64th ANNUAL
IOWA STATE UNIVERSITY SHADE TREE SHORT COURSE

Trees FOR A Purpose AND Repurpose

FEBRUARY 25-27, 2020

Scheman Continuing Education Building • Iowa State University • Ames, Iowa

SPONSORED BY
Iowa State University Extension and Outreach
Iowa Nursery & Landscape Association
Iowa Arborist Association
TUESDAY, FEBRUARY 25, 2020

Iowa Nursery and Landscape Association Events
Scheman Building
The Iowa Nursery and Landscape Association will host a half day specifically designed for INLA members. The day will feature Iowa Certified Nursery Professional (ICNP) certification testing and a continuing education program for current ICNP’s.

10 a.m. – 4 p.m. Trade Show Set-up
1– 4 p.m. Iowa Certified Nursery Professional (ICNP) Testing Room 275
ICNP Continuing Education Room 299
4– 5 p.m. Trade Show Preview/Exhibitor Reception

Become an ISA Certified Arborist
Once again in 2020, the Iowa State University 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 (isa-arbor.com/Credentials/Exam-Information) or email ISA at isa@isa-arbor.com. Enrollment deadline is Feb. 6, 2020.

2 – 6 p.m. ISA Certified Arborist Exam Room 250-252

Pesticide Applicator Recertification and Training
Scheman Building
In 2020, the ISU Shade Tree Short Course will offer two unique opportunities for pesticide applicator recertification and training; Category 5 (aquatic) and Category 6 (right-of-way). To receive two hours of approved continuing instructional credits (CIC’s) in these categories, you also must attend workshop C-7 or G-7.

2– 3 p.m. Pre-conference Workshop 1 Room 260-262

CATEGORY 5:
Identification and Management of Invasive Aquatic Weeds*
Kim Bogenschutz, Coordinator–Aquatic Invasive Species, Iowa Department of Natural Resources, Des Moines
Multiple species of invasive aquatic plants can impact aquatic habitats and recreational areas in Iowa. This presentation will profile the identification and distribution of some of the invasive aquatic plants already found in Iowa (e.g. Eurasian watermilfoil, brittle naiad, and curlyleaf pondweed) and other species of invasive aquatic plants threatening to spread into Iowa. Case studies will be used to show how the Iowa Department of Natural Resources has identified various options to manage invasive species in Iowa’s waterbodies. To receive recertification credit in Category 5 (aquatic), an applicator must attend Workshop C-7 or G-7 (Continuing Instructional Course for Pesticide Applicators) in addition to this workshop.

3:15 – 4:15 p.m. Pre-conference Workshop 2 Room 260-262

CATEGORY 6:
Managing Iowa’s Roadside Noxious and Invasive Weeds*
Chris Henze, Roadside Vegetation Manager and County Weed Commissioner, Johnson County Secondary Roads
Managing noxious and invasive weed species on more than 350,000 acres of public right-of-way across Iowa’s road system is a challenging task. This presentation will examine and identify some of the most problematic noxious and invasive species and discuss vegetation management tools such as herbicides, mowing, and prescribed fire that county roadside programs utilize in the right-of-way. To receive recertification credit in Category 6 (right-of-way), an applicator must attend Workshop C-7 or G-7 (Continuing Instructional Course for Pesticide Applicators) in addition to this workshop.

WEDNESDAY, FEBRUARY 26, 2020

7:30 a.m. Registration/Refreshments/Visit Trade Show
Scheman Building—First floor lobby
9 a.m. OPENING GENERAL SESSION
C.Y. Stephens Auditorium
Welcome, Announcements, Special Presentations
Donald Lewis, Iowa State University
9:30 a.m. Smaller Shade and Flowering Trees
Michael A. Dirr, University of Georgia
10:30 a.m. Today’s Best Trees for the Urban Forest
Keith Warren, J. Frank Schmidt & Son Co., Boring, Oregon
11:30 a.m. – 1 p.m. Lunch/Visit Trade Show
INLA and IAA Business Meetings
1 – 2 p.m. Workshop Session A
2:15 – 3:15 p.m. Workshop Session B
3:15 – 4 p.m. Break/Visit Trade Show
4 p.m. Workshop Session C
5 – 7 p.m. INLA Hospitality Reception open to all attendees
Reiman Gardens
7 – 8 p.m. Scholarship Auction/Awards Program
Thursday, February 27, 2020

7:30 a.m. Refreshments/Visit Trade Show
8:30 – 9:30 a.m. Workshop Session D
9:45 – 10:45 a.m. Workshop Session E
11 a.m. – NOON Workshop Session F
NOON – 1:15 p.m. Lunch available at Scheman Building or on your own Trade Show open for final time!
1:15 – 2:15 p.m. Workshop Session G
2:30 p.m. CONCLUDING GENERAL SESSION
Benton Auditorium
The Golden Age of Shrub Breeding
Tim Wood, Spring Meadow Nursery, Inc., Grand Haven, Michigan
3:30 p.m. Evaluation
3:45 p.m. Adjourn

General Sessions and Workshops

Opening General Session
Wednesday, February 26, 2020 – 9:30 a.m.
Smaller Shade and Flowering Trees
We are honored to welcome plantsman extraordinaire, author, and all-around woody plant authority Michael A. Dirr back to the Iowa State University Shade Tree Short Course in what promises to be a most memorable and enlightening opening general session. According to Dr. Dirr, residential lot sizes and gardens are smaller today than in previous years, space for woody plants to spread is limited, and the demand and need for smaller trees is significant. The nursery industry, led by J. Frank Schmidt, has bred and introduced superior trees that fit these criteria. Breeders at North Carolina State University have introduced redbuds, cherries, and dogwoods. And Dr. Dirr himself has been introducing woody plants in all shapes and sizes for the duration of his career. You won’t want to miss this lead off presentation as Dr. Dirr highlights the newest and best small-stature trees for commercial and residential landscapes.
1.0 ISA CEU, A, M, Bs (0.5), Bp (0.5)

Today’s Best Trees for the Urban Forest
Rounding out the morning of extraordinary plant presentations, Keith Warren makes his return visit to the STSC to talk about the best tree choices for urban planting situations. New invasive pests, a changing climate, and human-directed construction activities are challenging our urban trees like never before. In response, we must adapt and our tree choices must change. In his presentation, Keith will discuss the newest cultivars and trends in species selection and even a few old faithful species will be examined again. Keith will identify the best choices for the urban forest, including street trees, trees for large landscapes, those suitable for parks and campuses, and give us a glimpse of trees for the future.
1.0 ISA CEU, A, M, Bs (0.5), Bp (0.5)

Closing General Session
Thursday, February 27, 2020 – 2:30 p.m.
The Golden Age of Shrub Breeding
A first-time presenter at the Iowa State Shade Tree Short Course, Tim Wood believes we are living in the golden age of shrub breeding. In fact, never before have we seen so many new plants. And while some will complain there are too many new plants, there are a number of plant breeding breakthroughs that have changed or will change the way we garden and landscape. Don’t even think about leaving early this year because Tim, product development and head of marketing with Spring Meadow Nursery in Grand Haven, Michigan, is ready to bring us highlights of some of the most dramatic and impactful changes in the world of ornamental plants.
0.5 ISA CEU, A, M, Bs (0.5)
SESSION A WORKSHOPS

A-1. Origins of Cultivated Trees
Michael A. Dirr, University of Georgia, Athens, Georgia
Fascinating sport...searching for the next great cultivated tree. In fact, the abundance of shade tree introductions have resulted from chance or serendipitous campus, park, roadside, field, creek bed, and nursery seedling discoveries. Other introductions have arisen from places like the Morton Arboretum, the U.S. National Arboretum, and J. Frank Schmidt & Son, Co., however, the time and expense to breed a new tree introduction is close to prohibitive. The late Earl Cully (Jacksonville, Illinois), Ray Jackson (Belvidere, Tennessee), and Don Shadow (Winchester, Tennessee) inspired all plantmen to be vigilant, because the next great tree may just be in your own backyard. Today, we travel north to south, east to west, sharing the joy of discovery. Nature provides, it is only necessary for us to observe. 1.0 ISA CEU, A, M (0.5), Bs (1.0)

A-2. (B-2 Repeat) Perspectives on Urban Forestry
Graham Herbst, Nebraska Forest Service, Omaha, Nebraska
Graham has been an Urban and Community Forester for eight years and has met many interesting people and seen many trees, both amazing and terrifying. This session will be a retrospective of his work with the Nebraska Forest Service, in the non-profit world, and in the arboriculture industry. 1.0 ISA CEU, A, Bm (1.0)

A-3. (C-3 Repeat) The Devil’s Backbone: A Park System is Born
Jerry Reisinger, Kirkwood Community College, Cedar Rapids
The Iowa state parks system celebrates its 100-year anniversary in 2020. And in this workshop Jerry will recount the story of the key people and events that created Iowa’s state park system. From the state parks movement in America coming to Iowa, to the creation of the State Park Act of 1917, and finally to the people who were instrumental in identifying and dedicating Iowa’s first state park. If you like our state parks, you’ll love this session. 1.0 ISA CEU, A, Bm (1.0)

A-4. (C-5 and G-4 Repeat) The Law-borist: Enforcing Municipal Tree Preservation Laws
John O’Neill, Urban Forestry Division, Washington DC
Although many municipalities have drafted tree preservation laws, enforcement of these laws can be hampered by a lack of legal resources and a lack of clarity in the law as drafted. This presentation will cover common problems in enforcing municipal tree preservation laws, including gathering sufficient evidence to show that a violation has occurred, creating a causal link between the damage and violator and enforcing favorable judgments. John will present these issues through the lens of the District of Columbia’s Special Tree Law, using case studies that can be both humorous and sobering. 1.0 ISA CEU, A, M, Bm, TW (0.5)

A-5. (D-5 Repeat) Diagnosing Health Problems of Woody Plants
Laura Jesse Iles and Lina Rodriguez Salamanca, Iowa State University, Ames; Mark Vitosh, Iowa DNR District Forester, Iowa City
When is quid pro quo acceptable? Well, the obvious answer is when you come to the ISU Shade Tree Short Course. And here’s the deal: you pay your registration fee, sign up for this workshop, and in return, you’ll receive accurate woody plant problem diagnostic information from three of the most trusted government employees in Iowa. And in keeping with the political season, come prepared to caucus for your favorite biotic or abiotic plant pest. But you can’t participate unless you’re in the room. Don’t settle for fake news in the hallways! 2 HOURS – LIMIT 30 PER SESSION / 2.0 ISA CEU, A, Bp

New for 2020 – Utility Arborist Track
This year, workshops A-6, C-6, D-6, E-6, F-6, and G-6 are designed for conference attendees working in utility arboriculture, however, these workshop topics also will be interesting and useful for all tree care professionals. The very best utility arborists will be leading these sessions and we know you’re going to enjoy this unique track of presentations.

A-6. An Overview of the Utility Specialist Study Guide
Randall H. Miller, CN Utility Consulting, Des Moines
Randall Miller was with us in 2019, and because he did such a fantastic job, we invited him back, this time to cover and discuss the Utility Specialist Study Guide. In his presentation, Randall will explain the history and background of utility specialist certification, provide an overview of the new study guide, and characterize the content of each chapter in the study guide. 2 HOURS / 2.0 ISA CEU, A, U, M, Bm

A-7. (F-7 Repeat) What’s New in Turfgrass Management for 2020*
Adam Thoms, Iowa State University, Ames
Come to this workshop and catch up on the latest developments and research for turfgrass management in Iowa. Adam will also discuss management problems and turfgrass issues of the past year, ways to improve your turfgrass stand, pest control methods, and IPM strategies for the year ahead. The Iowa Department of Agriculture and Land Stewardship requires commercial pesticide applicators to receive instruction specific to each category in which they are certified in order to recertify by training. To receive recertification credit in Category 3OT (Ornamentals and Turf) at the ISU Shade Tree Short Course, an applicator must attend Workshop C-7 or G-7 (Continuing Instructional Course for Pesticide Applicators) PLUS Workshop A-7 or F-7 (What’s New in Turfgrass Management for 2020) PLUS one additional pest-management approved workshop as designated by an asterisk (*).
SESSION B WORKSHOPS

B-1. From Breeding to Main Street
Keith Warren, J. Frank Schmidt & Son, Co., Boring, Oregon
Okay, so you bred or discovered a new tree cultivar. Now, what does it take to produce “finished” 4-inch caliper trees destined for Main Street? It’s a long and complicated process and includes comparison testing, propagation trials, growing trials, bulking through mass propagation, liner growing, caliper tree production, patents, trademarks, commercial introduction, marketing, and sales. In fact, it might take 10-20 years from the time of discovery to installation day on Main Street. Join Keith to see how this important process unfolds. 1.0 ISA CEU, A, Bs

B-2. Perspectives on Urban Forestry
(See description A-2)

B-3. (C-2 Repeat) Wood Waste Utilization for a More Circular Economy
Daniel Heaton, Envision Charlotte, Charlotte, North Carolina
It’s too common and too easy to consider wood as only waste once it is felled. The “take, make, and dispose” model of waste is linear-thinking of yesterday. In this session Daniel will challenge the status quo and describe how some cities are striving for circularity by redesigning their urban canopy to eliminate wood waste entirely. 1.0 ISA CEU, A, M, Bs

B-4. (C-4 Repeat) Pitfalls to Mixing Products*
Fred Whitford, Director, Purdue Pesticide Programs, West Lafayette, Indiana
The often-used adage, “read and follow label instructions” has new meaning. While often looking at the BIG picture in spray technology, we now realize that the subtleties of measuring the product or carrier is often neglected and may be the difference between application success and failure. A long-used measuring cup, trusting marks on tanks, failure to differentiate between liquid vs. dry ounces, and using incorrect or inaccurate measuring devices potentially lessens control of the target pest. The purpose of this talk is to urge you to investigate, and correct if necessary, this often overlooked first step in the pesticide application process. 1.0 ISA CEU, A, Bp

B-7. (C-1 Repeat) Plant Propagation at McKay Nursery
Mike Gates, McKay Nursery Company, Waterloo, Wisconsin
McKay Nursery Company is Wisconsin’s oldest and largest nursery. McKay has been propagating woody ornamentals for well over 100 years, and during that time they have learned a few things about how to reproduce plants. In this workshop, Mike will discuss current methods of plant propagation including softwood cuttings, hardwood cuttings, and seed germination. He’ll also discuss the technology, skill, and know-how needed to create a great liner. 1.0 ISA CEU, A, Bs

SESSION C WORKSHOPS

C-1. Plant Propagation at McKay Nursery
(See description B-7)

C-2. Wood Waste Utilization for a More Circular Economy (See description B-3)

C-3. The Devil’s Backbone: A Park System is Born
(See description A-3)

C-4. Pitfalls to Mixing Products* (See description B-4)

C-5. The Law-borist: Enforcing Municipal Tree Preservation Laws (See description A-4)

C-6. Are You a Leader or a Boss?
Randall H. Miller, CN Utility Consulting, Des Moines
In this next utility arborist workshop, Randall will explain the difference between a leader and a boss, help workshop participants understand how the human performance principle applies to leadership, clarify how errors occur, and finally characterize how prominent leadership philosophies dovetail with one another. 1.0 ISA CEU, A, U, Bm

C-7. (G-7 Repeat) Continuing Instructional Course for Pesticide Applicators**
Mark Shour, Iowa State University, Ames
This workshop is required if you want approved continuing instructional credits (CIC’s) toward pesticide applicator recertification at the 2020 STSC. The Iowa Department of Agriculture and Land Stewardship has approved the Iowa State Shade Tree Short Course for CIC’s in categories 2, 30, 3OT, 5, 6, and 10. This required session will present information on pesticide laws and regulations, pesticide storage and handling, and personal protective equipment. You also must attend one additional qualifying workshop (A-5 or D-5, B-4 or C-4, D-2, E-1 or G-1, E-6, or F-2) to receive certification. If you are recertifying for category 3OT, you also must attend the turfgrass management workshop (A-7 or F-7). If you are recertifying for Category 5 and/or 6, you must attend the appropriate pre-conference workshop(s) held on February 25. LIMIT 50 PER SESSION / 1.0 ISA CEU, A, U, M (0.5), Bp (0.5), Bm (0.5)

NOTE: Pesticide applicators wishing to recertify at the STSC will be charged an additional $35 for Categories 2, 30, or 3OT, and 10 AND an additional $35 for one or both of Categories 5 and 6 (see registration form).

*QUALIFYING PESTICIDE APPLICATOR WORKSHOPS
**REQUIRED PESTICIDE APPLICATOR WORKSHOP
SESSION D WORKSHOPS

D-1. (F-1 Repeat) Comparing the Missouri Gravel Bed and a Wood Chip Production Method for Tree Growth
Kelby Fite, Bartlett Tree Research Laboratories, Charlotte, North Carolina
The Missouri Gravel Bed production method is used to minimize root defects while growing nursery stock. The use of wood chip mulch was explored as an alternative medium to gravel. Results show that using mulch in a growing bed environment may be a viable alternative to gravel as very few differences between gravel and mulch were observed in above- and below-ground growth parameters for three tree species (swamp white oak, baldcypress, and littleleaf linden).

D-2. Taming the Top 10 Insect Pests of Woody Landscape Plants*
Daniel Potter, University of Kentucky, Lexington, Kentucky
In this session, Dan Potter, professor of entomology at the University of Kentucky, will cover diagnosis and control of major insect pests of woody landscape plants including caterpillars, mites, Japanese beetles, scale insects, borers, sawflies, leaf miners, and several others, with many tips on managing insect pests with reduced-risk insecticides and non-chemical tactics. 1.0 ISA CEU, A, Bp

D-3. (E-3 Repeat) What Did the Chicken Do?
Stephanie Salasek, Look Up Communications, Kelley
Shade Tree Short Course fan favorite Stephanie Salasek is back again in 2020, this time reminding us that a flawless customer experience requires a great product and exceptional service. It’s not too late to move your customers experience out of the freezer, the factory, and the friendly zoo. The chicken crossed the road. Can you? 1.0 ISA CEU, A, M, Bm

D-4. What You Need to Know About Hardscape Installations, Tools, Technology, and Crew Efficiency
Frank Bourque, Business Consultant, Ottawa, Ontario, Canada
In this comprehensive session, Frank will begin by offering powerful insights into the do’s and don’ts of paver and retaining walls installation, using case studies from successful companies describing how they've managed to significantly increase efficiency and profits while reducing call-backs. Next, Frank will discuss how to integrate tools, technology, and mobile applications into your business. Participants will learn about options available to track, monitor, communicate, and work more efficiently, on and off hardscape job sites. 3 HOURS

D-5. Diagnosing Health Problems of Woody Plants*
(See description A-5)

D-6. The Current State of Utility Vegetation Management (UVM) in North America
Philip Chen, CN Utility Consulting, Des Moines
What is benchmarking? What are the UVM industry trends? In this workshop, Philip will help you learn what benchmarking is, its benefits, and the current trends in the UVM industry of North America. 1.0 ISA CEU, A, U, Bm

D-7. (E-7 Repeat) Urban Wood Utilization
Don Peterson, Urban Wood Network, Crystal Falls, Michigan
In his presentation, Don will cover the history of urban wood utilization efforts with emphasis on the Urban Wood Network and Wisconsin Urban Wood programs. He will discuss utilization options for the entire tree from logs to chips with a variety of examples from small (one tree) to large (4,200 trees) removals. Urban log sawing, lumber drying, and value-added product examples will be covered. Urban wood utilization is as much about selling “the story” about the tree as it is the product itself. 1.0 ISA CEU, A, M, Bp (0.5), Bm (0.5)

SESSION E WORKSHOPS

E-1. (G-1 Repeat) Avoiding Tank Mixing Errors*
Fred Whitford, Director, Purdue Pesticide Programs, West Lafayette, Indiana
It is a common agricultural practice to combine multiple crop protection products into a single spray application. This practice is called tank mixing and offers many benefits, however, each formulated product has a set of diverse, intricate, and complex chemical structures. As a result, each additional tank mix partner increases the potential for incompatibilities (undesirable product interactions). Incompatibilities arise when one product influences the mixing and delivery of the products in the mixture. In this session, Fred will focus on how formulation, tank mixing order, and carrier type (water or fertilizer, for example) influence compatibility between products. Understanding the basics underlying these factors will help to effectively combine crop protection products to maintain productivity and efficacy. 1.0 ISA CEU, A, Bp

E-2. (G-2 Repeat) Majestic Trees: Why They Matter and How to Preserve Them
Alison Herrell, Rainbow Treecare Scientific Advancements, Chicago, Illinois
In this very interactive presentation, Alison will use examples of majestic trees submitted by STSC attendees to highlight the benefits of trees, especially those that might be characterized as “majestic”, and discuss how best to preserve them. 1.0 ISA CEU, A, M, Bp

E-3. What Did the Chicken Do? (See description D-3)

E-6. Stewardship Through Integrated Vegetation Management on Right-of-Ways*
Philip Chen, CN Utility Consulting, Des Moines
In this presentation, Philip will define what Integrated Vegetation Management (IVM) is, how and why it became a utility vegetation management industry best practice, and how it can help us in our role as stewards. Through sustainable IVM we can best serve our corporate, social, and environmental needs. Let’s all learn to move beyond compliance to something better. 1.0 ISA CEU, A, U, Bm

E-7. Urban Wood Utilization (See description D-7)
SESSION F WORKSHOPS

F-1. Comparing the Missouri Gravel Bed and a Wood Chip Production Method for Tree Growth (See description D-1)

F-2. Protecting Pollinators in Urban Land Care and Best Native and Non-native Woody Plants for Pollinator-friendly Landscapes*
Daniel A. Potter, University of Kentucky, Lexington, Kentucky
In this presentation, Daniel will help attendees better understand the reasons why pollinators are declining and how to safeguard them when managing pests in urban landscapes. He will give examples of pollinator conservation initiatives that can benefit your business and provide a scientific perspective on the debate over whether non-native plants can play a role in creating pollinator-friendly landscapes. 1.0 ISA CEU, A, Bs

F-3. (G-3 Repeat) Winter Tree Identification 101
Mark Vitosh, Iowa DNR District Forester, Iowa City
Tree work does not stop during the winter months. We also know that proper identification is key in making correct tree management decisions. In this long-awaited workshop, Mark will introduce important tree characteristics used in identifying trees during the dormant season (bark, buds, and leaf scars, for example). Landscape trees commonly found in the Midwest will serve as teaching tools. 1.0 ISA CEU, A, Bs

F-5. (G-5 Repeat) Life After Death: Repurposing Felled Urban Trees
David Hade, General Contractor (retired), Ames, Iowa
After spending 30 years in the home building and remodeling business, David has turned his attention to recapturing useable wood product from urban trees. In this presentation, David will describe the collection, milling, and drying process for trees that have been removed from the landscape because of death, storm damage, or because they were part of a removal program. 1.0 ISA CEU, A, TW (0.5), Bs (0.5), Bp (0.5)

F-6. Disaster Response and Preparation
Brian Sprinkle, CN Utility Consulting, Des Moines
Inevitably, utility companies will face power outages caused by falling trees and branches, which is costly and results in disgruntled customers. But regardless of the up-front expense, it’s important to dedicate time and resources to streamline vegetation management response processes so that outages caused by natural disasters can be avoided or minimized. In this presentation, Brian will discuss how to plan for the unexpected. 1.0 ISA CEU, A, U, TW, M, Bm

F-7. What’s New in Turfgrass Management for 2020* (See description A-7)

SESSION G WORKSHOPS

G-1. Avoiding Tank Mixing Errors* (See description E-1)
G-2. Majestic Trees: Why They Matter and How to Preserve Them (See description E-2)
G-3. Winter Tree Identification 101 (See description F-3)
G-4. The Law-borist: Enforcing Municipal Tree Preservation Laws (See description A-4)
G-5. Life After Death: Repurposing Felled Urban Trees (See description F-5)
G-6. Workforce Retention and Recruitment
Brian Sprinkle, CN Utility Consulting, Des Moines
In this final presentation of the day for utility arborists, Brian will provide an overview of opinions and facts about the growing concern for attracting qualified professionals to the tree care industry. Sign up for this workshop and join in the discussion. 1.0 ISA CEU, A, U, M, Bm

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

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<th>TO RECERTIFY IN CATEGORY</th>
<th>APPLICATOR MUST ATTEND</th>
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E-6
Stewardship Through Integrated Vegetation Management on Right-of-ways
Philip Chen, CN Utility Consulting, Des Moines

F-2
Protecting Pollinators in Urban Land Care and Best Native and Non-native Woody Plants for Pollinator-friendly Landscapes
Daniel Potter, University of Kentucky, Lexington, Kentucky

CATEGORY 5 PRE-CONFERENCE WORKSHOP 1
Identification and Management of Invasive Aquatic Weeds
Kim Bogenschutz, Coordinator–Aquatic Invasive Species, Iowa Department of Natural Resources, Des Moines

CATEGORY 6 PRE-CONFERENCE WORKSHOP 2
Managing Iowa’s Roadside Noxious and Right-of-way Weeds
Chris Henze, Roadside Vegetation Manager and County Weed Commissioner, Johnson County Secondary Roads

PEST MANAGEMENT WORKSHOPS

A-5 or D-5
Diagnosing Health Problems of Woody Plants
Laura Jesse Iles and Lina Rodriguez Salamanca, Iowa State University, Ames; Mark Vitosh, Iowa DNR District Forester, Iowa City

A-7 or F-7
What’s New in Turfgrass Management for 2020
Adam Thoms, Iowa State University, Ames

B-4 or C-4
Pitfalls to Mixing Products
Fred Whitford, Director, Purdue Pesticide Programs, West Lafayette, Indiana

D-2
Taming the Top 10 Insect Pests of Woody Landscape Plants
Daniel Potter, University of Kentucky, Lexington, Kentucky

E-1 or G-1
Avoiding Tank Mixing Errors
Fred Whitford, Director, Purdue Pesticide Programs, West Lafayette, Indiana
It’s Easy to Register!

REGISTER EARLY! Advanced registration is required due to the multiple workshop format. We will attempt to place you in your first choice, although some of the workshops have limited enrollment. No refunds will be given after February 21, 2020.

ONLINE Complete online form and pay with credit card at regcytes.extension.iastate.edu/shadetree

MAIL Complete form (one per participant). Select your workshop choices on the other side of this form. For each session A through G, rank your choices 1 to 7 in the spaces provided. Remember, some workshops run two or three hours. Mail completed form(s) with check made payable to Iowa State University: ISU Registration Services, 1601 Golden Aspen Drive, Suite 110, Ames, IA 50010

QUESTIONS? registrations@iastate.edu • (515) 294-6222

FIRST NAME LAST NAME

EMAIL PHONE

COMPANY/AFFILIATION ADDRESS CITY/STATE/ZIP

BUSINESS CLASSIFICATION check only one PROFESSIONAL CLASSIFICATION check all that apply
- Design professional
- Nursery and landscape professional
- Arborist
- Master Gardener
- Educator/student
- State/municipal employee
- Iowa Arborist Association
- Iowa Nursery & Landscape Association
- Iowa Golf Course Superintendents Association
- Iowa Professional Lawn Care Association
- Iowa Sports Turf Managers Association
- American Society of Landscape Architects
- Association of Professional Landscape Designers

STSC REGISTRATION OPTIONS

FEBRUARY 25-27 includes lunch on February 26

STSC REGISTRATION FEE
- ON OR BEFORE FEB. 14
  - $170
  - $220
- AFTER FEB. 14
  - $170
  - $220

STSC DISCOUNTED FEE for full-time academic student or ISU staff
- ON OR BEFORE FEB. 14
  - $ 85
  - $100
- AFTER FEB. 14
  - $ 85
  - $100

PESTICIDE APPLICATOR RECERTIFICATION 2, 30, 30T, 10
- ON OR BEFORE FEB. 14
  - $ 35
  - $ 35
- AFTER FEB. 14
  - $ 35
  - $ 35

FEBRUARY 27—Optional lunch
- ON OR BEFORE FEB. 14
  - $ 20
  - $ 20
- AFTER FEB. 14
  - $ 20
  - $ 20

PRE-CONFERENCE

FEBRUARY 25—PESTICIDE APPLICATOR RECERTIFICATION
- ON OR BEFORE FEB. 14
  - $35
  - $35
- AFTER FEB. 14
  - $35
  - $35

Please indicate which session(s) you will be attending

Workshop 1 Category 5: Aquatic

Workshop 2 Category 6: Invasive

FEBRUARY 25—INLA DAY EVENT RATES

MEMBER NON-MEMBER MEMBER NON-MEMBER

ICNP Certification Exam*
- $75 $150
- $75 $150

ICNP Certification Exam Retest*
- $40 $ 80
- $40 $ 80

ICNP Continuing Education Program
- $15 $ 15
- $15 $ 15

TOTALS*

*INLA will contact you with test preparation details

METHOD OF PAYMENT

- CHECK
  - Make checks payable to Iowa State University
- VISA
- MASTERCARD
- DISCOVER
- AMERICAN EXPRESS

CARDHOLDER NAME

SIGNATURE

CARD NUMBER

EXP. DATE

THREE DIGIT SECURITY CODE
For every workshop session A through G, mark your first (1) through seventh (7) choice in the spaces provided.

SESSION A WORKSHOPS
___A-1 Origins of Cultivated Trees
___A-2 Perspectives on Urban Forestry
___A-3 The Devil’s Backbone: A Park System is Born
___A-4 The Law-borist: Enforcing Municipal Tree Preservation Laws
___A-5 Diagnosing Health Problems of Woody Plants*
2 HOURS / LIMIT 30 PER SESSION
___A-6 An Overview of the Utility Specialist Study Guide / 2 HOURS
___A-7 What’s New in Turfgrass Management for 2020*

SESSION B WORKSHOPS
___B-1 From Breeding to Main Street
___B-2 Perspectives on Urban Forestry
___B-3 Wood Waste Utilization for a More Circular Economy
___B-4 Pitfalls to Mixing Products*
___B-7 Plant Propagation at McKay Nursery

SESSION C WORKSHOPS
___C-1 Plant Propagation at McKay Nursery
___C-2 Wood Waste Utilization for a More Circular Economy
___C-3 The Devil’s Backbone: A Park System is Born
___C-4 Pitfalls to Mixing Products*
___C-5 The Law-borist: Enforcing Municipal Tree Preservation Laws
___C-6 Are You a Leader or a Boss?
___C-7 Continuing Instructional Course for Pesticide Applicators** / LIMIT 50 PER SESSION

SESSION D WORKSHOPS
___D-1 Comparing the Missouri Gravel Bed and a Wood Chip Production Method for Tree Growth
___D-2 Taming the Top 10 Insect Pests of Woody Landscape Plants*
___D-3 What Did the Chicken Do?
___D-4 What You Need to Know About Hardscape Installations, Tools, Technology, and Crew Efficiency / 3 HOURS
___D-5 Diagnosing Health Problems of Woody Plants*
2 HOURS / LIMIT 30 PER SESSION
___D-6 The Current State of Utility Vegetation Management (UVM) in North America
___D-7 Urban Wood Utilization

SESSION E WORKSHOPS
___E-1 Avoiding Tank Mixing Errors*
___E-2 Majestic Trees: Why They Matter and How to Preserve Them
___E-3 What Did the Chicken Do?
___E-6 Stewardship Through Integrated Vegetation Management on Right-of-Ways*
___E-7 Urban Wood Utilization

SESSION F WORKSHOPS
___F-1 Comparing the Missouri Gravel Bed and a Wood Chip Production Method for Tree Growth
___F-2 Protecting Pollinators in Urban Land Care and Best Native and Non-native Woody Plants for Pollinator-friendly Landscapes*
___F-3 Winter Tree Identification 101
___F-5 Life After Death: Repurposing Felled Urban Trees
___F-6 Disaster Response and Preparation
___F-7 What’s New in Turfgrass Management for 2020*

SESSION G WORKSHOPS
___G-1 Avoiding Tank Mixing Errors*
___G-2 Majestic Trees: Why They Matter and How to Preserve Them
___G-3 Winter Tree Identification 101
___G-4 The Law-borist: Enforcing Municipal Tree Preservation Laws
___G-5 Life After Death: Repurposing Felled Urban Trees
___G-6 Workforce Retention and Recruitment
___G-7 Continuing Instructional Course for Pesticide Applicators**

*QUALIFYING PESTICIDE APPLICATOR WORKSHOPS
**REQUIRED PESTICIDE APPLICATOR WORKSHOP
**GENERAL INFORMATION**

**It's Easy to Register**
Select from these registration options: [register online](mailto:registeronline) at regcytes.extension.iastate.edu/shadetree or mail to Registration Services, 1601 Golden Aspen Drive, Suite 110, Ames IA 50010.

**Change in Plans**
If you cannot attend the Short Course you may send a substitute (please let us know in advance who will be substituting). If you cancel your registration on or before February 21, 2020, your registration fee will be refunded less a $20 processing charge. No refunds will be made after February 21, 2020. Email us at registrations@iastate.edu.

**Travel**
Centrally located in the Midwest, Ames is easily accessible by transcontinental U.S. Highways 30 and 69, as well as Interstate 35. The Des Moines International Airport is located 40 minutes south of Ames and is served by major airlines. Major car rental agencies maintain offices in the airport.

**Directions and Parking**
The Scheman Building is located in the Iowa State Center on the Iowa State University campus. From Interstate 35, take U.S. Highway 30 west into Ames. Take the University Boulevard exit and go north past Jack Trice Stadium. The Scheman Building is located between Hilton Coliseum and C.Y. Stephens Auditorium. Free parking is available adjacent to the Scheman Building.

**Further Information**
For questions about program content, call Jeff Iles (515) 294-3718. For registration questions, contact Registration Services at (515) 294-6222 or [email](mailto:email) registrations@iastate.edu.

**Tax Deduction**
The expense of continuing education, when taken to maintain and improve professional skills, is tax deductible. Contact your accountant for details.

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**Lodging in Ames** Please make your own lodging arrangements. Accommodations are listed in miles from the Iowa State Center.

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<th>Mileage</th>
<th>Phone</th>
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<tr>
<td>Gateway Hotel</td>
<td>(1.5)</td>
<td>(515) 292-8600</td>
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<tr>
<td>Best Western Plus Inn &amp; Suites</td>
<td>(1.5)</td>
<td>(515) 296-2500</td>
</tr>
<tr>
<td>Radisson Hotel Ames Conference Center</td>
<td>(1.6)</td>
<td>(515) 268-8808</td>
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<tr>
<td>The Days Inn</td>
<td>(1.6)</td>
<td>(515) 203-3080</td>
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<tr>
<td>Comfort Inn &amp; Suites</td>
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<tr>
<td>Hampton Inn</td>
<td>(4.7)</td>
<td>(515) 232-5510</td>
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SHADE TREE SHORT COURSE

Trees FOR A Purpose

AND Repurpose

FEBRUARY 25-27, 2020

Scheman Continuing Education Building
Iowa State University | Ames, Iowa

SAVE THE DATE
FEBRUARY 23-25, 2021