more information email wchance@uga.edu or visit the DDDI website at www.dddi.org.
Gerbera daisies are the third preferred cut flower in the world, and demand is increasing in the United States. The lack of cost-effective options to control the complex of primary and secondary pests impedes development of a sustainable production system. The driving factor in gerbera production is insecticide resistant leafminers. Leafminers are also pests of numerous other greenhouse ornamental and vegetable crops. They can be controlled with parasitic wasps. This has been effective in areas only where disruptive use of chemical controls has been avoided.

Insecticides and miticides were identified that were compatible with biological controls. This allowed control of the primary pest in this system (leafminer) using its natural enemies and the use of less disruptive options from among the chemicals to control the secondary pests. The benefits from such a strategy are multifold. First, it reduced the pesticide footprints on the premises and in the environment. It enhanced safety to the workers and producers. It also provided better management of the pest leading to a better crop. Finally, it produced a sustainable production system.

A range in susceptibility among 60 cultivars was observed, suggesting that early and heavily infested plants could serve as early indicator plants, while those that were initially less preferred may provide some benefit in an IPM program.

A traditional chemically-based control regime was compared with a biologically-based control program. The biologically-based control program reduced overall leafminer populations and provided insect control at a lower cost than the chemically-based regime.

For more information contact kbraman@uga.edu.
The UGA Research and Education Garden is a 65-acre facility located on the UGA Griffin Campus that is dedicated to the development, evaluation, and delivery of science-based management practices for southern landscapes. The Garden provides a unique blend of mission-oriented research and education. Classroom facilities are complimented with a backdrop of theme gardens, turfed areas, active research plots, and a growing urban arboretum. Together, these provide an enhanced learning environment for landscape and nursery professionals, homeowners, gardening enthusiasts, garden club members, students, and other lifelong learners.

**Garden - Research**

A variety of research projects are routinely conducted within the confines of the UGA Research and Education Garden. Project leaders are CAES scientists and their collaborators and include such topics as biodiversity, plant variety evaluation and selection, management of insect and weed pests, conservation of pollinators and natural enemies, and best management practices for landscapes and home gardens. Some current projects in the Garden are:

- **Pollinator and Natural Enemy Conservation Study** – S.K. Braman & B. Pennisi
- **Azalea Breeding, Evaluation, and Selection** – C. Robacker
- **Roadside Weed Management Project** – P. McCullough
- **Commercial Blueberry Variety Evaluation, Selection, and Management** – S. Nesmith
- **Edible Landscape Blueberry Variety Development** – S. Nesmith
- **USDA National Germplasm System Warm-Season Grass Biomass Clonal Collection** – M. Dunn
- **Evaluation of Ornamental Grasses for Nursery and Landscape Industries** – W. Hanna, S.K. Braman & B. Schwartz
- **Momi Fir as a Viable Christmas Tree**
RESEARCH AND EDUCATION GARDEN (CONTINUED)

Alternative or Root Stock for Frasir Fir in the Southeast – M. Czarnota

- Turfgrass Weed Management Study – P. McCullough
- Insect Pest Management in Turfgrasses – S.K. Braman
- Identification of Pest-Resistant Turfgrasses – S.K. Braman, P. Raymer, W. Hannah, B. Schwartz
- Tolerance of Selected Ornamental Annuals and Perennials to Herbicides – M. Czarnota
- Daylily Rust Management – J. Buck
- Plant Growth Regulator Impacts on Ornamental Shrub Growth Characteristics – M. Czarnota
- Squash Pest Suppression Potential for Home Gardens and Small Market Vegetable Growers – S.K. Braman
- Raised Bed Vegetable Production Feasibility Study – R. Westerfield
- Evaluation of Canna Lily Varieties for Insect Pest and Natural Enemy Occurrence – S.K. Braman
- Insect Pest Management on Knockout Roses – S.K. Braman
- Chinese Privet Using Selected Herbicide Paints – M. Czarnota
- Hybrid Sweet Corn Variety Trials – R. Westerfield

For more information contact wgardner@uga.edu.
Garden - Education

The Garden Education Building in the UGA Research and Education Garden houses the Joyce G. Latimer Classroom with a maximum capacity of 42. The classroom and the building are used daily for workshops, classes, and various civic and community activities.

The Garden is routinely used as an outdoor teaching facility. Instructors on the UGA Griffin Campus, as well as Southern Crescent Technical College, use the Garden for plant identification and landscape management classes. Faculty also offer educational workshops on many topics including plant propagation, pruning, and rain harvesting. Workshops are attended by homeowners and professional landscapers. Certification testing for Georgia Certified Landscape Professional is periodically held at the garden.

Each year, graduates of the 2007 UGA Griffin Campus Master Gardener organize and conduct workshops for home gardeners and a day camp for educating children ages 7-11 on plant production and management, environmental topics, and other exploratory programs. The workshops and day camps are taught by certified Master Gardeners or other experts in the appropriate field.

Garden - Community

The Garden hosts family-oriented community events that are free and open to the public. These events include kite flying, art exhibits, scarecrows in the Garden and celestial viewings with the local Flint River Astronomy Club. The annual April Plant Sale and Open House is organized by the Friends of the Research and Education Garden, a non-profit group that supports the Garden and its programs. This group also conducts an on-line plant sale each fall and hosts a visit to the Garden by Santa and Mrs. Claus for kids of all ages.

The Garden is open to the public every non-holiday weekday from 8:00 AM to 5:00 PM and on Sunday afternoons from 1:00 to 4:00 PM from May through October.

For more information contact wgardner@uga.edu.
UGA FACULTY CONTRIBUTE TO NATIONAL EXTENSION COLLABORATIVE EFFORTS

Declining university budgets and loss of critical Extension faculty have led to investment in a national Extension web-based information system known as eXtension. eXtension provides a rapid means of internal and client based dissemination of information without a loss of University affiliation and identity. The eXtension network is organized by Communities of Practices (faculty workgroups) that develop needs-based subjective programming. eXtension is an additional resource that allows Cooperative Extension to maintain and even grow by providing an Internet framework for faculty from round the nation, to collaborate on information development. eXtension compounds the impact of Georgia's specialists and agents.

The Center has worked closely with a UGA Institutional Team and increased UGA participation in eXtension from 94 registered users to 362, making UGA the 4th most involved institution in the nation. There are registered faculty members in 96 Georgia counties. UGA faculty have published over 200 wiki information pages and made almost 400 communities of practice edits. UGA has faculty on 28 communities of practice and provides direct leadership on 11. Feedback from the Ask an Expert pilot counties were compiled and shared with the national extension faculty to improve the system. UGA faculty responds vigorously to Ask an Expert Questions. UGA has a presence (portal) on the eXtension Second Life Morrill Island, an important first step, bringing the UGA Extension website into the virtual education community.

For more information contact thurt@uga.edu.
TOOLS AND TACTICS TO ENHANCE IPM ADOPTION BY SMALL VEGETABLE MARKET GROWERS AND HOME HORTICULTURISTS

As the nation shifts its preference towards locally grown food, a substantial number of consumers are willing to pay premiums, especially for certain types of produce. According to the latest Census of Agriculture, direct sales of food products from farmers to individual consumers rose by nearly 50% between 2002 and 2007" (Farm Futures Aug 2013).

Current producers and new growers seeking to enter the marketplace to take advantage of these opportunities vary in experience in all aspects of production and marketing. The demand for educational opportunities has reached unprecedented levels as the public seeks to develop new farming ventures or current growers seek to adapt their existing operations.

End users and educators have requested compact, attractive and portable formats that encompass relevant management information in an “at your finger tips” design. Providing teaching tools in multiple electronic and hard copy formats appeals to broad audiences.

Hands-on workshops have long been a favorite among growers where practical, technical management information is directly experienced by the workshop attendee. As demands for organic options increase and conventional methods also embrace conservation efforts, the need to help growers successfully identify beneficials in a production system becomes more immediate.

A compact guide to Troubleshooting Local Vegetable Production Problems and a guide to Beneficial Insects were developed and distributed to participants of 10 workshops that were conducted statewide. More than 500 program participants learned how to best manage insect, disease and cultural problems in their gardens, variety selection, equipment, marketing, and other business aspects. Participants included small-scale farmers, home horticulturists and Master Gardeners. Other educators were also trained in programs put on for FFA Teacher training and ANR program updates.

For more information contact kbraman@uga.edu or bwesterf@uga.edu.
The economic contribution of turfgrass production, ornamental horticulture, landscape services, and related industry to the state has always been challenging to assess. The industry is very diverse and loosely represented by several professional associations.

The Center has worked closely with other departments, centers within UGA, and industry associations to determine the size and impact of this sector.

The industry is important to Georgia, directly contributing $4.0 billion in output, and indirectly another $3.8 billion for a total contribution of $7.8 billion. The industry also accounts for a total of nearly 87,000 full- and part-time jobs.

Over the years Center collaborations have studied and documented industry responses to drought and the financial crisis, providing timely and accurate estimates for policy and decision makers. Recent work indicates that the structure of the industry has changed. In the past, most companies were relatively small and employed few people. The challenges of the past years forced companies to expand or leave the industry. Larger firms now dominate the sector.

For more information contact ebauske@uga.edu, wojciech@uga.edu or spkane@uga.edu.
It is a challenge for Extension personnel to meet the public demand for environmentally friendly or integrated pest management (IPM) alternatives for pest control.

Funded by a grant from the Southern Regional IPM Center and coordinated by the Center, Extension teams from Auburn University, Clemson University, The University of Georgia, North Carolina State University, and Mississippi State University designed a survey to assess agent needs. Ninety agents in the five-state region responded. The agents identified the need for additional Master Gardener Extension (MGE) volunteer training in plant, disease, and insect identification. They also requested MGE volunteer training in pesticide safety and landscape problem diagnosis.

The multi-state planning team outlined ten trainings for MGE volunteers in homeowner IPM. Trainings were developed and presented by individual team members. PowerPoints and assessments were developed for each topic. The team pooled resources to develop hands-on activities that supported and complemented the trainings. All participating agents had access to the shared resources on a Center wiki.

Trainings were delivered via webinar and local agents hosted the trainings. Agents also selected and presented hands-on activities that complemented their local programs and needs.

Over 35 county Extension agents hosted the three-day training, which was presented in six locations in Alabama, 14 locations in Georgia, and 15 locations in North Carolina. A total of 472 MG volunteers were trained in homeowner IPM. Feedback from the participating agents was strong. One agent summed it up, “It was an excellent program. Everyone really enjoyed it and learned so much! We will definitely use these resources in other trainings.”

Achieved webinars, videos, activities, PowerPoint presentations and evaluations are available on-line. For more information contact ebauske@uga.edu.
Recognizing the increasing need for urban tree care expertise and the important role that Master Gardener Extension (MGE) volunteers play in communicating with the public, the Urban Forestry Issue Team developed an educational module for county Extension agents to use for training a Master Gardener in urban and community tree care.

With funding from the National Urban and Community Forest Advisory Council, a team of UGA agents trained 89 Extension agents in Alabama, South Carolina, North Carolina and Virginia. The goals of the program were to: train agents in urban tree care, provide them with a complete course for MGE volunteers, and introduce them to local efforts which foster green infrastructure and sustainable community forests. Agents received eight reference books, training cds, PowerPoints and handouts. They were also introduced to local green infrastructure initiatives.

Follow-up surveys demonstrated the effectiveness of the training. It empowered agents with the knowledge, information, and resources they needed to respond to daily requests about urban trees and train MGE volunteers.

Within twelve months of the training workshop, the agents had trained 966 MGE volunteers with the materials they had received in the workshop. Agents also reported using the materials and information from the workshop to train arborists, landscape contractors, and elementary school students. The Master Gardener volunteers were also using their knowledge in a broad range of activities for Cooperative Extension.

For more information contact ebauske@uga.edu or shammond@uga.edu.
AWARDS, PUBLICATIONS AND FUNDING

NATIONAL

2014

cXtension Outstanding Institutional Team. Hurt, R. T.

National Award of Excellence from the National Association of Housing and Redevelopment Officials for The Griffin Housing Authority’s Educational Prosperity Initiative. A total of 19 were issued in the country. The Healthy Life Community Garden and associated educational programs.

National Merit Award from the National Association of Housing and Redevelopment Officials for The Griffin Housing Authority’s The Educational Prosperity Initiative. The Healthy Life Community Garden and associated educational programs.

2013

GES Fellow (Scholarship/Research). Georgia Entomological Society. Braman. S. K.

Distinguished Achievement Award, American Society for Horticultural Science, Consumer Horticulture and Master Gardener Working Group. Bauske, E. M.

Outstanding Extension Publication Award, American Society for Horticultural Science. Managing Garden Insects Begins with a Question: Friend or Foe? (Video). Bauske, E. M.

2012


2011

cXtension Outstanding Institutional Member, One of three people honored as the first recipients of cXtension’s National Be Grow Create Outstanding Institutional Team Member award (National). Hurt, R.T.


2009

Elected President, SEB. ESA (Leadership) Southeastern Branch Entomological Society of America. Braman. S.K.

SEB Distinguished Achievement in Horticultural Science Award. Southeastern Branch of the Entomological Society of America. Braman. S.K.


National Association of County Agricultural Agents - Achievement Award. This is the highest award given for Extension Professionals with less than 10 years of service. Hurt, R.T.

STATE

2014

Honorary State FFA Degree. Hurt, R. T.


Friends of Southern IPM Bright Idea Award to SNIPM for IPM Pro App and eBooks.
2013
Georgia Association of County Extension Agents – Extension Education State Staff Poster Session. 2nd Place. Hurt, R.T.
Recognized by the Secretary of Agriculture, Gary Black, for USDA/Agricultural Marketing Service Specialty Crop Block Grant Award. Bauske, E., C. Waltz and M.K. Woodworth.

2009
Georgia Association of County Agricultural Agents – Oral Presentation 1st Place Winner, AM/PIC. "Reaching Visual Learners using Virtual World eXtension. “ Hurt, R.T.

PUBLICATIONS

Books - Book Chapters


Refereed Articles


Bennett, P. J., E. M. Bauske, A. Stoven O'Conner, J. Reeder, C. Busch, H. A. Kratsch, E. Leger, A.


Peer Reviewed, Non-refereed Publications


**Research Reports, Newsletters, and Popular Press Publications**


Braman, S. K. (2012) Southern red mite control Check braod-leaved evergreens for damage p 24-25 UAC Magazine


Nair, S. , Braman, S. K.. (2012) Keep an eye on the azaleas Azalea lace bugs are coming soon. Pg 20-21 UAC Magazine


Software


Videos


Peer Reviewed Slide Sets


FUNDING

Total Funding $2,017,144

Bauske, E.M. and A. Martinez-Espinoza. (2014). Hands-on Safety Training for Tree Care/Landscape Workers. OSHA. Primary investigator and project coordinator. $74,127.


Braman, S.K. (2014) Industry gifts supporting turf and ornamental research. $45,000


Braman, S.K. (2013) Industry gifts supporting turf and ornamental research. $49,500


Braman, S.K. (2012) Industry gifts supporting turf and ornamental research. $95,000


Braman, S.K., (2012) Efficacy Of Management Tools For Armored Scale In Ground Production And Foliar Beetles In Container Nursery Production, University Of Florida (USDA) $20,000.


Braman, S. K., (2011) University of Georgia Department of Entomology, Specialty Crop Block Grant Program, GA Department of Agriculture (USDA). $40,000.


Braman, S.K. (2010) Industry gifts supporting turf and ornamental research. $64,800


Braman, S. K. (2010), Increasing Competitiveness Of Georgia's Cut Flower And Greenhouse Industry-Phase 2, GA Department Of Agriculture (USDA) $40,000.


Braman, S.K. (2009) Industry gifts supporting turf and ornamental research. $46,500


Braman, S.K., (2009), Management Of Japanese Beetles In Nursery Production With New Chemistry, University Of Florida (USDA) $4,000.
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