

NC STATE

Extension Master Gardener

Extension Master GardenerSM College

Celebrating 40 Years of
Helping Gardeners Put Knowledge to Work

NC State University

June 6 – 9, 2019



June 6 – 9

Extension Master Gardener College. You are invited!

Calling all North Carolina Extension Master GardenerSM volunteers and interns! You are invited to be part of the 2019 Extension Master Gardener College at NC State University, June 6-9. Whether you just finished initial training or have been in the program for years, this advanced training conference offers unique and exciting opportunities for every EMG volunteer.



Improve your skills and learn hands-on! Sign up for morning and afternoon workshops and tours.

Gain a deeper understanding of the history of the Extension Master Gardener program, Cooperative Extension, and the Land-Grant University system from the opening keynote session presented by Dr. Gary Moore.

Broaden your knowledge on a variety of horticultural topics as you learn from NC State Extension specialists and experts! Concurrent session topics include cultivating fruits and vegetables, organic lawn care, establishing meadow gardens, and more!

Be inspired to plant something new by Saturday's keynote presentations! Dr. Larry Mellichamp will discuss "Why Garden with Natives?" while Mark Weathington of the JC Raulston Arboretum will present "Beyond Tire Planters, Gardening in the South."

Earn all the continuing education credits you need for EMG volunteer recertification!

Celebrate the 40-year anniversary of the EMG program in NC and the amazing work EMG volunteers are doing across our state during Friday's Volunteer Recognition and Ice Cream Social and Saturday's "Search for Excellence" presentation.

Enjoy spending time with EMG volunteers from across the state! The EMG College is the perfect opportunity to meet new people, connect with friends, and share ideas.

Stay in comfort at University Towers! This private dorm offers affordable prices with a hotel-like atmosphere. Each room has its own mini-fridge, microwave, and vanity. Bathrooms are shared ensuite with the adjacent room. There are no bunkbeds, parking is free for guests, and the top-floor dining center offers a variety of food options you are sure to love!

On behalf of the 2019 EMG College Advisory Team, I hope you will join us this June for this amazing opportunity to learn, have fun, and enjoy the fellowship of EMG volunteers from across North Carolina.

Charlotte Glen, State Coordinator, NC Extension Master Gardener Program

Why Nasturtiums? Nasturtiums are the theme plant for the 2019 EMG College, honoring the 40th anniversary of the EMG program in North Carolina. Nasturtiums are the traditional flower for a 40-year anniversary, and what better plant to represent the EMG program reaching this milestone? Nasturtiums are tough plants that thrive even in harsh growing conditions, producing loads of brightly colored, cheerful blossoms that are both beautiful and edible. Just like the EMG program, they brighten your day and nourish both your body and soul.



Table of Contents

Schedule at a Glance	4
Keynotes and Special Programs	5
Thursday Tours and Workshops	6 - 8
Friday and Saturday Special Events	9
Friday Afternoon Concurrent Sessions	10 – 11
Saturday Afternoon Concurrent Sessions	12
Life at EMG College: Housing and Dining	13
Speaker Information	14 - 18

**Don't Delay! Registration
Closes Monday, April 15**



Schedule At a Glance



CC BY-SA3.0

Wednesday <i>June 5</i>	Thursday <i>June 6</i>	Friday <i>June 7</i>	Saturday <i>June 8</i>	Sunday <i>June 9</i>
University Towers Dorm Check-in on Arrival	7:00 - 9:00 am Breakfast	7:00 - 9:00 am Breakfast	7:00 - 9:00 am Breakfast	Breakfast on your own
4:00 - 8:00 pm College Registration	7:30 - 9:00 am College Registration	7:30 - 9:00 am College Registration	9:00 - 9:30 am Announcements and Introductions	7:00 - 11:00 am Check-out
Dinner on your own	9:30 - Noon Tours and Workshops	9:00 - 9:30 am Official NC EMG College Kickoff	9:30 - 11:00 am Keynote 2	On-your-own visit to NC State Farmers' Market and local attractions
	11:00 - 1:00 pm Lunch	9:30 - 10:00 am Welcome from Extension	11:00 - 11:15 am Break	
	1:30 - 4:30 pm Tours and Workshops	10:00 - 10:30 am Break	11:15 - Noon Search for Excellence	
	1:30 - 4:30 pm Agent Training	10:30 am - Noon Keynote 1	11:00 - 1:00 pm Lunch	
	4:00 - 8:00 pm College Registration	11:00 - 1:00 pm Lunch	1:30 - 3:00 pm Concurrent Sessions	
	4:30 - 7:00 pm Dinner	1:30 - 3:00 pm Concurrent Sessions	3:00 - 3:30 pm Break	
	4:45 - 5:45 pm NCEMGVA Annual Business Meeting	3:00 - 3:30 pm Break	3:30 - 4:45 pm Keynote 3	
		3:30 - 5:00 pm Concurrent Sessions	4:30 - 7:00 pm Dinner	
		4:30 - 7:00 PM Dinner	6:30 - 8:30 pm JC Raulston Arboretum Tour	
		6:30 - 8:00 pm Volunteer Recognition and Ice Cream Social		

Please Note!

Your on-campus stay will be in University Towers. You may check in on arrival.

Registration for Extension Master Gardener College will be in the lobby of University Towers.

Meals will be served in University Towers dining hall.

University Towers is located at 111 Friendly Dr., near Dan Allen Parking Deck.

Keynotes and Special Programs

Friday
10:30 - 12:00 Noon

Growing Plants, Growing People: Land Grant Colleges, Cooperative Extension and Master Gardener Volunteers

Dr. Gary Moore
Professor Emeritus
NC State University

Learn why the Land-Grant College system exists, the role and history of Cooperative Extension, and how the Extension Master Gardener program supports Extension's objectives and mission.

Saturday
9:30 - 11:00 am

Why Garden with Natives?

Dr. Larry Mellichamp
Director and Professor (Ret.)
UNC Charlotte
Botanical Gardens

Learn how native plants of the Southeast interact with birds and insects as part of the web of life in your home garden.

Discover some of the more interesting Southeastern natives reliable for heat tolerance and garden beauty.

Saturday
3:30 - 4:00 pm

Beyond Tire Planters: Gardening in the South

Mark Weathington
Director
JC Raulston Arboretum

Whether it is managing diseases, mulching beds, or dealing with pests, knowing why we do what we do is key to becoming a successful gardener.

NC Extension Master Gardener Volunteer Association (NCEMGVA)

Annual Business Meeting

Thursday, 4:45 - 5:45 pm

Formed in 1991, the NCEMGVA aids in improving the effectiveness of its members as volunteers in the Extension Master Gardener program of the North Carolina State Extension. NCEMGVA offers competitive grants to county programs, hosts a semi-annual landscape garden design competition, publishes a quarterly newsletter, and recognizes outstanding EMGVs and Extension staff.

Join the outgoing officers and committee chairs as they summarize 2018 - 2019 and plan for the future of NCEMGVA. Following the election of the new slate of officers, get to know them and learn about their vision. See where you can help, perhaps as a volunteer delegate representing your county. Or, see where the NCEMGVA can help you!

Extension Agent Training

Thursday 1:30 - 4:30

Mission-focused team leadership ensures the mission does not get lost along the way in good ideas, rogue projects, time-consuming traditions, and distracting activities that create busywork rather than producing meaningful results. During this interactive workshop, agents will apply a step-by-step framework to classify and creatively analyze their own programs and identify projects that are mission-minded. The results of this assessment will empower agents to engage teams in identifying mission-minded new projects, allowing some projects to die a natural death, and revitalizing valuable projects that are mission focused.

Thursday
June 6

Tours and Workshops

9:00 am - Noon

Each tour and workshop is \$10
Payable during online registration.

Workshop

Landscapes that Protect Water Quality: Small Scale Solutions

Mitch Woodward

Stormwater runoff from urban areas is the top pollution source in NC. Through local case studies, participants will learn about cost-effective, small-scale solutions that can be employed in the landscape to improve property values and protect water quality.

Tour

Composting and Vermicomposting

Rhonda Sherman

Tour the Compost Learning Lab. See 14 types of compost bins and 12 kinds of worm bins. Watch worms eat dairy manure and turn it into vermicast that can increase crop yields and suppress diseases and pests. Learn how to vermicompost successfully at home, in schools, on farms, and commercially.

Tour

Bryce Lane's Gardens

Bryce Lane

Enjoy a rare peek into the landscaped gardens of horticulturist, TV personality, and NCSU lecturer emeritus, Bryce Lane.

Workshop

Digging Deep with "Junior Master Gardener"

Liz Driscoll

"Junior Master Gardener" brims with ideas and opportunities to engage youth in learning about the plant and soil sciences. Discover the fundamentals of the program by gobbling gas, sucking bugs, singing silly songs, and performing pollinator puppetry presentations. Learn how to adapt the program to numerous situations from certification through a club, to utilizing pieces in an after-school program, or within the context of a school classroom.

Tour

NCSA Agronomic Labs

Lab Staff

Have you wondered where your soil samples end up when you mail them, and what happens to them when they arrive at the lab? Take this tour of the Agronomic Division Labs to see not only the Soil Test Lab, but also the other labs including Plant Tissue Lab, Nematode Lab, Waste/Compost Lab, Solution Lab and the Media Lab.

Participants must wear long pants (capris are not allowed) and footwear must completely cover feet (no open-toed shoes). No bare skin may show below the waist. A visitor's ID badge is required in the Eddy building; and safety glasses must be worn during the tour. There could be strong odors in the Plant/Waste/Solution/Media lab.

Workshop

Interpreting Soil Test Reports to Improve Nutrient Management

Dr. John Havlin

Basic soil properties and processes are critical to efficient production and optimum soil health. Emphasis will be on understanding efficient nutrient management and availability through soil and plant analyses and in understanding and interpreting soil test reports.



CC BY-SA3.0

Thursday
June 6

Tours and Workshops

1:30-4:30 pm

Each tour or workshop is \$10
payable during online registration.

Tour

Permaculture at 610 Kirby Street

Will Hooker

The garden of Will Hooker and Jeana Myers is almost one-third of an acre, located in a small neighborhood adjacent to Dorothea Dix Park and within walking distance of downtown Raleigh. It is a permaculture model, growing a wide range of fruits, veggies, herbs, and medicinals. It has small ponds, captures water for irrigation, raises chickens, generates one-fourth of its electricity, and provides spaces and games for community involvement. The primary goals of 610 Kirby are productive beauty and fun.

*Note: There will be two tours
1:30 - 3:00 pm and 3:30 - 5:00 pm.*

Tour

NCDL Agronomic Labs

Lab Staff

Have you wondered where your soil samples end up when you mail them, and what happens to them when they arrive at the lab? Take this tour of the Agronomic Division Labs to see not only the Soil Test Lab, but also the other labs too including Plant Tissue Lab, Nematode Lab, Waste/Compost Lab, Solution Lab and the Media Lab.

Participants must wear long pants (capris are not allowed) and footwear must completely cover feet (no open-toed shoes). No bare skin may show below the waist. A visitor's ID badge is required in the Eaddy building; and safety glasses must be worn during the tour. There could be strong odors in the Plant/Waste/Solution/Media lab.

Workshop

Fire-Resistant Landscaping

Holly Campbell

North Carolina has a long history of wildfires. As more people move into natural areas, risk from wildfires increases. Fortunately, there are modifications homeowners can apply to make their home and landscape more fire-resistant. This hands-on workshop supports a new Master Gardener advanced training on fire-resistant landscaping, or firescaping. Through a blend of presentations and hands-on group activities, participants will gain knowledge of North Carolina fire history, fire behavior, wildfire risk assessment, firescape design, and fire-resistant plants. The speaker will share firescaping resources useful in public outreach and education and recommend state contacts helpful in supporting outreach efforts.

Workshop

Plant Identification

Dr. Alexander Krings

Understanding a plant's morphology, its physical form and external structure, is key to accurate plant identification. Through a combination of digital and hands-on exercises, participants will learn basic plant morphology and have an opportunity to practice applying concepts to identify taxa at various taxonomic ranks from family to species.

Workshop

Plant Propagation Techniques

Lis Meyer

Learn about various vegetative and sexual propagation techniques. Enjoy hands-on activities related to some of these techniques.



By Kong of Lasers, CC BY 4.0,

Thursday
June 6

**Tours and Workshops
1:30-4:30 pm (continued)**

Each tour or workshop is \$10
payable during online registration.

Workshop

**The Evolution of
Pest Resistance**

Ryan Adams

An exploration of pesticide resistance, from its early days through the introduction of IPM and its continued rebirth. The goal is to understand the factors, including regulation and the global crop protection market, contributing to pesticide resistance and the way in which it relates to future treatment decisions. Participants will take away educational tools and real life examples for teaching IPM and gain a view to a future with and without pest resistance and IPM.

Workshop

**Digging Deep with
“Junior Master
Gardener”**

Liz Driscoll

“Junior Master Gardener” brims with ideas and opportunities to engage youth in learning about the plant and soil sciences. Discover the fundamentals of the program by gobbling gas, sucking bugs, singing silly songs, and performing pollinator puppetry presentations. Learn how to adapt the program to numerous situations from certification through a club, to utilizing pieces in an after-school program or within the context of a school classroom.

Workshop

**Diagnostic Workshop
for Master Gardener
Volunteers**

**Dr. Matt Bertone
Mike Munster**

This workshop will introduce participants to the basics of diagnosing plant diseases, pests, and disorders through lecture, practical exercises, and a tour of plant problems on the NCSU campus. After the workshop, participants will be able to approach the diagnostic process in a logical and systematic way, and will recognize some issues common to plants in home gardens.

*Thank you,
Beda!*



Our cover was created in watercolor and colored pencil by Artist Beda Trenning-Helms who has been an Extension Master Gardener Volunteer in Union County for almost 20 years. Beda has used her talent to create wildflower print and notecards that have helped raise funds to support educational programs of the Extension Master Gardener volunteers in Union County.

Workshop

**Pollinator
Conservation in
North Carolina**

**Gabriela Garrison
Angel Hjarding
Elsa Youngsteadt
Hanna Levenson**

Learn about the newly formed [NC Pollinator Conservation Alliance](#) and the critical relationship native plants have to pollinating insects. Gain an understanding of urban habitats and [community engagement in habitat conservation](#). Participate in a hands-on presentation discussing native bee diversity and identification.

Special Events

**Friday, June 7 and
Saturday, June 8**

Friday

9:00 - 9:30 am

Kick-off and Orientation

Dr. Lucy Bradley

Professor and Extension Specialist,
Urban Horticulture, NC State University

Charlotte Glen

State Coordinator, NC Extension
Master Gardener Program

Matt Jones

Extension Agent, Chatham County
EMG College Planning Team Coordinator

9:30 - 10:00 am

Welcome from Extension

Dr. Richard Bonanno

Associate Dean, College of Agriculture and Life
Sciences (CALS)
and
Director, NC State Extension

10:30 am - Noon

Keynote 1

Dr. Gary Moore

Professor Emeritus, NC State University
“Growing Plants, Growing People:
Land Grant Colleges, Cooperative Extension
and Master Gardener Volunteers”

6:30 - 8:00 pm

Volunteer Recognition and Howling Cow Ice Cream Party



CC BY-SA 3.0

Saturday

9:00 - 9:30 am

Announcements and Introductions

Dr. Lucy Bradley

Professor and Extension Specialist,
Urban Horticulture, NC State University

Charlotte Glen

State Coordinator, NC Extension
Master Gardener Program

Matt Jones

Extension Agent, Chatham Co.
EMG College Planning Team Coordinator

9:30 - 11:00 am

Keynote 2

Dr. Larry Mellichamp

UNC Charlotte Botanical Gardens
“Why Garden with Natives”

11:15 am - Noon

Search for Excellence

3:30 - 4:45 pm

Keynote 3

Mark Weathington

Director, JC Raulston Arboretum
NC State University
“Beyond Tire Planters: Gardening in the South”

Friday
June 7

Concurrent Sessions
1:30 - 3:00 pm

Let's Talk Tomatoes

Dr. Chris Gunter

Learn about the latest science-based tomato information. Topics will include growing, harvesting, handling, diagnostics, and genetic diversity.

Meadow Gardens for Carolina Landscapes

Sam Marshall

This class will focus on the basic premises of meadow gardens, their benefits to wildlife and the environment, and discuss procedures for converting a portion of your yard to a meadow. Participants will attain a better understanding of the native plants suited for meadow gardens and learn about some of the beneficial insect species that are attracted to these areas.

Note: Bring to class a rough sketch with approximate measurements of a part of your home landscape in which you are considering installing a new garden.

Make sure to note sunlight exposure, soil types, irrigation needs, etc.

Growing Strawberries North Carolina

Dr. Mark Hoffman

How do you grow strawberries in our climate? Learn about the initial costs, production techniques, and common problems surrounding cultivation of this crop.

Natural and Biological Pest Control in the Home Garden and Landscape

Dr. David Orr

Learn about the ecological underpinning of natural and biological pest controls: their values and limitations, which common organisms are truly beneficial, and which practices make a difference. The discussion will dispel some myths about natural and biologic pest controls.

Celebrating Place, Cultivating Resilience

Laura Lengnick

Take this class if you want to learn more about how you can enhance the resilience of your community by encouraging public participation in local foodways. The class will introduce the basic concepts of community resilience, provide a brief overview of traditional NC foodways as an expression of the natural history of our state, and share some examples of how you can begin to cultivate community resilience through foodways projects.

Invasive Ants

Dr. Michael Waldvogel

The red imported fire ant and the Asian needle ant are two ant species that present both a nuisance and public health threat in our state. What is it about the biology and behavior of these pests that make their control challenging?

Caneberry Production for the Home Garden

Dr. Gina Fernandez

Learn the principles and best practices for growing blackberries and raspberries in the home garden, including site preparation, trellising, cultivars, and pest management.

Ergonomics for Gardeners

Dr. John Harrelson and Charles Murphy

Gardening is an excellent, low-stress, physical activity with significant mental health rewards. But to maximize gardening pleasure and minimize gardening injuries, gardeners need to be aware of good practices. This presentation will emphasize the good and point out the not-so-good.



Jamain - Own work, CC BY-SA 3.0,

Friday
June 7

Concurrent Sessions
3:30 - 5:00 pm

Creating Outdoor Learning Environments for Early-Childhood Healthy Development

Dr. Nilda G. Cosco

The Preventing Obesity by Design strategy (POD) will describe best practice indicators to create high quality environments for children from birth to five years of age. Learn about the childhood obesity crisis and the critical role of well-designed and managed outdoor spaces for healthy development. Review the latest research on the impact of natural environments on health outcomes. Discover how Master Gardener volunteers can partner with early childhood organizations to create and support high quality environments for child development.

Effective Presentations

Bryce Lane

Whether you are giving a talk, teaching a class, instructing a lab, or leading a discussion, there are some key principles to being a successful public speaker. Come learn 10 tips that will improve your public speaking technique and ability and leave your audience informed and inspired.

Growing Grapes in North Carolina

Dr. Mark Hoffman

What does it take to grow grapes? Learn about the initial costs, production techniques, and common problems surrounding cultivation of this crop.

Where the Wild Things Are: Larval Host Plants for Butterflies and Moths

Sam Marshall

Which are the native plants that attract larval forms of butterfly and moth species? After the class you will be able to identify the five vegetative layers of a yard and memorize at least ten larval host plants that attract Lepidopteran species.

Participants will have the opportunity to construct a basic landscape plan for their own yard that incorporates more native plants to attract butterflies and moths.

Note: Bring to class a rough sketch with approximate measurements of a part of your home landscape in which you are considering installing a new garden. Make sure to note sunlight exposure, soil types, irrigation needs, etc.

Global Diversity of Cucurbits

Lori Shapiro

During this session, you will gain an appreciation for the diversity of Cucurbitaceae, also known as the squash or gourd family, what we have learned about ecology and pollination from studying these fruits, and how important this family is to local and global agriculture.

Mosquitos: Biology and Management

Dr. Michael Waldvogel

Mosquitoes are a critical nuisance and public health problem across North Carolina, particularly following natural disasters. Participants will learn about the most common mosquito species and how to manage mosquitoes while reducing the risks of pesticide use to both people and the environment.

Season Extension

Debbie Dillion

Learn practices and techniques that will help you extend your growing season to produce edibles year round. These straight-from-the-garden edibles will not only taste better than store-bought, but may also improve your nutrition levels and reduce your food budget.

Upping Your Blog Game

Justin Moore

Julie Hayworth-Perman

Explore how blogs can help promote Extension events and educate the public. Learn storytelling techniques that can help you create engaging content. Gain a better understanding of how your blog can reinforce and connect to the NC State Extension brand, and get advice from Buncombe County EMG volunteers for starting and maintaining an effective [volunteer managed blog](#).

Saturday
June 8

Concurrent Sessions
1:30 - 3:00 pm

Organic Gardening: Critical Steps For Fertility, Insect, Weed, and Disease Management

Dr. George Place

Both beginners and experienced gardeners will learn how to use a many-little-hammers approach to combat common diseases, insects, and weeds in their organic gardens. Learn why improved plant fertility management is key for integrated pest management and how to assess the nutritional health of plants throughout the growing season. Improve your knowledge of the insects, diseases, disorders, and weeds you need to recognize as part of this integrated plan of organic fertility, and insect, weed, and disease management.

Nuisance Wildlife

Greg Batts

Education is key to resolving most animal damage complaints. The biology and life history of wild animals that commonly cause problems provide clues. Learn how to deal with animal problems with both lethal and non-lethal methods.

You Can Have Your Garden and Eat it Too!

Dr. Lucy Bradley

Learn about edible landscaping and planning for food production throughout the year.

Permaculture: A Sustainable Living Methodology for the Home, Garden, and Community

Will Hooker

An overview of permaculture and a description of how it is implemented in Will's and his wife's home landscape. This nearly one-third of an acre is located in a small neighborhood adjacent to Dorothea Dix Park and within walking distance of downtown Raleigh. It is a permaculture model, growing a wide range of fruits, veggies, herbs, and medicinals. It has small ponds, captures water for irrigation, raises chickens, generates one-fourth of its electricity, and provides spaces and games for community involvement. The primary goals of 610 Kirby are productive beauty and fun.

Note: this is an alternative to the Thursday tour.

Giant Hogweed, Purple Loosestrife and Floating Heart, "Oh My!"

Dr. Bridget Lassiter

An overview of State and Federal Noxious Weeds found in North Carolina including definitions of "noxious" vs. "invasive", the rules and regulations governing movement of weeds in the state, and an update on several noxious weeds that were once sold in the green industry and are now present in small populations in NC.

Get More From Your Demonstration Garden

Charlotte Glen

Demonstration gardens are an effective and memorable way to teach people about great plants for your region and sustainable gardening techniques, but they require a large investment of resources and volunteer time. Learn from others who have created successful Extension demonstration gardens that enhance public outreach. Take away new ideas and tips for getting the most out of your demonstration garden, including how to maximize the garden's education value, strategies for garden maintenance, and using the garden to engage partners and the public.

Successful Tree Planting

Dr. Barbara Fair

Learn research-based planting techniques to help ensure that plants will survive well past the warranty period, and provide the basis for a sustainable landscape. Learn strategies for both container-grown and ball and burlap plants (woody plants in particular) along with the newest staking technique that holds down what you really want to hold down: the root ball! These staking and planting techniques are straightforward, can save money, and can revolutionize the way in which landscape plants are installed.

Life at NC Extension Master Gardener College

On-Campus Housing

On-campus residents will be housed at University Towers. You will be able to register for room and board when you register for EMG College on-line. During registration, you may select a single- or double-occupancy room that is part of a two-room, four-bed suite.

Each room has two desk, a fridge and microwave. Each suite has its own bath. Your linens will include: two flat sheets, a blanket, a pillow and pillowcase, two wash cloths and a towel. There is a mandatory, one-time flat charge of \$27 for linens.

Parking at University Towers is included in your room rate. Check-in is on arrival. Check-out is no later than 11:00 am on Sunday.



Dining

Meals will be served in the University Towers dining hall. During online registration you will be able to select a daily meal plan for Thursday, Friday and Saturday. Dinner on Wednesday and breakfast on Sunday are on your own. If you do not purchase a meal plan but wish to dine at University Towers, a la carte meal tickets may be purchased in the University Towers lobby during EMG College. The restaurant has gluten-free and vegetarian options. For unique dietary needs call University Towers Dining at 919-327-3800.

Parking

Commuters will park in the Dan Allen Parking Deck, 110 Dan Allen Drive. Charges are hourly to a maximum of \$15 per day, payable upon exit by debit and credit cards ONLY: Master Card, Visa, Discover and American Express. Over-night parking is not permitted. Please be sure to park in the designated, gated visitor parking area.

Off-Campus Hotels

No group rates have been obtained at local hotels. Hotels relatively close to the university, on Hillsborough Street, are: Double-Tree Hilton Hotel; Raleigh Brownstone; Aloft Raleigh (across from the bell tower). The Ramada Inn is on Blue Ridge Road.

Where to Register

Registration details may be found on the NCSUgarden.com, Statewide website, or use this link to go directly to the online registration site:

<http://go.ncsu.edu/EMGcollege2019>

Costs

Registration

\$135

Cancellation:

\$50 fee if cancelled before Monday, April 15, 2019.
No refund after April 15, 2019.

Room And Board At University Towers

(Parking Included)
Air-conditioned, suite
\$36 person/night/single
\$21 person/night/double

Daily Meal Plan

\$22.00 - Tax Included

À la carte Meals

Breakfast: \$6.50 - Plus Tax
Lunch: \$8.50 - Plus Tax
Dinner: \$9.25 - Plus Tax

Tours and Workshops

\$10 each payable during on-line registration.

Commuter Parking

Parking is hourly to a maximum of \$15/Day

**Registration Closes
Monday, April 15.**



Helping Gardeners
Put Knowledge To WorkSM

Speakers

Speaker's Information

Ryan Adams, Integrated Pest Management (IPM) Extension Associate, NC State University. B.S., Iowa State University; M.S. in environmental horticulture, University of Florida. For three years Mr. Adams served as the State of Iowa's turfgrass specialist. He is currently responsible for planning and implementing IPM educational field days, seminars, and regional conferences for the state of North Carolina across all NCSU's College of Agriculture and Life Science disciplines. Mr. Adams shares his knowledge and experience through print and electronic media including the IPM website, social media, and state association newsletters.

Gregory Batts, District 3 Wildlife Biologist, NC Wildlife Resources Commission, covers an 11-county area and, through land management prescriptions, deals with any animal-damage or population-level issues of wild animals on private lands.

Dr. Matt Bertone, Plant Disease Diagnostician, Department of Entomology and Plant Pathology, NC State University. B.S., Salisbury University; M.S. and Ph.D. in entomology, NC State University. Dr. Bertone identifies arthropods and other animal specimens at the NCSU Plant Disease and Insect Clinic for researchers at NCSU and other universities in North Carolina. He also prepares suitable specimens for the NCSU Insect Museum. Dr. Bertone is a regular presenter on the online *Plants, Pests, and Pathogens* webinar series for Master Gardener volunteers.

Dr. Richard Bonanno, Associate Dean, CALS, and Director, NC State University Extension

Dr. Lucy Bradley, Professor and Extension Specialist, Urban Horticulture, NC State University. M.S. in botany; Ph.D. in plant biology. Dr. Bradley was an extension consumer horticulture agent for 13 years and a certified arborist for almost 20. As a professor at NC State University she serves as an Extension Specialist in Urban Horticulture. An urban pioneer, Dr. Bradley raises fruits, vegetables, chickens, bees, dogs, fish, frogs, and a child, in Raleigh, NC. Edibles are her passion.

Holly Campbell, Extension Associate, Southern Regional Extension Forestry (SREF), Athens, Georgia. B.S.A. in horticulture; M.S. in forest resources, University of Georgia. Ms. Campbell focuses on urban forestry and wildland-fire regional programming, working closely with southern region Extension partners, the national Cohesive Fire Strategy, North Carolina University Extension, and USDA-NIFA to carry out several wildland fire projects. In 2017, SREF received a NIFA grant to develop and promote an Extension Master Gardener advanced training in fire-resistant landscaping for the southern U.S.

Dr. Nilda Cosco, Director of Programs, The Natural Learning Initiative; Research Associate Professor, College of Design, NC State University. Educational psychology, Universidad del Salvador, Buenos Aires, Argentina; Ph.D. in landscape architecture, School of Landscape Architecture, Heriot Watt University / Edinburgh University, Scotland. Dr. Cosco's responsibilities include: design, programming, and research of outdoor environments for children with and without disabilities; creation of professional development certificates for designers and educators, and coordination of state-wide comprehensive projects (design, environmental intervention, training, and evaluation) including Preventing Obesity by Design (POD). She is principal investigator (PI) for the USDA-NIFA randomized, controlled-trial Childcare Outdoor Learning Environments as Active Food Systems: Effectiveness of the Preventing Obesity by Design (POD) Gardening Component. In January 2000, Dr. Cosco, with Professor Robin Moore, founded the Natural Learning Initiative (NLI) at the College of Design, NC State University.

Debbie Dillion, Agricultural Extension Agent, Horticulture, Union County. Ms. Dillion has worked in Extension for more than 24 years in consumer horticulture. In Union County, she coordinates the Extension Master Gardener program and works with homeowners and the landscape industry. She gardens on one-third of an acre with a focus on ornamentals and vegetables.

Liz Driscoll, 4-H Specialist, Crop and Soil Science, Horticulture, Entomology, and Plant Pathology, North Carolina State University. Ms. Driscoll is a 4-H Specialist across the departments of Horticulture, Crop and Soil Sciences, Entomology and Plant Pathology at NC State and with NC Cooperative Extension. She has been working to connect youth and educators to issues in agriculture and natural resources in meaningful ways. Her “4-H Grow For It” program focuses on developing resources and experiential projects that foster curious and wondering youth, inspire critical thinking and problem solving, build a positive-science self-concept, connect kids to good food, and nurture environmental stewards of the land through gardening and agriculture.

Dr. Barbara Fair, Associate Professor, Department of Horticultural Science, NC State University, and Landscape Specialist for North Carolina. B.S. and M.S., Penn State University; Ph. D., Ohio State University. Dr. Fair provides expertise to extension faculty and the green industry, focusing extensively on issues of landscape sustainability and arboriculture. At NC State, Dr. Fair teaches Landscape Ecosystem Management, Gardening with Herbaceous Perennials, and Green Infrastructure: The Functional Use of Plants in Urban Landscapes. She is a certified arborist with an extensive arboriculture and urban forestry background.

Dr. Gina Fernandez, Professor and Extension Specialist, Department of Horticultural Science, NC State University. Dr. Fernandez grew up in Wisconsin, then received her M.S. from the University of Minnesota where she studied cold hardiness in apples. As an assistant to the breeders at the University of Arkansas, she learned about berries and heat. She received her Ph. D. on the basis of studying raspberries, and now has 22 years of experience growing small fruit in North Carolina.

Gabriella Garrison, Eastern Piedmont Habitat Conservation Coordinator for the NC Wildlife Resources Commission (NCWRC). B.S. in zoology (with a minor in forestry), NC State University; M.S. in wildlife science, Virginia Tech. Ms. Garrison works with developers, consultants, and government agencies to develop ecologically friendly technical guidance and minimize impact to wildlife in a developing landscape. In 2017, she formed the NC Pollinator Conservation Alliance (NCPA), a partnership comprising more than 25 conservation agencies and organizations that work

to promote pollinator and habitat conservation across the state.

Charlotte Glen, Statewide Coordinator for the NC Extension Master Gardener Program. Before taking this position, Ms. Glen served as an Extension horticulture agent for 18 years, during which time she worked with MGVs in Johnston, New Hanover, and Pender counties to create and maintain demonstration gardens as part of Extension’s education outreach. Her fascination with gardens as places of learning started in her grandmother’s backyard and led to internships at Longwood Gardens in Pennsylvania and Threave Gardens in Scotland. Her thesis study is on Extension’s use of demonstration gardens as teaching tools.

Dr. Chris Gunter, Extension Vegetable Specialist, Professor, NC State University. B.S. in horticulture science, Purdue University; M.S. and Ph.D. in horticulture, University of Wisconsin-Madison. Dr. Gunter works with commercial vegetable growers to maintain high quality through the use of integrated, economical, and environmentally sound production practices. Since 2007, he has focused on actively working with these growers to solve production problems through informal field visits, formal field days, and the production of research and Extension publications related to crop production. Chris is an advisory board member of the NC Greenhouse Vegetable Growers Association, the NC Vegetable Growers Association, and the NC Tomato Growers Association.

Dr. John Harrelson, Durham County Master Gardener, (Retired, Duke University School of Medicine), is an Extension Master Gardener volunteer and is especially interested in the ergonomics of safe gardening, through both professional and personal experience.

Dr. Angelique ‘Angel’ Hjarving, Director of Pollinator and Wildlife Habitat Programs, North Carolina Wildlife Federation, manages a program called the Butterfly Highway that she created as a part of her doctoral research at UNC Charlotte. The program has more than 2,000 registered pollinator pitstops including backyard gardens, parks, utility rights of way, and solar farms. The goal of the Butterfly Highway is to bring together a coalition of public and private land owners committed to protecting and conserving habitat for pollinators and wildlife across North Carolina. Dr. Hjarving is also an adjunct professor at UNC Charlotte and serves on

the boards of the Citizen Science Association and the NC Pollinator Conservation Alliance.

Dr. John Havlin, Professor, Crop and Soil Sciences, NC State University. B.S. in chemistry, Illinois State University; M.S. and Ph.D. in soil chemistry, Colorado State University. Dr. Havlin's expertise is soil fertility/chemistry, soil management, remote sensing, and viticulture. Previously, he was a Professor at Kansas State University (1983-96). He is a Fellow in the Soil Science Society of America, the American Society of Agronomy, and the National Association of College Teachers in Agriculture. He served on numerous state, regional, and national advisory boards related to nutrient management, natural resources, sustainable agriculture, and environmental quality. He was President of the Soil Science Society of America (2005) and has developed nationally recognized research and education programs in nutrient management, precision agriculture, and viticulture. He provides leadership in developing internet-based curricula in agriculture. He received numerous research, teaching, and extension awards, and is a recipient of the USDA Honor Award (2004). He has authored/co-authored 300+ technical papers, book chapters, and the internationally recognized textbook *Soil Fertility and Fertilizers*.

Julie Hayworth-Perman, Julie Hayworth-Perman is a marketing communication specialist with the College of Agriculture and Life Sciences Communications at NC State University.

Dr. Mark Hoffman, Small Fruits Extension Specialist, NC State University. Dr. Hoffman was born, raised, and educated in Germany. He holds a degree in law, and both an M.S. and Ph.D. in biology. He immigrated to the United States in 2012, working first in Florida and California before moving to NC State in 2017. His specialties are strawberry and grape production.

Will Hooker, Professor Emeritus, Department of Horticultural Science, NC State University. A registered landscape architect, Mr. Hooker taught landscape garden design for 34 years. In 1988, while riding his bicycle across the continent on a sabbatical leave, Mr. Hooker began searching for a stronger message about the importance of maintaining healthy ecosystems. He discovered permaculture, and has been practicing and teaching the tenets of this sustainable living methodology ever since.

Alexander Krings, Associate Professor/Director of the Vascular Plant Herbarium, NC State University. Dr. Krings' work focuses on plant taxonomy (including the development of applied resources that facilitate plant identification and related communication), floristics, and conservation biology.

Bryce Lane, Professor Emeritus, Department of Horticultural Science, NC State University. Mr. Lane discovered his passion for plants and telling others about them by working at a local garden center through high school and college. After earning his B.S. and M.S. in horticulture, he came to the Department of Horticultural Science at NC State University as an instructor, ultimately spending 34 years teaching and advising more than 20,000 students. For 11 seasons he hosted and produced a three-time Emmy winning, UNC TV public television show called *In the Garden With Bryce Lane*. He now spends his time giving horticulture talks, doing leadership and communication training, teaching part-time at NC State University and at JC Raulston Arboretum. He has worked closely for years with the North Carolina Nursery and Landscape Association. Bryce has gardened on the same one-quarter acre plot for 35 years.

Bridget Lassiter, Weed Specialist, NCDA&CS Plant Protection Section. B.S. in crop and soil science, M.S. in crop science; Ph.D. in agricultural education, NC State University. Dr. Lassiter is the weed specialist for the North Carolina Department of Agriculture, where she implements control programs for federal and state noxious weeds affecting the agricultural industry. She is also the director of the Witchweed Eradication Program in North Carolina. Prior to that, she worked for NC State for 14 years doing research, education and outreach about integrated pest management in peanut, turf and aquatic systems. She lives on a 3rd generation family farm in Johnston County.

Laura Lengnick, Community Resilience Partner, has explored agricultural and food system sustainability through more than 30 years of work as a federal researcher and policy-maker, college educator, community activist and farmer to understand what it takes to move sustainability values into action on the farm, in our communities and as a nation. In 2015, Laura launched Cultivating Resilience, LLC, a consulting firm offering ecosystem-based climate risk management and resilience

planning services to civil society, business, and government.

Hannah Levenson, Ph.D. Student, NC State University. Ms. Levenson is in the entomology program with a co-major in biology. Her diverse research background ranges from working on reef degradation in the Bahamas to the impacts of pesticide applications on honey bee hives in South Dakota. Currently, she is conducting a state-wide survey on native bee populations across North Carolina, with a particular focus on evaluating the impacts of conservation efforts on bee populations over time. Hannah is also working with Peace Corps volunteers to measure viruses in honey bees and native bees in rural Peru.

Sam Marshall, Horticulture Extension Agent, College of Agriculture and Life Sciences, NC State University. B.S. in environmental biology and ecology, Appalachian State University; M.S., NC State University. A native of the foothills of North Carolina, Sam works in Brunswick County as the Horticulture Agent.

Dr. Larry Mellichamp, retired Professor of Botany and Horticulture and Past Director of the Botanical Gardens at the University of North Carolina at Charlotte. Dr. Mellichamp is a world traveler and expert on plants of all kinds, especially carnivorous plants. He has written several books, including *Bizarre Botanicals* (2010 with Paula Gross) and *Native Plants of the Southeast...The Best Species for the Garden* (Timber Press, 2014). He has received several teaching and horticulture awards and was the 2016 recipient of the prestigious Tom Dodd, Jr. Plantsman Award of Excellence from the Cullowhee Native Plant Conference. His motto, not always appreciated by young students: "You learn more when you make mistakes."

Lis Meyer, Senior Lecturer, Department of Horticultural Science, NC State University. M.S., NC State University, focusing on ornamental plant breeding and propagation. Ms. Meyer teaches several plant propagation and identification courses. She serves as the adviser for the Undergraduate Certificate in Horticultural Science, Pi Alpha Xi, and the National Collegiate Landscape Competition team at NCSU.

Dr. Gary Moore, Professor Emeritus, Agriculture and Extension Education, NC State University. His courses focused on the history and philosophy of

agricultural and extension education, and the use of instructional technology. He is a member of the NCSU Academy of Outstanding Teachers.

Mike Munster, Department of Entomology and Plant Pathology, NC State University. B.S. in agronomy, University of Minnesota; M.S. in plant pathology, NC State University. Since 2009, Mike has been responsible for diagnosing diseases of ornamentals for commercial clients of the Plant Disease and Insect Clinic. He is also a regular presenter on the online *Plants, Pests, and Pathogens* webinar series for Master Gardener Volunteers.

Justin Moore is the Director of Marketing and Communications for NC State Extension.

Charles Murphy, Retired, UNC. Mr. Murphy's professional training and years of experience as a first responder have helped him become aware of possible gardening injuries and how to anticipate and prevent them.

David Orr, Associate Professor, Entomology and Plant Pathology, NC State University, provides graduate-level courses in biological control, organic agriculture, soil ecology, along with graduate seminars. He also offers undergraduate courses in agricultural, basic and general entomology. His extension activities provide printed and electronic media, presentations, and workshops related to biological control and organic agriculture.

Dr. George Place, Cooperative Extension Director, Catawba County, has been working in agricultural extension for more than 18 years. He is the Master Gardener Coordinator in Catawba County. He and his wife are also avid homestead gardeners.

Dr. Lori Shapiro, Post-Doctoral Research Associate, Applied Ecology, NC State University. B.S. in entomology, University of Georgia; Ph.D. in entomology, Pennsylvania State University. Dr. Shapiro has spent her career studying ecological interactions between cucurbits (pumpkins, gourds, zucchini, squash), insects, and microbes. Most recently, she has been working on global biodiversity of Cucurbitaceae.

Rhonda Sherman, Extension Specialist, Horticultural Science, NC State University, is a leading authority on vermicomposting and organizes the world's only annual conference on large-scale

commercial vermicomposting. Ms. Sherman is the founder and director of a two-acre Compost Learning Lab (CL2) at NC State's 1,500-acre Lake Wheeler Road Field Laboratory. She has taught composting and vermicomposting in Guyana, the Dominican Republic, Argentina, Chile, and throughout the United States. She has authored more than 65 publications on vermicomposting, composting, recycling, and waste reduction.

Dr. Michael Waldvogel, Extension Associate Professor, Department of Entomology and Plant Pathology, NC State University, where he has served on the faculty for more than 29 years. Dr. Waldvogel's Extension responsibilities focus primarily on structural and industrial pest problems including cockroaches, mosquitoes, termites, and rodents. Most of his field studies have involved testing new insecticides for use against termites. He also teaches in the College of Agricultural and Life Sciences' two-year Agricultural Institute program.

Mark Weathington, Director, JC Raulston Arboretum at NC State University. Mr. Weathington is passionate in his work to connect people with plants. His latest book, *Gardening in the South: The Complete Homeowners Guide*, takes his common-sense approach and a bit of humor and makes gardening accessible for any level of gardener. He travels extensively searching for new plants to diversify the American landscape and lecturing on a variety of topics in horticulture to further the JC Raulston Arboretum's vision of "Planning and Planting a Better World. He has revised and updated the *Propagation Guide for Woody Plants* at the JC Raulston Arboretum and has been published in *Fine Gardening*, *Horticulture*, *Carolina Gardener*, *American Nurseryman*, *VA Gardener*, and *HortScience* magazines as well as *The Mid-Atlantic Gardener's Book of Lists*. Mr. Weathington previously served as Director of

Horticulture and Facilities for the Atlanta Botanical Garden.

Mitch Woodward, Area Specialist Agent, Water Quality, NC Cooperative Extension. Mitch has more than 36 years of water quality protection experience. He has worked on non-point-source water quality issues for the DuPont Company, University of Maryland, Pennsylvania State University, and the United States Department of Agriculture. Mitch has been the Area Specialized Agent — watersheds and water quality — for North Carolina Cooperative Extension for the past 22 years, delivering 20-25 educational workshops annually on low- impact development, urban stormwater control practices, and water quality protection. Mitch has assisted Cooperative Extension's local town, city, county, and state partners in installing more than 300 urban stormwater control systems in NC, GA, SC, OR, TN, KY, and AL including innovative water harvesting, bioretention, streambank repair, and residential raingardens.

Elsa Youngsteadt, Assistant Professor of Applied Ecology, NC State University, where she studies the effects of urbanization and climate change on insect ecology. After completing her Ph. D. in entomology at NC State, she worked as a science writer and editor for *American Scientist* magazine, then returned to research in 2012. Since then, she has published research on topics ranging from ants in New York City (and how much garbage they eat) to whether Venus flytrap traps its own pollinators.

Accommodation requests related to a disability should be made by April 15, 2019 to Charlotte Glen, at 919-515-1226 or cdglen@ncsu.edu.

NC STATE

EXTENSION

NC State University is committed to positive action to secure equal opportunity and prohibit discrimination and harassment regardless of age, color, disability, family and marital status, gender identity, genetic information, national origin, political beliefs, race, religion, sex (including pregnancy), sexual orientation and veteran status