

**NC STATE**

Extension Master Gardener

# **Extension Master Gardener<sup>SM</sup> College**

Celebrating 40 Years of

*Helping Gardeners Put Knowledge to Work*

**NC State University**

**June 6 – 9, 2019**



**NC STATE**

## Extension Master Gardener 2019 Search for Excellence

Search for Excellence (SFE) is the recognition program of Master Gardener<sup>SM</sup> volunteer (MGV) work throughout North Carolina. The awards program recognizes outstanding educational, group projects that result in significant learning within each of the seven categories listed below.

An overall winner from each category will be announced during the Search for Excellence Awards Recognition that will be held Saturday, June 8, from 11:15 am to noon, in Bostian 3712. MGV groups with a winning project will receive a \$200 award to support their county program!

### **Congratulations to all MGV groups who entered!**

#### **Community Service**

Cabarrus County – “Digging in the Dirt” County Fair Booth  
Lincoln County – Jonas Library Garden Rescue

#### **Demonstration Garden**

Caldwell County – Unity Park and Community Gardens  
Durham County – Cistern Drip Irrigation Project  
Harnett County – Bird Paradise Garden  
Warren County – Raised Bed Pollinator Garden  
Wilson County – Wilson Botanical Gardens STEM Garden

#### **Innovative Project**

Brunswick County – Homeowner Pesticide Fact Sheets  
Chatham County – “Helping Your Garden Grow” Newcomer’s Guide  
Currituck County – Updating EMG Training Materials

#### **Special Needs Audiences**

Cabarrus – Stonewall Jackson Horticulture Project

#### **Workshop or Presentation**

Watauga – Advanced Landscape Design Workshop

#### **Youth Programs**

Buncombe County – Day Camp Garden Week  
Henderson – 4-H Mini Gardens  
Pender – Marigolds for Schools

#### **Research**

No entries



EXTENSION **MASTER GARDENER**  
ENDOWMENT

Search for Excellence awards are funded by interest income from the NC Extension Master Gardener Endowment. Learn more:  
[go.ncsu.edu/ncemge](http://go.ncsu.edu/ncemge)

Welcome to

## NC Extension Master Gardener College 2019



Thank you for joining us at NC State University for the 2019 NC Extension Master Gardener College! We are excited that you have selected this opportunity for outstanding advanced training. We hope that you will both gain new knowledge to share in your communities AND create new lasting friendships with Extension Master Gardener volunteers from across North Carolina. We wish you an enlightening and fun experience at the NC Extension Master Gardener College!

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### Extension Master Gardener College Planning Team

Matt Jones, Horticulture Extension Agent, Chatham County, Planning Team Chair  
Charlotte Glen, State Coordinator, NC Extension Master Gardener Program  
Debbie Dillion, Horticulture Extension Agent, Union County  
Julie Flowers, Horticulture Extension Agent, Gaston and Cleveland Counties  
Gene Fox, Horticulture Extension Agent, Beaufort, Hyde, Tyrrell, and Washington Counties  
Selena McKoy, Horticulture Extension Agent, Harnett County  
Kat Causey, EMGV, Durham County  
Anna Culler, EMGV, Lee County  
Floy Hamilton, EMGV, Harnett County  
Kathryn Hamilton, EMGV, Durham County  
Brenda Rambach, EMGV, Guilford County

## Schedule at a Glance

CC By-SA3.0

<b><i>Wednesday</i></b> <b><i>June 5</i></b>	<b><i>Thursday</i></b> <b><i>June 6</i></b>	<b><i>Friday</i></b> <b><i>June 7</i></b>	<b><i>Saturday</i></b> <b><i>June 8</i></b>	<b><i>Sunday</i></b> <b><i>June 9</i></b>
<b>4:00 - 8:00 pm</b> College Registration	<b>7:00 - 9:00 am</b> Breakfast	<b>7:00 - 9:00 am</b> Breakfast	<b>7:00 - 9:00 am</b> Breakfast	Breakfast on your own
Dinner on your own	<b>7:30 - 9:00 am</b> College Registration	<b>7:30 - 9:00 am</b> College Registration	<b>9:00 - 9:30 am</b> Welcome from Extension	<b>7:00 - 11:00 am</b> Check-out
If you are staying at University Towers, please check-in on arrival at the registration desk for your room assignment.	<b>9:30 - Noon</b> Tours and Workshops	<b>9:00 - 10:00 am</b> Official NC EMG College Kickoff	<b>9:30 - 11:00 am</b> Keynote 2	On-your-own visit to NC State Farmers' Market and local attractions
	<b>12:00 - 1:00 pm</b> Lunch	<b>10:00 - 10:30 am</b> Break	<b>11:00 - 11:15 am</b> Break	
	<b>1:30 - 4:30 pm</b> Tours and Workshops	<b>10:30 am - Noon</b> Keynote 1	<b>11:15 am - Noon</b> Search for Excellence	
	<b>1:30 - 4:30 pm</b> Agent Training	<b>12:00 - 1:00 pm</b> Lunch	<b>12:00 - 1:00 pm</b> Lunch	
	<b>4:00 - 8:00 pm</b> College Registration	<b>1:30 - 3:00 pm</b> Concurrent Sessions	<b>1:30 - 3:00 pm</b> Concurrent Sessions	
	<b>4:45 - 5:45 pm</b> NCEMGVA Annual Business Meeting	<b>3:00 - 3:30 pm</b> Break	<b>3:00 - 3:30 pm</b> Break	
	<b>6:00 - 7:00 PM</b> Dinner	<b>3:30 - 5:00 pm</b> Concurrent Sessions	<b>3:30 - 4:45 pm</b> Keynote 3	
		<b>5:30 - 7:00 PM</b> Dinner	<b>5:00 - 6:00 pm</b> Dinner	
		<b>6:30 - 8:00 pm</b> Volunteer Recognition and Howling Cow Ice Cream Social	<b>6:30 - 8:30 pm</b> JC Raulston Arboretum Tour	

### Please Note!

Meals will be served in University Towers dining hall. If you did not purchase a meal plan during registration, individual meals may be purchased at the UT front desk (prices include tax):

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

## Keynote Speakers



Keynote 1: Friday, 10:30—noon

### ***Growing Plants, Growing People: Land Grant Colleges, the Extension Service, and Master Gardeners***

#### **Dr. Gary Moore, Professor Emeritus, NC State University**

Dr. Gary Moore is a retired Professor of Agriculture and Extension Education at North Carolina State University (NCSU). He taught courses that 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.

Keynote 2: Saturday 9:30—11:00 am

### ***Why Garden with Natives?***



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

Dr. Larry Mellichamp is the recently retired Professor of Botany and Horticulture and was director of the Botanical Gardens at the University of North Carolina at Charlotte. Larry 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. He lives with his family in Charlotte, NC where he gardens, typically killing more plants than not. His motto, not always appreciated by young students: you learn more when you make mistakes.

Keynote 3: Saturday 3:30—4:45 pm

### ***Beyond Tire Planters: Gardening in the South***



#### **Mark Weathington, Director, JC Raulston Arboretum**

Mark Weathington is the director of the JC Raulston Arboretum at NC State University where he is passionate in his work to connect people with plants. His latest book, *Gardening in the South: The Complete Homeowner's Guide*, takes his common sense approach and a bit of humor and makes gardening accessible for any level of gardener.

Mark 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." His explorations and speaking engagements have taken him to China, Taiwan, Japan, South Korea, Ecuador, Europe, Mexico, New Zealand, and throughout the US.

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*.

Mark previously served as Director of Horticulture and Facilities at the Norfolk Botanical Garden and as a horticulturist for the Atlanta Botanical Garden.

## Wednesday, June 5

On Arrival	<b>Room Check In</b>	University Towers Lobby
4:00—8:00 pm	<b>College Registration</b>	University Towers Lobby
Evening	<b>Dinner on your Own</b>	

## Thursday, June 6

7:00—9:00 am	<b>Breakfast</b>	University Towers Dining Hall
7:30—9:00 am	<b>College Registration</b>	University Towers Lobby
	<b>Workshops and Tours AM</b>	
9:00 am—Noon	<b>Bryce Lane's Gardens</b> —Bryce Lane	University Towers Main (North) Entrance - Load Bus
9:00 am—Noon	<b>Composting and Vermicomposting</b> —Rhonda Sherman	University Towers Main (North) Entrance - Load Bus
9:00 am—Noon	<b>Digging Deep with "Junior Master Gardener"</b> —Liz Driscoll	Kilgore 121
9:00 am—Noon	<b>Interpreting Soil Test Reports to Improve Nutrient Management</b> —Dr. John Havlin	Fox 206
9:00 am—Noon	<b>Landscapes that Protect Water Quality: Small Scale Solutions</b> —Mitch Woodward	University Towers Main (North) Entrance - Load Bus
9:00 am—Noon	<b>NCDA Agronomic Labs</b> —Lab Staff	University Towers Main (North) Entrance - Load Bus
12:00—1:00 pm	<b>Lunch</b>	
	<b>Workshops / Tours / Events PM</b>	
1:30—4:30 pm	<b>Diagnostic Workshop for Master Gardener Volunteers</b> — Dr. Matt Bertone, Mike Munster	Gardner 1418
1:30—4:30 pm	<b>Extension Agent Training</b>	Gardner 2213
1:30—4:30 pm	<b>The Evolution of Pest Resistance</b> —Ryan Adams	Fox 206
1:30—4:30 pm	<b>NCDA Agronomic Labs</b> —Lab Staff	University Towers Main (North) Entrance - Load Bus
1:30—3:00 pm	<b>Permaculture at 610 Kirby Street</b> —Will Hooker	University Towers Main (North) Entrance - Load Bus
1:30—4:30 pm	<b>Plant Identification</b> —Dr. Alexander Krings	Bostian 4707
1:30—4:30 pm	<b>Plant Propagation Techniques</b> —Lis Meyer	Fox B21
1:30—4:30 pm	<b>Pollinator Conservation in North Carolina</b> —Gabriela Garrison, Angel Hjarding, Elsa Youngsteadt, Hanna Levenson	Fox 306
3:30—5:00 pm	<b>Permaculture at 610 Kirby Street</b> —Will Hooker (Tour)	University Towers Main (North) Entrance - Load Bus
4:00—8:00 pm	<b>College Registration</b>	University Towers Lobby
4:45—5:45 pm	<b>NCEMGVA Annual Business Meeting</b>	Fox 104
6:00—7:00 pm	<b>Dinner</b>	University Towers Dining Hall



## Friday, June 7

7:00—9:00 am	<b>Breakfast</b>	University Towers Dining Hall
7:30—9:00 am	<b>College Registration</b>	University Towers Lobby
	<b>Welcome &amp; Kickoff</b>	
9:00 am—10:00 am	<b>Official College Kickoff</b> —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, and EMG College Chair	Bostian 3712
10:00 am—10:30 am	<b>Break</b>	Bostian (2nd floor breezeway)
10:30 am—noon	<b>Keynote 1: "Growing Plants, Growing People: Land Grant Colleges, the Extension Service, and Master Gardener Volunteers"</b> —Dr. Gary Moore, Professor Emeritus, NC State University	Bostian 3712
12:00—1:00 pm	<b>Lunch</b>	University Towers Dining Hall
1:30—3:00 pm	<b>Basics of Strawberry Production</b> —Dr. Mark Hoffman	Fox 306
1:30—3:00 pm	<b>Caneberry Production for the Home Gardener</b> —Dr. Gina Fernandez	Fox 204
1:30—3:00 pm	<b>Celebrating Place, Cultivating Resilience</b> —Laura Lengnick	Gardner 2213
1:30—3:00 pm	<b>Ergonomics for Gardeners</b> —Dr. John Harrelson and Charles Murphy	Nelson 1212
1:30—3:00 pm	<b>Invasive Ants</b> —Dr. Michael Waldvogel	Fox 206
1:30—3:00 pm	<b>Let's Talk Tomatoes</b> —Dr. Chris Gunter	Nelson 1140
1:30—3:00 pm	<b>Meadow Gardens for Carolina Landscapes</b> —Sam Marshall	Nelson 1206
1:30—3:00 pm	<b>Natural and Biological Pest Control in the Home Garden and Landscape</b> —Dr. David Orr	Nelson 1150
3:00—3:30 pm	<b>Break</b>	Fox Lobby
3:30—5:00 pm	<b>Basics of Grape Production in North Carolina</b> —Dr. Mark Hoffman	Fox 306
3:30—5:00 pm	<b>Creating Outdoor Learning Environments for Early-Childhood Healthy Development</b> —Dr. Nilda G. Cosco	Fox 204
3:30—5:00 pm	<b>Effective Presentations</b> —Bryce Lane	Nelson 1150
3:30—5:00 pm	<b>Global Diversity of Cucurbits</b> — Lori Shapiro	Nelson 1212
3:30—5:00 pm	<b>Mosquitos: Biology and Management</b> —Dr. Michael Waldvogel	Fox 206
3:30—5:00 pm	<b>Season Extension</b> —Debbie Dillion	Nelson 1140
3:30—5:00 pm	<b>Upping your Blog Game</b> —Justin Moore	Gardner 2213
3:30—5:00 pm	<b>Where the Wild Things Are: Larval Host Plants for Butterflies and Moths</b> —Sam Marshall	Nelson 1206
5:30—7:00 pm	<b>Dinner</b>	University Towers Dining Hall
6:30—8:00 pm	<b>Volunteer Recognition and Howling Cow Ice Cream Social</b>	Talley Student Union

## Saturday, June 8

7:00—9:00 am	<b>Breakfast</b>	University Towers Dining Hall
9:00—9:30 am	<b>Welcome from Extension</b> —Dr. Richard Bonanno, Associate Dean, College of Agriculture and Life Sciences and Director, NC State Extension	Bostian 3712
9:30—11:00 am	<b>Keynote 2: "Why Garden with Natives"</b> —Dr. Larry Mellichamp, Director, UNC Charlotte Botanical Gardens (Ret.)	Bostian 3712
11:00 am—11:15 am	<b>Break</b>	Bostian (2nd floor breezeway)
11:15 am—Noon	<b>Search for Excellence Awards Recognition</b>	Bostian 3712
12:00—1:00 pm	<b>Lunch</b>	University Towers Dining Hall
1:30—3:00 pm	<b>Get More from Your Demonstration Garden</b> —Charlotte Glen	Nelson 2402
1:30—3:00 pm	<b>Giant Hogweed, Purple Loosestrife and Floating Heart, "Oh My!"</b> —Dr. Bridget Lassiter	Nelson 1140
1:30—3:00 pm	<b>Nuisance Wildlife</b> —Greg Batts	Nelson 2403
1:30—3:00 pm	<b>Organic Gardening: Critical Steps for Fertility, Insect, Weed, and Disease Management</b> —Dr. George Place	Nelson 1206
1:30—3:00 pm	<b>Permaculture: A Sustainable Living Methodology for the Home, Garden, and Community</b> —Will Hooker	Nelson 1212
1:30—3:00 pm	<b>Successful Tree Planting</b> —Dr. Barbara Fair	Kilgore 121
1:30—3:00 pm	<b>You Can Have Your Garden and Eat it Too!</b> —Dr. Lucy Bradley	Nelson 1150
3:00—3:30 pm	<b>Break</b>	Bostian (2nd floor breezeway)
3:30—4:45 pm	<b>Keynote 3: "Beyond Tire Planters: Gardening in the South"</b> —Mark Weathington, Director, JC Raulston Arboretum	Bostian 3712
5:00—6:00 pm	<b>Dinner</b>	University Towers Dining Hall
6:30—8:30 pm	<b>JC Raulston Arboretum Tour</b>	University Towers Main (North) Entrance - Load Bus

## Sunday, June 9

	<b>Breakfast</b>	<b>On Your Own</b>
7:00—11:00 am	<b>Check Out</b>	University Towers Lobby
	<b>Visit to NC State Farmers' Market</b>	On Your Own

## Thank you to ...

Our sponsors, Bioadvanced®, Black Kow®, and I Must Garden, for their generous financial support, and to and the NC Extension Master Gardener Volunteer Association for their help securing these sponsors.

Beda Trenning-Helms, Master Gardener volunteer in Union County for nearly 20 years, who created the watercolor and colored pencil design for our cover.

North Carolina Cooperative Extension, the NC State College of Agriculture and Life Sciences, the NC State Department of Horticultural Science, The Plant Disease and Insect Clinic, and the J. C. Raulston Arboretum.

and everyone whose time, expertise and contributions helped to make the 2019 Extension Master Gardener College a success, including all Extension Agents and Master Gardener volunteers who attended.



## Speakers

**Ryan Adams**, Integrated Pest Management (IPM) Extension Associate, NC State University.

**Gregory Batts**, District 3 Wildlife Biologist, NC Wildlife Resources Commission.

**Dr. Matt Bertone**, Plant Disease Diagnostician, Department of Entomology and Plant Pathology, NC State University.

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

**Dr. Lucy Bradley**, Professor and Extension Specialist, Urban Horticulture, NC State University.

**Holly Campbell**, Extension Associate, Southern Regional Extension Forestry (SREF), Athens, Georgia.

**Dr. Nilda Cosco**, Director of Programs, The Natural Learning Initiative; Research Associate Professor, College of Design, NC State University.

**Debbie Dillion**, Agricultural Extension Agent, Horticulture, Union County.

**Liz Driscoll**, 4-H Specialist, Crop and Soil Science, Horticulture, Entomology, and Plant Pathology, North Carolina State University.

**Dr. Barbara Fair**, Associate Professor, Department of Horticultural Science, NC State University, and Landscape Specialist for North Carolina.

**Dr. Gina Fernandez**, Professor and Extension Specialist, Department of Horticultural Science, NC State University.

**Gabriella Garrison**, Eastern Piedmont Habitat Conservation Coordinator for the NC Wildlife Resources Commission (NCWRC).

**Charlotte Glen**, Statewide Coordinator for the NC Extension Master Gardener Program.

**Dr. Chris Gunter**, Extension Vegetable Specialist, Professor, NC State University.

**Dr. John Harrelson**, Durham County Master Gardener, (Retired, Duke University School of Medicine).

**Dr. Angelique 'Angel' Hjarding**, Director of Pollinator and Wildlife Habitat Programs, North Carolina Wildlife Federation.

**Dr. John Havlin**, Professor, Crop and Soil Sciences, NC State University.

**Julie Hayworth-Perman**, College of Agriculture and Life Sciences Communications at NC State University.

**Dr. Mark Hoffman**, Small Fruits Extension Specialist, NC State University.

**Will Hooker**, Professor Emeritus, Department of Horticultural Science, NC State University.

**Alexander Krings**, Associate Professor/Director of the Vascular Plant Herbarium, NC State University.

**Bryce Lane**, Professor Emeritus, Department of Horticultural Science, NC State University.

**Dr. Bridget Lassiter**, Weed Specialist, NCDA&CS Plant Protection Section.

**Laura Lengnick**, Community Resilience Partner,

**Hannah Levenson**, Ph.D. Student, NC State University.

**Sam Marshall**, Horticulture Extension Agent, Brunswick Co.

**Dr. Larry Mellichamp**, retired Professor of Botany and Horticulture and Past Director of the Botanical Gardens at the University of North Carolina at Charlotte.

**Lis Meyer**, Senior Lecturer, Department of Horticultural Science, NC State University.

**Dr. Gary Moore**, Professor Emeritus, Agriculture and Extension Education, NC State University.

**Mike Munster**, Department of Entomology and Plant Pathology, NC State University.

**Justin Moore**, Director of Marketing and Communications for NC State Extension.

**Charles Murphy**, Retired, UNC.

**David Orr**, Associate Professor, Entomology and Plant Pathology, NC State University.

**Dr. George Place**, Cooperative Extension Director, Catawba County.

**Dr. Lori Shapiro**, Post-Doctoral Research Associate, Applied Ecology, NC State University.

**Rhonda Sherman**, Extension Specialist, Horticultural Science, NC State University.

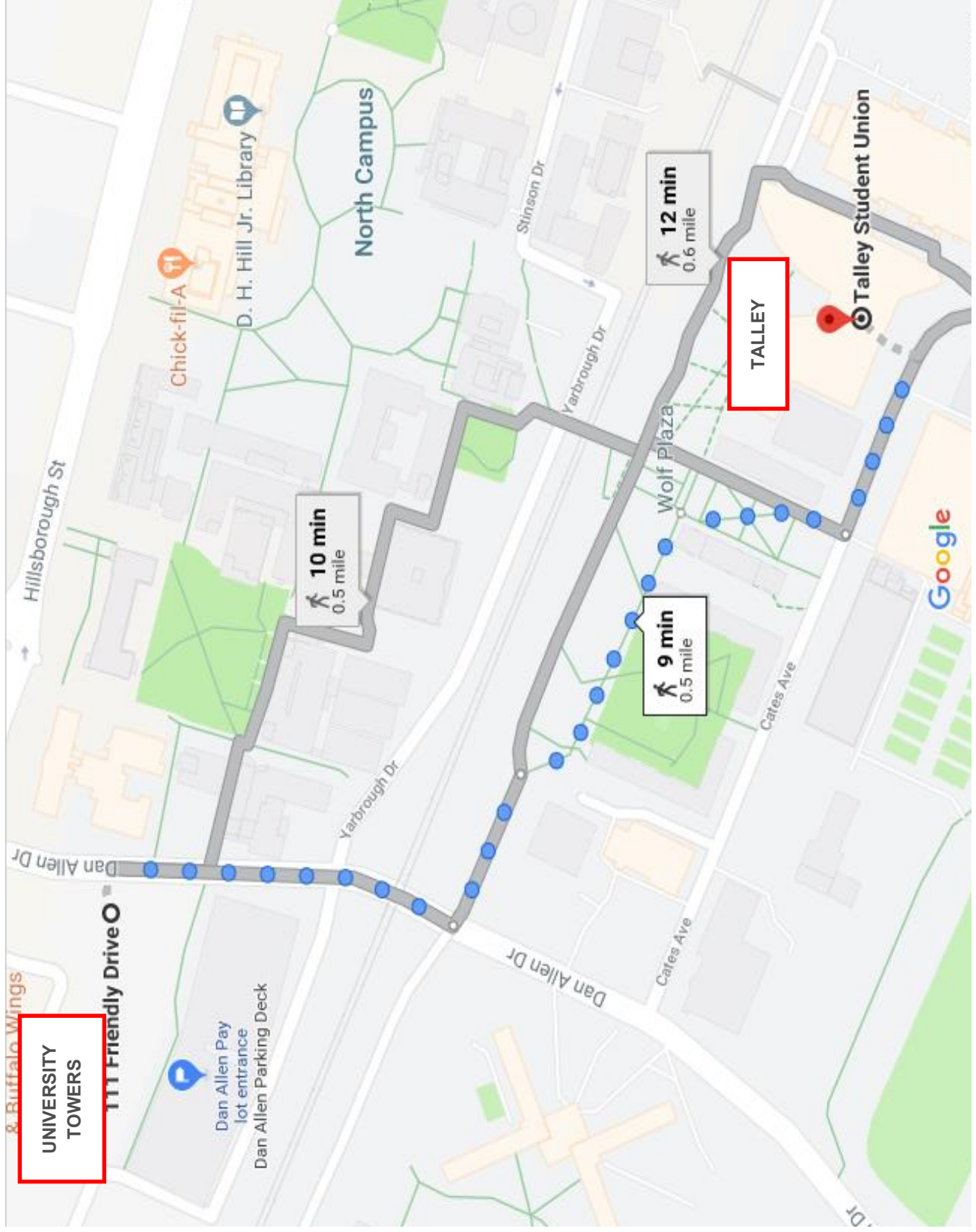
**Dr. Michael Waldvogel**, Extension Associate Professor, Department of Entomology and Plant Pathology, NC State University.

**Mark Weathington**, Director, JC Raulston Arboretum at NC State University.

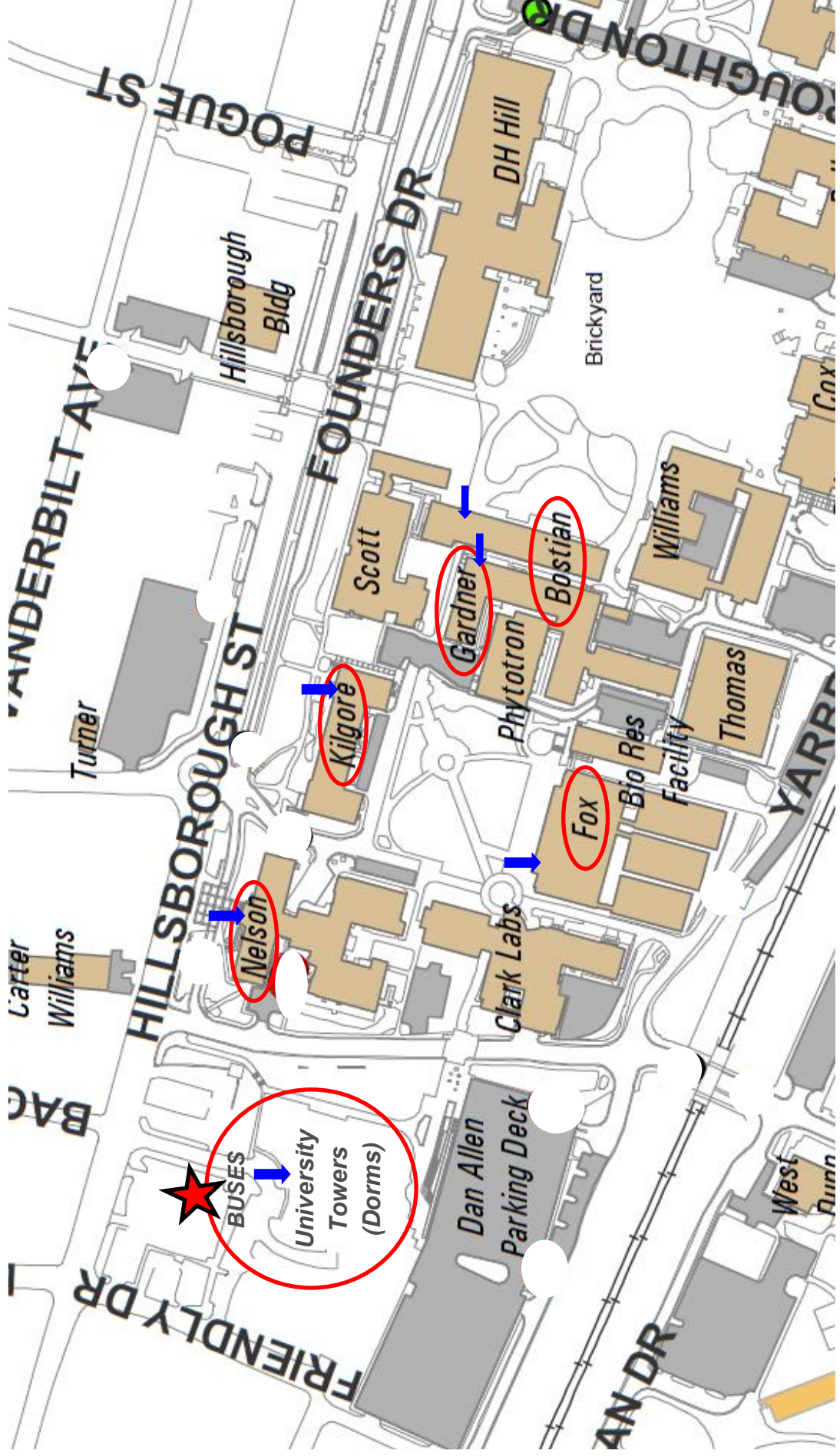
**Mitch Woodward**, Area Specialist Agent, Water Quality, NC Cooperative Extension.

**Elsa Youngsteadt**, Assistant Professor of Applied Ecology, NC State University.

# How to Get to Talley Student Union (Friday Evening Ice Cream Social)



## Classroom Locations



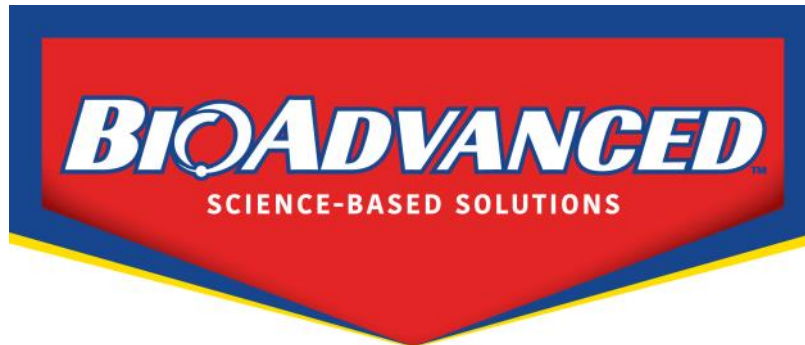
Blue arrows indicate building main entrances

Walk time: 5-7 minutes from University Towers to Bostian



# Many Thanks to Our Sponsors!

**Gold: \$1,000**



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**Bronze: \$250**



**In Kind**

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