

67th Annual Iowa State University Shade Tree Short Course

February 22-23, 2023

Scheman Continuing Education Building
Iowa State University
Ames, Iowa

Theme: 67 Years...and Counting!

CONFERENCE AT A GLANCE

Tuesday, February 21, 2023

Become an ISA Certified Arborist

(Room 250-252 Scheman Building)

Once again in 2023, the ISU Shade Tree Short Course will host an International Society of Arboriculture Certified Arborist exam. STSC participants wishing to take the exam should register online with the ISA (<http://www.isa-arbor.com/certification/index.aspx>) or call the ISA at 888-472-8733.

2:30 – 6:30 p.m.

ISA Certified Arborist Exam – Room 250-252

Wednesday, February 22, 2023

7:30 – 9:00 a.m.

Registration, Refreshments, and Visit Trade Show

(First floor lobby, Scheman Building)

Opening General Session (C.Y. Stephens Auditorium)

9:00 – 9:30 a.m.

Welcome, Announcements, Special Presentations, **Donald Lewis**, Iowa State University

9:30 – 10:30 a.m.

Native or Non-native Plants? Using Good Plant Science to Make Good Choices

Linda Chalker-Scott, Washington State University

10:30 – 11:30 a.m.

Watering Practices for Establishing Trees: A New Approach

Graham Herbst, Nebraska Forest Service

11:30 a.m. – 1:00 p.m.

Lunch, Visit Trade Show, INLA Business Meeting, and IAA Business Meeting

1:00 – 2:00 p.m.

Workshop Session A

2:15 – 3:15 p.m.

Workshop Session B

3:15 – 4:00 p.m.

Break and Visit Trade Show

4:00 – 5:00 p.m.

Workshop Session C

5:00 – 7:00 p.m.

INLA Hospitality Reception (Open to all attendees) – Reiman Gardens

7:00 – 8:00 p.m.

Scholarship Auction/Awards Program – Reiman Gardens

Thursday, February 23, 2023 (Scheman Building)

7:30 – 8:30 a.m.

Refreshments and Visit Trade Show

8:30 – 9:30 a.m.

Workshop Session D

9:45 – 10:45 a.m.

Workshop Session E

11:00 – 12:00 (noon)

Workshop Session F

12:00 – 1:15 p.m.

Lunch (optional/Scheman Building) or on your own
Trade Show Open for Final Time!

1:15 – 2:15 p.m.

Workshop Session G

Concluding General Session (Benton Auditorium)

The Cy-Hawk Rivalry Continues...A Participatory Experience

Andrew Dahl, University of Iowa

Jeff Iles, Iowa State University

3:30 – 3:45 p.m.

Evaluation

Adjourn

GENERAL SESSIONS

OPENING GENERAL SESSION

Wednesday, February 22, 2023 – 9:30 a.m.

Native or Non-native Plants? Using Good Plant Science to Make Good Choices

The ISU Shade Tree Short Course is pleased to welcome **Linda Chalker-Scott** to the stage for her first ever appearance at our annual conference. Linda is a Professor and serves as Extension Urban Horticulturist at Washington State University. In her keynote presentation, Linda will rely on a science-based approach to discuss the merits of native and non-native plants. Native plants are perceived as requiring fewer inputs, especially in terms of pesticides, fertilizers, and water. On the other hand, introduced woody species are increasingly perceived as undesirable, primarily because they are lumped together with their invasive counterparts. In this presentation, Linda will provide an informed and thoughtful approach to plant selection beyond simply looking at where plants come from.

Watering Practices for Establishing Trees: A New Approach

Graham Herbst, Nebraska Forest Service is certainly no stranger to the STSC, but this time we're inviting him to the big stage to talk about a recent study aimed at improving establishment of street trees in Omaha, Nebraska. Initiated in 2015, the project investigated site factors and establishment strategies for improving survival and success of trees planted in tough sites (street medians). From this research, a new system for irrigating trees was developed. In his presentation, Graham will summarize initial project findings and present a cost-benefit analysis comparing the new modular watering system to traditional tree establishment protocols.

CLOSING GENERAL SESSION

Thursday, February 23, 2023 – 2:30 p.m.

The Cy-Hawk Rivalry Continues...A Participatory Experience

Cyclones vs. Hawkeyes! And now this storied rivalry spreads from the field and hardwoods to the stage inside Benton Auditorium. But in the world of arboriculture, and landscape plant maintenance, these two historic rivals are mostly on the same page. Still, there's plenty of room for friendly disagreement so don't even think about leaving early this year because **Andy Dahl**, Campus Arborist from the University of Iowa along with **Jeff Iles**, Iowa State University are here to debate, educate, and have a little fun. Audience members will be invited to get involved as well. And the real winners? The trees of course!

Session A Workshops

A-1.

Novel Options for Diversifying Managed Landscapes

Brandon Miller, University of Minnesota

St. Paul, MN

Modern trends in the nursery supply chain have led to the repetitive use of easily grown, closely related taxa. Among the multitude of underutilized trees that could be used more broadly in managed landscapes are the hickories (*Carya* spp.). Hickories have long been sought after by horticulturists for their ornamental value yet have not been fully integrated into commercial nursery production. In this presentation, Brandon will introduce species of hickory with potential application for the Midwestern U.S.

A-2. (D-2 Repeat)

Brush Busting and You: Managing Trees, Shrubs, and Woody Vines*

Roger Becker, University of Minnesota

St. Paul, MN

Tree, shrub, and vine invasions are on the rise in the Midwest. This workshop will provide background as to why this is happening and strategies for managing problematic woody plant species. Specific species to be covered include buckthorn, eastern red cedar, Japanese barberry, Siberian elm, and poplars, along with several invasive herbaceous plants that threaten the understory of desirable woodlands. Basic concepts of herbicide use, mode of action, and application methods also will be covered.

A-3. (F-3 Repeat)

Water Feature Design and Construction Mistakes to Avoid

Limit 75

Chris Thompson, Just Add Water

Ankeny, IA

Messing up a water feature installation can be a very costly venture. In this workshop, Chris will discuss mistakes he sees on a regular basis and explore ways to correct and prevent them from happening. Whether you build one or dozens of water features, you'll leave this session with information and tips to help you and your business avoid costly water feature mistakes.

A-4. (B-4 Repeat)

Green Roofs

Jennifer Bousset, Colorado State University

Fort Collins, CO

Green roofs represent an emerging green infrastructure solution to many urban issues including storm-water management, cooling urban spaces, and increasing food security in urban food deserts. Green roofs can be as unique as backyard gardens. However, they are complex systems requiring maintenance on a space that few people even think about...rooftops. Jennifer will use case studies to help audience members learn more about green roofs including rooftop agriculture.

A-5. (D-5 Repeat)

Diagnosing Health Problems of Woody Plants*

(2 hours) – Limit 30 per session

Laura Iles and Ed Zaworski, Iowa State University

Ames, IA

Mark Vitosh, Iowa DNR District Forester

Iowa City, IA

This year, seasoned STSC veterans Laura Iles and Mark Vitosh welcome rookie presenter Ed Zaworski to this perennially-popular diagnostic workshop. But Ed is no stranger to plant diagnostics especially when it comes to conifer issues. And as we all know, conifers *do* have their issues. Seating is limited so sign up early for this session.

A-6.

Trees and Storms: Which Defects are Truly Defective?

Andrew Koeser, University of Florida

Wimauma, FL

In reviewing past research on the fate of urban trees during storms, two things become apparent; (1) most mature trees have multiple visual defects, and (2) most mature trees survive wind events (even Category 1 hurricanes) unscathed. To arrive at this conclusion, we conducted an international literature review and meta-analysis of studies based on post-storm evaluations. Our goal was to determine which tree defects outlined in industry BMP's actually predicted tree failure. Come to this session to learn which tree defects were most commonly associated with tree failure and which defects consistently failed to predict storm damage.

A-7. (E-3 Repeat)

Ramblings of an East Coast Nurseryman: Improving Your Product and Bottom Line

Scott Clark, Pinewood Perennial Gardens

Cutchogue, NY

In this session, long-time nursery educator and practitioner Scott Clark will discuss challenges faced after the purchase of an existing nursery and changes implemented to improve plant quality and customer service. Are you contemplating a new growing medium, different weed management strategies, an updated irrigation system, or new plant palette to better suit the environment and customer needs? If so, Scott has been there and done that. You won't want to miss this engaging presentation.

Session B Workshops

B-1. (C-3 Repeat)

Arboricultural Zombies - Myths That Will Not Die

Linda Chalker-Scott, Washington State University

Pullman, WA

Certified arborists and landscape maintenance professionals need the latest plant and soil science information to pass on to their clients, but how can you distinguish science from pseudoscience? Landscape professionals can lose their credibility (and business) very quickly if they promote products and practices that aren't based on reputable science. This presentation will focus on

landscape tree care and provide practitioners with guidelines for evaluating articles, books, and electronic resources objectively. And for each myth busted, Linda also will discuss alternatives that are both practical and scientifically grounded.

B-2. (C-4 Repeat)

Life Below Ground - Stem Girdling Roots*

Kent Honl, Rainbow Treecare

Minnetonka, MN

Almost any tree grown in a nursery and planted by humans can end up with stem girdling roots (SGR's). Proper care at planting can prevent the problem, but most of the time we end up trying to "save" trees afflicted with SGR's. And once identified, how do we help them? How many girdling roots can be removed safely? When is it too late? The work of Ed Gilman provides some clear and useful guidelines for dealing with stem girdling roots and in this session Kent will describe how to apply Gilman's model.

B-3. (D-3 Repeat)

Urban Forest Management: A Primer to Strategic Planning

Rob Northrop, University of Florida

Seffner, FL

In this workshop, Rob will present a process for developing long-range strategic plans for urban forest management that address the resilience of the urban forest system and its capacity to adapt to the pressures of urban densification, expansion, and climate change. The methodology discussed is flexible, adaptable, and appropriate for any town interested in the initiation or redesign of an urban forest management program.

B-4.

Green Roofs

(See description A-4)

B-6. (C-6 Repeat)

Know Your Numbers

Weston Zimmerman, SynkedUP

Hollidaysburg, PA

Have you ever wondered if your price is too high or low? Or lost money on a job? Or negotiated with a client over price? We've all been there. If you're in business, you've wrestled with these challenges. In this workshop Weston will talk about getting crystal clear on what your pricing needs to be, how to estimate jobs priced for profit, and track them to ensure you're estimating correctly. Stop losing money and stressing out over quotes. Get ready to take action.

B-7.

Conversation Gardens

Limit 100

Lynn Kuhn, Outdoor Transformations

Granger, IA

Join Lynn for a unique, interactive workshop where you'll learn her system for creating Conversation Gardens, spaces designed to be both physically and emotionally safe, where people feel happier, healthier, and conversational. Using several beautiful examples, Lynn will reveal the five key components of a Conversation Garden. In the end, you'll walk away inspired, confident, and equipped with the tools you'll need to create these environments at your business, for your clients, and in your own backyard.

Session C Workshops

C-1.

Are Extremes the New Normal? A Brief Look at Statewide Climatological Trends and Impacts on the Weather

Justin Glisan, State Climatologist

Des Moines, IA

In recent years, extreme weather events seem to be in the news more often compared to previous decades. And will derechos, droughts, and flooding become the new normal? In this workshop, Justin will explore climatological trends across Iowa and discuss how these trends might impact current and future weather events.

C-2. (F-5 and G-1 Repeat)

Identifying Deciduous Trees of the Midwest

Scott Carlson, Scott Carlson Tree Consulting

Eldridge, IA

The first step in diagnosing tree problems or needs is to identify the tree. A proper identification can help you rule out certain problems while steering you toward the correct diagnosis and appropriate treatments. In this workshop, Scott will share a few "old timer" tricks and short-cuts to help you properly identify deciduous trees. Whether you're brushing up on old skills or learning for the first time, by the end of this session, you'll never confuse a maple with an ash ever again.

C-3.

Arboricultural Zombies - Myths That Will Not Die

(See description B-1)

C-4.

Life Below Ground - Stem Girdling Roots*

(See description B-2)

C-5.

The Ways in Which Urban Foresters Limit Urban Tree Diversity

Andrew Koeser, University of Florida

Wimauma, FL

Despite a general awareness of the importance of urban tree diversity, most U.S. cities continue to rely on a half-dozen tree species for the majority of their street trees. While supply constraints are commonly noted as an underlying cause of low species diversity, tree purchasers (local governments, developers, etc.) have played their part in shaping the current nursery market. In this workshop Andrew will share findings from two focus group studies including several simple ways urban forest managers can use policy to tip the scales in favor of a more diverse plant palette.

C-6.

Know Your Numbers

(See description B-6)

C-7. (G-7 Repeat)

Continuing Instructional Course for Pesticide Applicators**

Limit 50 per session

Evan Alderman, Iowa State University

Ames, Iowa

This workshop is required if you want approved continuing instructional credits (CIC's) toward pesticide applicator recertification at the 2023 STSC. The Iowa Department of Agriculture and Land Stewardship has approved the ISU Shade Tree Short Course for CIC's in categories 2 and 3O. This required session will present information on personal protective equipment and safe handling and storage of pesticides, including chemical security. You also **must** attend one additional qualifying workshop (A-2 or D-2, A-5 or D-5, B-2 or C-4, D-1, E-1, F-1, F-4 or G-4, or G-6) to receive certification.

NOTE: Pesticide applicators wishing to recertify at the STSC will be charged an additional \$35 for categories 2 and 3O.

Session D Workshops

D-1.

Biology of Wood Decay Fungi*

Christopher Luley, Urban Forest Diagnostics LLC

Naples, NY

In this presentation, Chris will cover the essential biology of wood decay fungi including life cycles, infection biology, and how trees respond to wounding and decay.

D-2.

Brush Busting and You: Managing Trees, Shrubs, and Woody Vines*

(See description A-2)

D-3.

Urban Forest Management: A Primer to Strategic Planning

(See description B-3)

D-4.

The Regal Lily and its Redemption of E.H. Wilson

Michael Dosmann, Arnold Arboretum

Boston, MA

Ernest Wilson introduced scores of popular species like the dove tree and paperbark maple into western cultivation, yet it was the regal lily that stole his heart - and nearly ended his life. Wilson said it also redeemed him, but why did this world-renowned explorer ever need redemption?

This presentation not only showcases historic horticulture and botany, but pulls back the veil to illustrate the psyche of a famous yet poorly understood plant explorer.

D-5.

Diagnosing Health Problems of Woody Plants*

(See description A-5)

D-6. (F-6 Repeat)

Threading Culture with Technology

Kory Beidler, Aspire Software

Frederick, MD

A company's culture is critical for attracting and retaining top talent. In this workshop, Kory will discuss the influences driving culture *and* how technology plays a larger role in company culture each year. Welcome back to the STSC and to Iowa Kory!

D-7. (E-7 Repeat)

Root Repair 101: Dealing With Circling Roots at Planting

Riley Rouse, Michigan State University

East Lansing, MI

Container-grown trees are popular options for arborists and landscapers. However, growing trees in standard plastic nursery containers can lead to malformed root systems, namely circling roots.

Over the years, several techniques have been promoted to remediate circling roots such as slicing, teasing, shaving, and bare-rooting. In this workshop, Riley will discuss results from trials that compared remediation techniques for circling roots of container-grown trees.

Session E Workshops

E-1.

Wood Decay Fungi in Urban Trees*

Christopher Luley, Urban Forest Diagnostics LLC

Naples, NY

Sign up for this workshop and learn the five most common wood decay fungi of urban trees and why they are important to tree stability. Chris will cover the basics of identifying decay fungi

and introduce TreeRot.com and an additional resource to help identify decay-causing pathogens.

E-2. (G-2 Repeat)

Use Your Head(ing) Cut to Delay Decay

Josh Galiley, Consulting Arborist

Rochester, NY

In this workshop, Josh will describe the advantages of periodic structural pruning when trees are small, emphasize the importance of using ANSI pruning standards to guide your pruning decisions, and demonstrate how heading cuts can be used to systematically remove large limbs while minimizing the introduction of decay into a tree.

E-3.

Ramblings of an East Coast Nurseryman: Improving Your Product and Bottom Line

(See description A-7)

E-4.

Versatile Strategies for Managing Multiuse Landscapes for Mature Tree Retention and Overall Plant Health

Carrie Tauscher, Crown Hill Cemetery

Indianapolis, IN

Have you ever contemplated the actual purpose of the multiuse property you manage? Is it primarily a functional space, with important aesthetic features? Is it known for its tree canopy? Are the plants healthy and do you stay within budget? In this workshop, Carrie will discuss how to proactively identify site management strategies that may be working against each other.

E-6.

Landscape with Intention

Limit 100

Lynn Kuhn, Outdoor Transformations

Granger, IA

We all want to create spaces that are functional, sustainable, manageable, and of course, beautiful, which seems like a lot, but it's not enough. We also need to satisfy the WHY of the project. This requires a more focused, client-profiling process. Sign up for this workshop and learn about Lynn's Landscape with Intention (LWI) approach. It's her system for getting at the heart of what truly matters to clients. Using the LWI workbook, Lynn will take you through a process to guide a client to the WHY, WHAT, and HOW of their project and how that effort translates into the creation of a landscape clients will truly enjoy.

E-7.

Root Repair 101: Dealing With Circling Roots at Planting

(See description D-7)

Session F Workshops

F-1.

Heart Rot, the Silent Killer*

Christopher Luley, Urban Forest Diagnostics LLC

Naples, NY

Heart rot is a common condition for mature, urban trees. Sign up for this workshop and learn when and if heart rot is important to tree stability. The terms heart rot and heartwood will be defined and discussed in the context of tree decay and its development in mature trees.

F-2. (G-3 Repeat)

Urban Forestry in Hong Kong: An Outsiders Perspective

Graham Herbst, Nebraska Forest Service

Omaha, NE

Urban forestry practices in Hong Kong present unique challenges to the trees and historic landmarks on the island and mainland portions of the city. Sign up for this workshop and explore this beautiful international destination, learn how trees are managed in Hong Kong, and ways the city has adapted planting sites for improved tree success.

F-3.

Water Feature Design and Construction Mistakes to Avoid

Limit 75

(See description A-3)

F-4. (G-4 Repeat)

Life Below Ground - Chlorosis*

Kent Honl, Rainbow Treecare

Minnetonka, MN

Chlorosis, a relatively common symptom of many landscape trees, is persistent and difficult to treat with reliable results. A few of the more problematic species in Iowa are red maple and river birch. This workshop will focus on important distinctions and considerations in treating chlorosis across several species of trees. Of course, maintenance practices that favor and promote healthy root systems will always be the first line of defense in the prevention of chlorosis.

F-5.

Identifying Deciduous Trees of the Midwest

(See description C-2)

F-6.

Threading Culture with Technology

(See description D-6)

F-7.

Where Have All the Backstories Gone? Bringing Authenticity to our Landscapes

Michael Dosmann, Arnold Arboretum

Boston, MA

We demand and expect that our landscape plants will be resilient in the face of all stressors, easy to grow, ornamental year-round, and of course, come at a bargain price. But shouldn't we also demand that our landscape plants provide a connection between the plant explorer, producer, and end user? During his entertaining rant, Michael will re-introduce an important facet - the human being - into the values that shape our plant choices. Do you know where your plants came from?

Session G Workshops

G-1.

Identifying Deciduous Trees of the Midwest

(See description C-2)

G-2.

Use Your Head(ing) Cut to Delay Decay

(See description E-2)

G-3.

Urban Forestry in Hong Kong: An Outsiders Perspective

(See description F-2)

G-4.

Life Below Ground - Chlorosis*

(See description F-4)

G-5.

Our Home-grown football field at Jack Trice Stadium

Adam Thoms, Iowa State University

Ames, IA

In the opinion of many, the natural playing surface at Jack Trice Stadium is one of the best in the country, and this past summer, it got a much-needed facelift. But where does one find enough quality sod to replace the existing turf? Well, as it turns out, you grow your own. Sign up for this workshop and learn about the many details involved in planning, growing, transporting, and installing the natural playing surface at Jack Trice Stadium.

G-6.

Compounding Factors in Urban Landscapes That Cause Tree Stress*

Carrie Tauscher, Crown Hill Cemetery

Indianapolis, IN

Sign up for this workshop and learn how to identify and possibly eliminate site factors that contribute to tree stress. Alleviating or at least understanding stress-causing site factors prior to

site development and construction will save time, money, and improve relationships with clients.

G-7.

Continuing Instructional Course for Pesticide Applicators**

(See description C-7)

*Qualifying Pesticide Applicator Workshops

**Required Pesticide Applicator Workshop

Pesticide Continuing Education

The Iowa Pesticide Act provides two options for renewing commercial pesticide applicator certification. Commercial and public applicators may choose to renew their certification by testing once every three years or by attending approved instructional training each year.

Recertification by training requires participation in two hours of approved instructional training each year, in each category in which an applicator is certified. Some programs may be approved for more than one category and simultaneous credit hours are possible. Applicators will not be allowed to make up hours that they missed in a previous year, nor will they be allowed to carry forward excess credit hours.

Pest Management Workshops:

A-2 or D-2 Brush Busting and You: Managing Trees, Shrubs, and Woody Vines (*Becker*)

A-5 or D-5 Diagnosing Health Problems of Woody Plants
(Laura Iles, Zaworski, and Vitosh)

B-2 or C-4 Life Below Ground - Stem Girdling Roots (*Honl*)

D-1 Biology of Wood Decay Fungi (*Luley*)

E-1 Wood Decay Fungi in Urban Trees (*Luley*)

F-1 Heart Rot, the Silent Killer (*Luley*)

F-4 or G-4 Life Below Ground - Chlorosis (*Honl*)

G-6 Compounding Factors in Urban Landscapes That Cause Tree Stress (*Tauscher*)