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<b>EDUCATION TRACKS</b>	<b>IRRIGATION</b> Coordinated by the Carolinas Irrigation Association	<b>LANDSCAPE OPERATIONS</b>	<b>URBAN FORESTRY &amp; ARBORICULTURE</b> Coordinated by the North Carolina Urban Forest Council	<b>TURF MANAGEMENT</b> Coordinated by the North Carolina Sod Producers Association	
<b>Location</b>	<b>Auditorium II</b>	<b>Guilford D</b>	<b>Guilford E</b>	<b>Guilford FG</b>	
8:30-9:20 AM	<b>Defining Your Value Proposition, Discovering Your Path to Productive Solutions</b> <i>Chris Keating, The Toro Company</i>  APPROVED	<b>Business Tax in 4 Steps</b> <i>Shiloh Johnson, ComplyAnt</i>  APPROVED	<b>Pick it Right - Plant it Right = Successful Projects</b> <i>Dr. Barbara Fair, NCSU</i>  PENDING  APPROVED	<b>Using www.turffiles.ncsu.edu and Extension Publications</b> <i>Dr. Grady Miller, NCSU</i>  APPROVED	
9:30-10:20 AM	<b>Regulations Regulating Regulation</b> <i>Chris Keating, The Toro Company</i>  PENDING  APPROVED	<b>Hardscaping Options and Selections</b> <i>Erik Hagen, SiteOne</i>  APPROVED	<b>Soil Moisture: Top Factor For Newly Planted Tree Survival</b> <i>Dr. Wei Zhang, Zynnovation, LLC</i> <i>Dan Whitehead, Hortsource</i>  PENDING  APPROVED	<b>Managing Insect Pests in Warm and Cool Season Turf using IPM Techniques</b> <i>Terri Billeisen, NCSU</i>  APPROVED	
10:30-11:20 AM	<b>What Do You Mean Drip Irrigation is Inefficient?</b> <i>Kurt Thompson, K. Thompson &amp; Associates, LLC</i>  PENDING  APPROVED	<b>The Basics and Necessities of Business Contracts</b> <i>Eric Jones, Turf Teacher</i>  APPROVED	<b>ABCs of Young &amp; Small Tree Pruning</b> <i>Andy Pleninger, NC Forest Service</i>  PENDING  APPROVED	<b>Identification and Management of Difficult Landscape Turf Weeds</b> <i>Fred Yelverton, NCSU</i>  APPROVED	
11:30 AM-12:50 PM	<b>11:30 AM-12:00 PM — Lunch • 12:00-12:50 PM — Keynote</b> <b>Kim Eierman, Founder of EcoBeneficial LLC</b> <b>Taking Landscapes to the Next Level: From Leveraging Ecosystem Services to Changing Cultural Norms</b> (LC-1, LA - 0.83, ISA-Certified Arborist: 0.75, BCMA Management: 0.75, NALP-1, SAF- 0.50 Cat. 2, CPP-1)  APPROVED With increasing development and diminishing natural areas, our landscapes have become the final frontier for environmental improvement. Learn the latest strategies to take any landscape to the next level. Enhancing biodiversity, emulating natural systems, leveraging ecosystem services, mitigating the impacts of climate change, storing more carbon, utilizing informed plant selection techniques, and using cues to care, are some of the strategies Kim Eierman will share.				
1:00-1:50 PM	<b>Grounding and Lightning Protection for Irrigation Systems</b> <i>Kurt Thompson, K. Thompson &amp; Associates, LLC</i>  PENDING  APPROVED	<b>Perennial Combos for Every Season</b> <i>Shannon Currey, Izel Native Plants</i> <i>Kata Kress Wallace, Walters Gardens Inc.</i>  APPROVED	<b>The Past, Present, Future, and Alternatives for Neonicotinoid Insecticides</b> <i>Patrick Anderson, Rainbow Ecoscience</i>  PENDING  APPROVED	<b>Advanced Disease Management in Turfgrass Landscapes</b> <i>Jim Kerns, NCSU</i>  APPROVED	
2:00-2:50 PM	<b>Working Smarter Not Harder</b> <i>Jed Birch, Smith Turf &amp; Irrigation</i>  PENDING  APPROVED	<b>Soil Oxygen, or Lack of, is The Difference Maker of Your Soil</b> <i>Dr. Wei Zhang, Zynnovation, LLC</i>  APPROVED	<b>Preventing Tree Loss Before, During and After Construction</b> <i>Ellen LeBrun, Bartlett Tree Experts</i>  PENDING  APPROVED	<b>New Challenges and Changes Ahead with Turf Pesticides</b> <i>Travis Gannon, NCSU</i>  APPROVED	
3:00-3:50 PM	<b>Why is Remote Management a Crucial Tool to Add to Your Business?</b> <i>Greg Goudeau, HydroPoint Data Systems</i>  PENDING  APPROVED	<b>Ornamental Plant Breeding: Benefits for Growers and Landscapers</b> <i>Dr. Hsuan Chen, NCSU</i>  APPROVED	<b>Spotted Lantern Fly, the New Pest on the Block</b> <i>Patrick Anderson, Rainbow Ecoscience</i>  PENDING  APPROVED	<b>Annual Management Strategies for Cool and Warm Season Turf Pests</b> <i>Matt Martin, NCSU</i>  APPROVED	

**Professional Credits (CEU) Key** Attend the sessions of your choice to earn continuing education credits toward state or national accreditations. Look for the icons below.

-  **LC** Landscape Contractor License (NC) — Technical CEU
-  **LCB** Landscape Contractor License (NC) — Business CEU
-  **LA** Landscape Architect License (NC)

-  **IC** Irrigation Contractor License (NC) — Technical Irrigation CEU
-  **ICB** Irrigation Contractor License (NC) — Business CEU
-  **PA** Pesticide Applicator License (NC)

-  **ISA** International Society of Arboriculture — Certified Arborist
-  **NALP** National Association of Landscape Professionals — Landscape Industry Certified
-  **SAF** Society of American Foresters — Certified Forester
-  **CPP** Certified Plant Professional

**Earn CEUs when you walk the Marketplace floor:**  
 (1)  (2)

## IRRIGATION

Coordinated by the Carolinas Irrigation Association



8:30 AM – 9:20 AM

### Defining Your Value Proposition, Discovering Your Path to Productive Solutions



Chris Keating, The Toro Company

(Approved: LCB-1, ICB-1, NALP-1, SAF-0.50 Cat. 2, CPP-1)

This class will help each individual contractor determine what is unique about their company and employees. It will help them understand that much of what we do is driven by habit and not actual planning. I will help them understand how to position their company in their market for maximum opportunity. The class also covers how to be an effective leader which is essential to creating a culture of success.

9:30 AM – 10:20 AM

### Regulations Regulating Regulation



Chris Keating, The Toro Company

(Pending: LA; Approved: ICB-1, NALP-1, SAF-0.50 Cat. 2, CPP-1)

This class will explain and raise awareness of the recent laws sweeping the country that ban the manufacture, sale and installation of conventional spray heads. The laws mandate the use of spray heads with built in pressure regulation. The class will cover the reasons for the laws and explain the purpose of the technology and why it is deemed necessary.

10:30 AM – 11:20 AM

### What Do You Mean Drip Irrigation is Inefficient?



Kurt Thompson, K. Thompson & Associates, LLC

(Pending: LA; Approved: ICB-1, NALP-1, CPP-1)

While the belief that drip emitters apply water at the highest uniformity of any standard irrigation emission device is accurate, connecting that to the efficiency of drip emitters is not valid. In fact, the efficiency of many, if not most, drip zones in landscape beds is not any better than traditional overhead irrigation. This is mostly the result of not being aware of the science of drip irrigation during design and installation and the neglect of maintaining the components and adjusting the scheduling. Designers, contractors, or managers will understand that uniformity and efficiency while related, are two distinctly different measurements and how they are measured.

1:00 PM – 1:50 PM

### Grounding and Lighting Protection for Irrigation Systems



Kurt Thompson, K. Thompson & Associates, LLC

(Pending: LA; Approved: ICB-1, NALP-1, CPP-1)

Protecting the electrical components in an irrigation system has much different requirements than protection for people and property. Relying on the grounding of a building is not enough defense against the common transient voltage spikes or the super high voltage and frequency of lightning strikes to which an irrigation system is exposed. Learn the physical properties of lightning and electrical surges as well as the industry best practices to provide protection for controllers, wire, decoders, and solenoids.

2:00 PM – 2:50 PM

### Working Smarter Not Harder



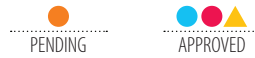
Jed Birch, Smith Turf & Irrigation

(Pending: LA; Approved: ICB-1, NALP-1, CPP-1)

Learn how incorporating Wi-Fi and cell access to controllers can be your most valuable resource. We will discuss the newest products that will work on any size system to make your life easier out in the field. These enhancements will also help you manage water usage without having to leave the comfort of your office.

3:00 PM – 3:50 PM

### Why is Remote Management a Crucial Tool to Add to Your Business



Greg Goudeau, HydroPoint Data Systems

(Pending: LA; Approved: ICB-1, NALP-1, CPP-1)

Managing water and providing outstanding service to your customers requires being where the water is. Since you can't physically be there on a 24x7 basis, an irrigation central control is the next best thing. You'll save time and money, and more effectively manage water and your team.

## LANDSCAPE OPERATIONS

8:30 AM – 9:20 AM

### Business Tax in 4 Steps



Shiloh Johnson, ComplYant

(Approved: LCB-1, ICB-1, NALP-1, SAF-0.50 Cat. 2, CPP-1)

Ever felt totally lost when it comes to your business taxes? Join us for this easy-to-follow guide on all things tax-related so you never have to pay a late fee or worry about an audit again. We'll cover things like setting up your business for future tax success, different types of tax you didn't know you were responsible for, saving for upcoming tax bills and more.

9:30 AM – 10:20 AM

### Hardscaping Options and Selections



Erik Hagen, SiteOne

(Approved: LC-1, LA-0.83, NALP-1, CPP-1)

In today's hardscaping marketplace, there are a variety of options for homeowners to choose from. Whether it's paving slabs or pavers, segmental retaining walls or concrete masonry walls, the combinations are endless. In this class, we will outline the different types of materials available, when they should be used and what benefits each provide. Participants will leave with an understanding of which material will work best for each type of project, based on the project scope, homeowner budget and project timelines.

10:30 AM – 11:20 AM

### The Basics and Necessities of Business Contracts



Eric Jones, TurfTeacher

(Approved: LCB-1, ICB-1, NALP-1, SAF-0.50 Cat. 2, CPP-1)

Protect your business by ensuring all your projects are properly contracted. This course will define the 19 sections of a service agreement contract and the different attachments specifically designed for landscape contracting to include hardscapes, tree installation, irrigation, and landscape design.

1:00 PM – 1:50 PM

### Perennial Combos for Every Season



Shannon Currey, Izel Native Plants  
Kata Kress Wallace, Walters Gardens Inc.

(Approved: LC- 1, LA-0.83, NALP- 1, CPP-1)

Herbaceous perennials add beauty and seasonal appeal to landscapes, and they are powerhouses when it comes to ecological value. This session focuses on using curated combinations of perennials, grasses, and sedges that will delight your clients and provide benefits like pollinator support, weed suppression, and erosion control. Kata and Shannon will lay out simple, easy-care combinations that share cultural requirements and complement each other. They'll touch on selections for spring and summer and discuss how "fall-forward" plantings have unique advantages. After the session, you'll walk away with tips for managing the plantings and developing your own curated combos.

2:00 PM – 2:50 PM

### Soil Oxygen, or the Lack of, is the Difference Maker of Your Soil



Dr. Wei Zhang, Zynnovation, LLC

(Approved: LC- 1, ISA- Certified Arborist: 0.75, BCMA - Management: 0.75, NALP- 1, SAF- 0.50 Cat. 1, CPP-1)

If you've ever wondered why most trees do not have deep roots or why compacted soils are bad for your landscape, this session is for you. Many questions such as: why we can't water a plant one time per year with extra water, how long does it take for overwatering effects to show, what is the difference between native vs. imported soils and what construction techniques to use for disturbed or stockpiled soils can be answered with two words...soil oxygen! Dr. Zhang will delve into why soil oxygen is the real limiting factor and what you can do in the field to resolve soil concerns.

3:00 PM – 3:50 PM

### Ornamental Plant Breeding - Benefits for Growers and Landscapers



Dr. Hsuan Chen, NCSU

(Approved: LA-0.83, NALP-1, CPP-1)

Have you ever wondered how NCSU's ornamental plant breeding endeavors can positively impact the work of landscapers, growers, horticulture consultants and landscape architects? This session will highlight the basics of plant breeding and its benefits. The goal of plant breeding is primarily to develop new varieties of plants that are adaptive and meet the needs of many sectors of the green industry. Dr. Chen will discuss upcoming plant releases, how current NCSU research benefits field work, explore why local growers are creating their own in-house labs and where to start if you're interested in plant breeding. At the end of the session, Dr. Chen will welcome feedback from attendees, capturing expectations of future NCSU plant releases, to ensure they are on track with the industry's current needs.

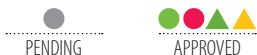
## URBAN FORESTRY & ARBORICULTURE

Coordinated by the NC Urban Forest Council



8:30 AM - 9:20 AM

### Pick it Right- Plant it Right = Successful Projects



Dr. Barbara Fair, NCSU

(Pending: ISA; Approved: LC- 1, NALP-1, SAF- 0.50 Cat. 1, CPP-1)

With a changing climate it is becoming more and more important to select the best plants for the site. What may have been "right" ten years ago may not be anymore. Therefore, selecting the best plant for the job means thoughtful thinking. However, we know it doesn't end there- you've also got to give the plants the best shot at establishing and THRIVING- Planting correctly based on the most up-to- date research will help you get where you want to go.

9:30 AM - 10:20 AM

### Soil Moisture: Top Factor For Newly Planted Tree Survival



Dr. Wei Zhang, Zynnovation, LLC

Dan Whitehead, Hortsource

(Pending: ISA; Approved: LC- 1, NALP-1, SAF- 0.50 Cat. 1, CPP-1)

Urban trees tend to struggle due to the fact that it is not an ideal growing condition in between pavements and buildings. Underwatering and overwatering are the most common causes. The commonly found compacted soils in urban environment worsens the problem. Water prescriptions are developed to address this problem, but most watering prescriptions don't consider the losses of specific sites. The most important factor for tree survival is the soil moisture, not how much water is dumped onto the rootball. New methods of stabilizing soil moisture while making use of the abundant stormwater found in the urban area will be discussed.

10:30 AM - 11:20 AM

### ABCs of Young & Small Tree Pruning



Andy Pleninger, NC Forest Service

(Pending: ISA; Approved: LC- 1, NALP-1, SAF- 0.50 Cat. 1, CPP-1)

Most young trees never receive proper pruning in spite of the fact that it:

- Requires minimal training to learn proper techniques.
- Requires little time to complete.
- Can be accomplished from the ground using hand tools.
- Can dramatically extend the useful life of trees in the landscape by eliminating life-shortening defects.

The ABCs is a systematic and prioritized method for proper tree pruning. An easy to learn and recall acronym-based methodology, directs you where to start, what branches to prune, and when you are finished. Co-author, Andy's presentation will lead you through the ABCs pruning methodology, tips and tools of the trade.

1:00 PM - 1:50 PM

### The Past, Present, Future, and Alternatives for Neonicotinoid Insecticides



Patrick Anderson, Rainbow Ecoscience

(Pending: ISA; Approved: PA- L:1, N:1, D:1, X:1, NALP-1, SAF- 0.50 Cat. 1, CPP-1)

Neonicotinoids are a class of insecticides that move systemically within plants and are effective against several insect families including Coleoptera, Hemiptera, and Homoptera. They are one of the most commonly used insecticides groups used in agriculture and landscape. There have been several high-profile cases of miss applied neonicotinoids and data showing these products may move into pollen and nectar of plants. This is leading to some municipalities restricting the use of these products in landscapes. During this talk we will discuss the history of these products for landscape use, what restrictions are in place within the US, what restrictions maybe on the horizon, and alternative products and methods for managing plant feeding insect pests in the landscape.

2:00 PM - 2:50 PM

### Preventing Tree Loss Before, During and After Construction



*Ellen LeBrun, Bartlett Tree Experts*

(Pending: ISA; Approved: LC- 1, NALP-1, SAF- 0.50 Cat. 1, CPP-1)

Jeff will be reviewing current Best Management Practices for managing trees before, during and after construction. He will cover contract specifications for tree protection during a project, while highlighting how to include tree protection before and mitigation after into a bid proposal. Above ground and below ground space is critical for healthy trees, knowing and understanding how to manage a tree and its surrounding area during a project will reduce tree loss due to construction damage.

3:00 PM - 3:50 PM

### Spotted Lantern Fly, the New Pest on the Block



*Patrick Anderson, Rainbow Ecoscience*

(Pending: ISA; Approved: LC- 1, PA- L:1, N:1, D:1, X:1, NALP-1, SAF- 0.50 Cat. 1, CPP-1)

Spotted lanternfly (SLF) was first detected affecting trees in Pennsylvania during the year 2014. SLF has since been detected from New England to the Midwest, and in North Carolina. During this presentation we will discuss the biology, hosts, and impact of this insect on trees and shrubs. In addition, we will cover practical protocols for managing this pest in landscapes.

## TURF MANAGEMENT

*Coordinated by the NC Sod Producers Association*



8:30 AM - 9:20 AM

### Using [www.turfFiles.ncsu.edu](http://www.turfFiles.ncsu.edu) and Extension Publications



*Dr. Grady Miller, NCSU*

(Approved: LC-1, PA- L:1, N:1, D:1, X:1, NALP- 1, CPP- 1)

Have you ever had a turfgrass question and not sure how or where to find the answer? Or have you ever needed to justify your management practices to a client? The NC State website "TurfFiles" can help you with these issues and so many others. This talk will review components of TurfFiles, highlight new/ revised extension publications, and offer examples of how you can use these resource for your business.

9:30 AM - 10:20 AM

### Managing Insect Pests in Warm and Cool Season Turf using IPM Techniques



*Terri Billeisen, NCSU*

(Approved: LC-1, PA- L:1, N:1, D:1, X:1, NALP- 1, CPP- 1)

Do you know what insect pests are most likely to injure cool and warm season turf in the southeastern United States? This session will provide information on effective insect management for common turfgrass pests found in commercial and residential lawns in this region. Information presented will include the latest research-based information and recommendations on current and forthcoming insecticides as well as cultural management practices for effective insect management. This seminar will also include information on the fate and behavior of insecticides in a turfgrass environment.

10:30 AM - 11:20 AM

### Identification and Management of Difficult Landscape Turf Weeds



*Fred Yelverton, NCSU*

(Approved: LC-1, PA- L:1, N:1, D:1, X:1, NALP- 1, CPP- 1)

This seminar will provide participants information about identification and management strategies to properly control difficult weeds. Weed control products for landscape turf using new herbicide chemistry and herbicide application strategies will be discussed. Attendees will be exposed to weed management practices including chemical and cultural turf weed control techniques in the landscape. Participants will learn about specific weeds in NC with an emphasis on common and troublesome weeds in landscape environments and effective control programs.

1:00 PM - 1:50 PM

### Advanced Disease Management in Turfgrass Landscapes



*Jim Kerns, NCSU*

(Approved: LC-1, PA- L:1, N:1, D:1, X:1, NALP- 1, CPP- 1)

Diseases are a seasonal problem in landscape in cool and warm season turf. In this seminar, information provided will focus on effective disease management and identification for commercial and residential lawn care operators in North Carolina. Information presented will include the latest research-based information and recommendations on current and forthcoming fungicides as well as cultural management practices for effective disease management.

2:00 PM - 2:50 PM

### New Challenges and Changes Ahead with Turf Pesticides



*Travis Gannon, NCSU*

(Approved: PA- L:1, N:1, D:1, X:1, NALP- 1, CPP- 1)

Pesticides are commonly incorporated into comprehensive pest management plans; however, pesticides have permeated news outlets in recent months and years. Unfortunately, much of the disseminated information has been misconstrued and/or contains misinformation and the scrutiny around their use will likely continue to increase in the future. While pesticides are an integral component of pest management plans, it's imperative for personnel to understand intricacies of how pesticides perform and behave to optimize efficacy without adversely affecting human or environmental health. It is also very important to keep up with the latest pesticide laws and pesticide registrations changes. In this session participants will learn about the latest upcoming pesticide registration changes as well as the fate and behavior of pesticides in a turfgrass environment. Information provided will be the latest NCSU pesticide research concerning how pesticides react in a turfgrass system.

3:00 PM - 3:50 PM

### Annual Management Strategies for Cool and Warm Season Turf Pests



*Matt Martin, NCSU*

(Approved: LC-1, PA- L:1, N:1, D:1, X:1, NALP- 1, CPP- 1)

This seminar will focus on developing an annual pesticide maintenance plan for cool and warm season turf species. Managing turfgrass pests using preventative disease, insect, and weed strategies may provide longer pest control with fewer pesticide applications. Participants will learn how to develop specific programs for reduction of disease, insect, and weed activity, taking advantage of cultural, biological and chemical strategies.