The 48th Annual
Minnesota Shade Tree Short Course

A two-day course for everyone involved in urban forestry and arboriculture. ISA Certified Arborist CEUs are available for most sessions.

March 16-17, 2010
Bethel University, Arden Hills, Minnesota
**In Memory of Patrick**

Our friend and colleague Patrick Weicherding passed away in 2009. Throughout his illness, he continued to be an active, contributing member of the STSC Steering Committee as he had for many years. His dedication to urban forestry and teaching defined his long and respected career, and the STSC’s dedication to quality and unbiased education is a reflection of Patrick’s work. The 2010 Minnesota Shade Tree Short Course is dedicated to the memory and spirit of Patrick.

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**Minnesota’s Unwanted Stimulus Program**

Emerald ash borer was the talk of the town for much of Minnesota, for most of 2009. Minnesota has joined the unlucky ranks of those states where the shiny, hungry beetle has taken up residence. With a “control history” of less than 10 years, urban forest health specialists have been learning from each other and scrambling to make the right, new decisions…all with little time to spare. Who would have ever predicted that an ash tree would stimulate so much interest and planning, would get us to focus on inventorying our tree populations, meet weekly or monthly to plot action plans, invest hundreds of thousands of dollars in chemical controls, and remove trees before they were dead?

This year’s Shade Tree Short Course will help you prepare for, manage, and recover from emerald ash borer, pine problems, gypsy moths, oak diseases, and just about anything else that keeps you up at night. No one responds to your worst tree nightmares like the Minnesota Shade Tree Short Course Steering Committee and the expert presenters who will join us in 2010. We will also review the best new trees and shrubs, teach you some new climbing techniques, and demonstrate how to drop large branches and trees without incurring or causing damage. Our local and national experts will review the most recent research in urban arboriculture and root health, as well as take you on an international tour of some of the most beautiful botanic gardens in the world.

For 48 years, arborists, tree inspectors, urban foresters, landscape architects, master gardeners, and tree care advisers have come together to learn, recertify, reconnect with old friends, and make new ones. There are many conference and workshop options for you to choose from during the year, but the Minnesota Shade Tree Short Course works hard to give you the highest quality for the most reasonable price: one registration fee. No additional parking fees. No need to go off-site to find a restaurant. No need to look for a vending machine. It’s all included, and we’re easy to find – Bethel University is less than a minute off of I-694. No congestion or traffic lights to stack up behind, just lots of trees, water, and open space. (Okay, in March, lots of trees, ice, snow, and open space.) Join us again or for the first time…you won’t regret it!

**Minnesota Shade Tree Short Course New Features in 2010:**

**Extended Hours**

There will be at least 15 minutes between the end of concurrent sessions and the beginning of the next. As wonderful as Bethel University is as a host site, it can take some time to travel from one session to the next. Your movement between sessions will be more of a stroll than a trot!

**45-Minute Sessions**

Several sessions are 45 minutes in length to accommodate the extended time between concurrent sessions. However, there will still be 50, 55, and double-sessions for those topics that require the extra time.

**Exhibit Area Classes**

They were a hit last year, and they’ll be back for 2010. This will be an opportunity for you to take a tree ID quiz and add to your CEUs if you are an ISA Certified Arborist. Or, you can learn some all-purpose climbing techniques or what emerald ash borer tunneling looks like under the bark. All of the break-time sessions are 15 minutes long which gives you the opportunity to visit booths and vendors, have a cold drink, and take a few minutes to learn something new.

**Book Signings**

Some of the leading experts in urban forestry, arboriculture, and entomology will be signing copies of their books during the exhibit area sessions. Chad Giblin has become one of the most recognized experts in developing young elms in the landscape and will be introducing and signing his new book on pruning elms. Jeff Jepson, the highly regarded former MSA Chapter Tree Climbing Champion, seasoned arborist, and author of two arboricultural books will be signing both. And wow, have you seen Jeff Hahn’s new book on bugs? It’s great, and you’ll want a copy with Jeff’s signature, so he’s joining us, too.

**Bethel University**

Bethel University offers beautiful facilities inside and out with free and convenient parking in the West Parking Lot and a spacious cafeteria. The campus is located in Arden Hills, a short distance from Snelling Avenue and I-694, (see map on page 16) with an exceptional and varied landscape for outdoor sessions. Make sure that you dress appropriately for the weather if you will be attending the breakout sessions with outdoor activities. Bethel University is a nonsmoking campus (smoking allowed in designated outdoor areas). The program begins at 7:30 a.m. on Tuesday, March 16 and concludes at 3:45 p.m. on Wednesday, March 17.

**Certification and Credit**

- Certified tree inspectors will be recertified for 2011 by attending the entire short course.
- ISA CEUs will be given for all sessions.

**Please Note:**

- Recertification for pesticide applicators is not available at this workshop.
- New Tree Inspector classes and testing are not available at this workshop.
Conference at a Glance

General Sessions (in order of presentation)
The general sessions and track menus listed below enable you to choose sessions of interest from the many that are offered during the conference. Many courses provide information pertaining to multiple tracks. You do not have to stay within a track. Feel free to select sessions among any of the tracks that appeal to you.

Introductory Sessions
Introductory sessions are most valuable for people just entering or re-entering the fields of arboriculture, urban forestry, or urban natural resource management. These sessions provide a sound foundation for understanding tree biology, tree I.D., diagnosing problems, soil science, and plant maintenance.

- Are You Purchasing the Best Nursery Stock?
- Best New Trees and Shrubs for Minnesota Landscapes
- Common Tree and Shrub Insects
- Diagnosing Tree Diseases and Disorders
- Pruning for Structure, Not Just Fruit
- Tree Biology
- Trees, Shrubs: Compound Leaved Trees

Technical Sessions
These sessions build on your basic understanding of arboriculture and urban forestry with new, specific, or more technical information.

- 15 Years of Root Research at the U
- Are You Purchasing the Best Nursery Stock?
- Best New Trees and Shrubs for Minnesota Landscapes
- Common Tree and Shrub Insects
- Diagnosing Tree Diseases
- EAB: Now That It’s Here, What Do We Do?
- Gypsy Moth in Minnesota: Damage, Range, Control Tactics
- Physics for Arborists

Concurrent Sessions (in alphabetical order)

Key: ☀ 1 hour and 45-minute session ☐ only offered one time ☮ pre-registration required

GS I – Climate Change in Minnesota
GS II – Great Moments in History and How Fungi Got Us There
GS III – Gardens of the World
GS IV – Characterizing the Risks that the Aging Forests Pose to an Overhead Distribution System
GS V – Trees Have Hormones…And They Know How to Use Them!
GS VI – Greening Our Neighborhoods

Advanced Technical Track
Advanced sessions tend to be very topic-specific and assume that you have the experience and education for more technically challenging classes. For example, rather than a primer on diagnosing diseases, advanced technical sessions will focus on one or two diseases and discuss the pathogen(s), life cycles, various control tactics, and recent research.

- Gypsy Moth in Minnesota: Damage, Range, Control Tactics
- Problems with Pines
- Sugar Maple Decline: Is This the End of Sugar Maples in Urban Landscapes?
- Tree Diseases to Watch For

Community Forestry
These sessions will help volunteers, advocates, or decision-makers at any level to make better-educated choices.

- Budget Slashed? Draft a Volunteer Work Force
- Developing Neighborhoods for Commerce, People, and Trees
- EAB: Now That It’s Here, What Do We Do?
- Markets for Urban and Community Ash Trees in Minnesota
- Recovering Communities After Catastrophic Losses

International Society of Arboriculture, Certified Arborist Exam Preparation Track
These selected sessions will greatly assist your preparation to take the certification exam. Select sessions that you feel will strengthen your weaknesses.

- 15 Years of Root Research at the U
- Are You Purchasing the Best Nursery Stock?
Registration Fees
The early registration fee, received by March 2 is $165 per person. The regular fee after March 2 and at the door is $180 per person. The registration fee includes general sessions, breakouts, breaks, lunches, and handouts.

Student Rate
Student registration is $40.00 per student.
To obtain the student rate, a statement from the student’s academic adviser must accompany the registration form. The statement must confirm the student’s current enrollment in a post-secondary, degree program, along with the institution’s name, the adviser’s name, and the adviser’s signature.

Tree Board or Park Board Member Rate
Tree Board or Park Board member registration is $85.00 per person.
To obtain the tree board/park board member rate, documentation from the city that the person is a member of the tree or park board must accompany the registration form. Write “Tree Board Member Option 086” on your registration form.

Tree House of Horrors – 2010
The Tree House of Horrors:
Your Gateway to Diagnosing Tree Health Problems!
Fresh samples from common tree problems will test your diagnostic skills. As always, the interesting samples of tree morphology, decay, embedded artifacts in trees and other phenomena provided by local arborists, the University of Minnesota, Minnesota Department of Transportation, and Minneapolis Park Board collections will be on display.
Back by popular demand will be the poster displays of our current research projects at the University of Minnesota as well as the latest information on invasive insect pests of trees and shrubs. As always, there will be experts on hand to discuss those tree health questions that you always seem to encounter on your job.

The Tree House of Horrors is organized by:
Dave Hanson, Department of Forest Resources, College of Food, Agricultural and Natural Resource Sciences, University of Minnesota and Don Mueller, Minnesota Department of Natural Resources

Exhibit Area Classes
The exhibit area “mini-classes” that we instituted in 2009 were so well received that they will be back for 2010. These 15-20 minute classes, offered in the exhibit area during the open hours, will cover the following topics:
• How Do I Know if It’s EAB? And if It Is, What Can I Do?
• How Can I Satisfy the Quarantine Restrictions on Wood Chip Size? Do I Need to Buy a New Chipper?
• What Can I Do with Wood Generated from Ash Removal? Are There Any Options Other Than Burning, Burying, Mulching with Wood Chips?
• My Community Needs to Inventory its Tree Population…What Kind of Equipment Should I Buy?
• My Community Is Reforesting with Smaller Trees, but the Deer Eat Everything. Is There Anything that Really Controls Critter Damage?
A tree identification quiz will be available on both days in the THOH for everyone, and ISA Certified Arborists may earn 1.0 CEUs for correctly identifying 72 percent of the tree samples.

Further Information
Exhibits
Commercial and agency exhibits will be available each day. Everyone is invited to stop by and exchange information at booths located throughout the center. Exhibit space is coordinated by Ben Johnson, who can be reached by phone or e-mail – 952-252-0527 or bjohnson@rainbowtreecare.com.

Tree Inspector Information
Stephen Schott or Michelle Jacobson
Minnesota Department of Natural Resources
Division of Forestry - Box 44
500 Lafayette Rd.
Saint Paul, MN 55155
651-259-5306

Registration Questions
612-625-2900

For More Information
Heather Dorr or Clair Daley
University of Minnesota
612-624-3492
ccconf3@umn.edu

MSA (Minnesota Society of Arboriculture) Winter Picnic
The Tuesday, March 16 business meeting will begin at 4:30 p.m., followed by a picnic at 5:30 p.m. The picnic offers great food and is an opportunity to network with speakers and participants. Free to Shade Tree Short Course participants. Maps provided at registration desk.
Location: To Be Determined. Please check the Web site for updated information at www.cce.umn.edu/shadetree
## International Society of Arboriculture (ISA) Continuing Education Units (CEUs)

Attendance sheets will be offered immediately after each session. For more information regarding ISA CEUs, please visit [http://www.isa-arbor.com/certification/ceus.aspx](http://www.isa-arbor.com/certification/ceus.aspx).

### ISA Certification Code Information

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<th>Code</th>
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<tr>
<td>A</td>
<td>Certified Arborist</td>
<td>U</td>
<td>Utility</td>
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<td>T</td>
<td>Certified Tree Worker</td>
<td>Bs</td>
<td>BCMA Science</td>
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<tr>
<td>M</td>
<td>Municipal</td>
<td>Bp</td>
<td>BCMA Practice</td>
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<tr>
<td>Bm</td>
<td>BCMA Management</td>
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### Session Title Speaker CEU Hours

#### General Sessions

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<th>General</th>
<th>Title</th>
<th>Speaker</th>
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<tbody>
<tr>
<td>General</td>
<td>Climate Change in Minnesota; Great Moments in History and How Fungi Got Us There; Gardens of the World</td>
<td>Corney, Hudler, Olin</td>
<td>1.75 AMBm</td>
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<tr>
<td>General</td>
<td>Characterizing the Risks that the Aging Forests Pose to an Overhead Distribution System; Trees Have Hormones...And They Know How to Use Them; Greening Our Neighborhoods</td>
<td>Goodfellow, Murray, Walljasper</td>
<td>1.75 AMUTBp</td>
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#### Introductory Sessions

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<th>Speaker</th>
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<tr>
<td>Concurrent Session</td>
<td>Are You Purchasing the Best Nursery Stock?</td>
<td>Ronald</td>
<td>.75 AMBm</td>
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<tr>
<td>Concurrent Session</td>
<td>Best New Trees and Shrubs for Minnesota Landscapes</td>
<td>Lonnee</td>
<td>1 AMBs</td>
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<tr>
<td>Concurrent Session</td>
<td>Common Tree and Shrub Insects</td>
<td>Hahn</td>
<td>.75 AMBs</td>
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<tr>
<td>Concurrent Session</td>
<td>Diagnosing Tree Diseases</td>
<td>O’Brien</td>
<td>1 AMBs</td>
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<tr>
<td>Concurrent Session</td>
<td>Pruning For Structure, Not Just Fruit</td>
<td>Johnson</td>
<td>.75 ATMBp</td>
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<tr>
<td>Concurrent Session</td>
<td>Tree Biology</td>
<td>Courneya</td>
<td>.75 ATMUBp</td>
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<tr>
<td>Concurrent Session</td>
<td>Trees, Shrubs: Compound Leaved Trees</td>
<td>Hanson</td>
<td>1.75 ATMUBp</td>
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<tr>
<td>Exhibit Area Session</td>
<td>Tree ID Quiz. 20 Samples. 70% Passing Rate To Earn CEUs</td>
<td>Johnson/Hanson</td>
<td>1 ATMBs</td>
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#### Technical Sessions

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<td>Concurrent Session</td>
<td>15 Years of Root Research at the U</td>
<td>Johnson</td>
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<td>Ronald</td>
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<td>Concurrent Session</td>
<td>The Case for Utility Vegetation Management: Research, Development, and Demonstration</td>
<td>Goodfellow</td>
<td>1 ATUMBp</td>
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<tr>
<td>Concurrent Session</td>
<td>The Changing Landscape of Tree Inventories: GIS and Tree Inventories</td>
<td>Flott</td>
<td>.75 AMBm</td>
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<td>Concurrent Session</td>
<td>Markets for Urban and Community Ash Trees in Minnesota</td>
<td>Jacobsson and Sorensen</td>
<td>1 AMBm</td>
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<td>Concurrent Session</td>
<td>Nature’s Graffiti: Understanding Invasiveness</td>
<td>Murray</td>
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<tr>
<td>Concurrent Session</td>
<td>Physics for Arborists</td>
<td>Kezar</td>
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<td>Pruning for Structure, Not Just Fruit</td>
<td>Johnson</td>
<td>.75 ATMBp</td>
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<tr>
<td>Concurrent Session</td>
<td>Redirects, Double-Crotchting and Repositioning</td>
<td>Wasmund and Taylor</td>
<td>1 ATMBp</td>
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<td>Concurrent Session</td>
<td>Tree Root Ball Washing: A Better Way to Prepare Plants for the Landscape?</td>
<td>Flott</td>
<td>1 AMBp</td>
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<tr>
<td>Concurrent Session</td>
<td>What Every Arborist Should Know About Utility Arboriculture</td>
<td>Olson</td>
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#### Advanced Technical Sessions

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<tbody>
<tr>
<td>Concurrent Session</td>
<td>Gypsy Moth in Minnesota: Damage, Range, and Control Tactics</td>
<td>Kyhl</td>
<td>1 AMBp</td>
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<tr>
<td>Concurrent Session</td>
<td>Problems with Pines</td>
<td>Stanosz</td>
<td>.75 AMBm</td>
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<tr>
<td>Concurrent Session</td>
<td>Sugar Maple Decline: Is This the End of Sugar Maples in Urban Landscapes?</td>
<td>Smith</td>
<td>.75 AMBm</td>
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<tr>
<td>Concurrent Session</td>
<td>Tree Diseases to Watch For</td>
<td>Feeley</td>
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#### Community Forestry Sessions

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<tr>
<td>Concurrent Session</td>
<td>Budget Slashed? Draft a Volunteer Work Force</td>
<td>Erhardt</td>
<td>1 AMBm</td>
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<tr>
<td>Concurrent Session</td>
<td>Developing Neighborhoods for Commerce, People, and Trees</td>
<td>Richardson and Frank</td>
<td>.75 AMBm</td>
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<tr>
<td>Concurrent Session</td>
<td>EAB: Now That It’s Here, What Do We Do?</td>
<td>Abrahamson and Holman</td>
<td>.75 AMBm</td>
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<td>Concurrent Session</td>
<td>Markets for Urban and Community Ash Trees in Minnesota</td>
<td>Jacobson and Sorensen</td>
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<td>Concurrent Session</td>
<td>Recovering Communities after Catastrophic Losses</td>
<td>Robinson</td>
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Program – Tuesday, March 16, 2010

6:45 a.m.
Registration begins

General Sessions – Benson Great Hall

7:30
Welcome and Opening Remarks
Gary Johnson, Department of Forest Resources, College of Food, Agricultural and Natural Resource Sciences, University of Minnesota

7:45
GSI: Climate Change in Minnesota and the Effects on Vegetation
Jeff Corney

8:40
GSII: Great Moments in History and How Fungi Got Us There
George Hudler

9:35
GSIII: Gardens of the World
Peter Olin

10:30-12:15 p.m.
Exhibit Area and the Tree House of Horrors

11:00
Group 1 Lunch Break

11:20
Group 2 Lunch Break

11:45
Group 3 Lunch Break (MSA members to eat and hold Business Meeting)

12:15 p.m.
Concurrent Sessions Begin

12:15-1:00

Are You Purchasing the Best Nursery Stock? Philip Ronald
Best New Trees and Shrubs for Minnesota Landscapes, Debbie Lonnee
The Changing Landscape of Tree Inventories: GIS and Tree Inventories, Jim Flott
Common Tree and Shrub Insects, Jeff Hahn
Developing Neighborhoods for Commerce, People, and Trees, Kit Richardson and David Frank
Recovering Communities After Catastrophic Losses, Terry Robinson
Sugar Maple Decline: Is This the End of Sugar Maples Urban Landscapes? Kevin Smith
Tree Diseases to Watch For, Tivon Feeley

1:15-2:00

15 Years of Root Research at the U, Gary Johnson
EAB: Now that It’s Here, What Do We Do? Mark Abrahamson and Ken Holman
Nature’s Graffiti: Understanding Invasiveness, Joe Murray
Physics for Arborists, Sam Kezar
Problems with Pines, Glen Stanosz
Tree Biology, Doug Courneya
What Every Arborist Should Know About Utility Arboriculture, Andy Olson

2:00-2:45

Exhibits, Refreshments, and “Mini-Sessions” in the Exhibit Hall

2:45-3:45

Best New Trees and Shrubs for Minnesota Landscapes, Debbie Lonnee
Budget Slashed? Draft a Volunteer Work Force! Sue Erhardt
Diagnosing Tree Diseases, Joe O’Brien
Gypsy Moth in Minnesota: Damage, Range, and Control Tactics, John Kyhl
Markets for Urban and Community Ash Trees in Minnesota, Keith Jacobson and Lance Sorenson
Redirects, Double-Crotching, and Repositioning, Pierce Wasmund and Taylor Hamel
Tree Root Ball Washing: A Better Way to Prepare Plants for the Landscape? Jim Flott

Concurrent Sessions

KEY FOR CONCURRENT SESSIONS

1 hour and 45-minute session
only offered one time
Pre-registration required
Introductory Session
Technical Session
Advanced Technical
Community Forestry
ISA Exam Prep

1 hour 45-minute Sessions

12:15-2:00

Trees, Shrubs: Trees with Compound Leaves, Dave Hanson

3:45
Adjourn

4:15
Minnesota Society of Arboriculture (MSA) Business Meeting – Como Park

5:30
MSA Winter Picnic – Como Park (food and drink compliments of MSA)
Program – Wednesday, March 17, 2010

General Sessions – Benson Great Hall

7:45 a.m.
GSIV: Characterizing the Risks that the Aging Forests Pose to an Overhead Distribution System
John Goodfellow

8:40
GSV: Trees Have Hormones… And They Know How to Use Them
Joe Murray

9:35
GSVI: Greening Our Neighborhoods
Jay Walljasper

10:30-12:15 p.m.
Exhibit Area and the Tree House of Horrors

11:00
Group 1 Lunch Break

11:20
Group 2 Lunch Break

11:45
Group 3 Lunch Break

12:15 p.m.
Concurrent Sessions Begin

**KEY FOR CONCURRENT SESSIONS**

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- only offered one time
- Pre-registration required
- Introductory Session
- Technical Session
- Advanced Technical
- Community Forestry
- ISA Exam Prep

**Concurrent Sessions**

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Concurrent Sessions

- 1 hour and 50-minute session
- only offered one time
- Pre-registration required
- Introductory Session
- Technical Session
- Advanced Technical
- Community Forestry
- ISA Exam Prep
Great Moments in History and How Fungi Got Us There
The University of Notre Dame football team would not be a powerhouse among football if it were not for fungi, according to George Hudler, of Cornell University. George is not only an outstanding, popular speaker and professor of plant pathology, he is a powerful advocate of fungi - and if asked, will excitedly speak of the greatest events in the history of mankind. From Moses finding the Ten Commandments, to the Confederate states losing the Civil War, to Mark McGwire’s record-breaking home run - all of these are the result of fungi! Welcome home one of Minnesota’s native sons, and get excited about fungi. George Hudler

Greening Our Neighborhoods
Jay Walljasper, a resident of Minneapolis, has spent a professional lifetime examining neighborhoods of all sorts. Some of the neighborhoods are friendly, functional and full of enthusiasm and teamwork, more akin to villages within a larger city – and others are not. In this session, Jay will describe what constitutes a functional neighborhood, from the perspectives of its inhabitants, its infrastructure, and the role that the urban forest plays to pull everything together. Jay Walljasper

Trees Have Hormones…and They Know How to Use Them
When you leave this session, you will have a new appreciation for the long-term, internal effects that plants experience from seemingly noble maintenance practices such as pruning, fertilization and planting. This session will review the plant hormones that regulate plant growth, reproduction, and death, and more importantly, how we as tree care specialists either assist or hinder normal plant functions. To top it off, it will be an entertaining session, “punctuated with humor.” Joe Murray

Concurrent Sessions (in alphabetical order)

Are you Purchasing the Best Nursery Stock?
Learn what constitutes good trees from poor trees when purchasing from a grower. Most plants look decent from the ground up, but quality nursery stock is an easy thing to say - and a complicated thing to define. Philip joins us from Jeffries Nurseries in Manitoba, Canada, a major supplier of wholesale nursery stock for Western Canada and the United States, and a nursery with a long-standing reputation for growing the highest quality trees and shrubs. Philip Ronald

Best New Trees and Shrubs for Minnesota Landscapes
Just about every community and property-owner is asking the same question: what should we replace our ash trees with? This session features the best of the new introductions; some you may be familiar with, and others will be a real treat for you. Debbie is a popular speaker at urban forestry and landscape conferences, and brings with her decades of experience in plant materials - and her photographs are incredible. Debbie Lonnee

Budget Slashed? Draft a Volunteer Work Force
In these hard economic times as budgets are slashed or eliminated, help your tree program survive, even thrive. Learn how Casey Trees, a small, not-for-profit in the nations’ capital, works with thousands of volunteers to fulfill its mission to restore, enhance, and protect the tree canopy of the District. Sue Erhardt

The Case for Utility Vegetation Management: Research, Development, and Demonstration
The Utility Vegetation Management (UVM) industry has a long history of innovation. A review of successful RD&D efforts sets the stage for this important discussion. Findings from industry benchmarking studies and a recent UAA survey of research, development, and demonstration efforts in the UVM industry will be presented, and the path for more RD&D efforts will be explored. John Goodfellow

The Changing Landscape of Tree Inventories: GIS and Tree Inventories
Are GPS and GIS right for your operation? What are they and how can they be used in the office and the field to manage your tree population? These questions and more will be discussed in this presentation on GPS/GIS applications for tree inventories.

Common Tree and Shrub Insects
We will learn about common tree and shrub insect problems, including sawflies, Japanese beetles, and borers with an emphasis on what was common in 2008. We will discuss how to identify these insects, give information on important biology, and look at the type of injury they cause. We will then discuss the non-chemical and pesticide options to manage them. Jeff Hahn

Developing Neighborhoods for Commerce, People, and Trees
If you are in the throes of redeveloping downtown areas and are balancing the demands for more parking, more visual access to businesses, more and healthier trees, more recreational spaces for people, restrictive guidelines, and declining budgets, you really need to attend this session. Both of these gentlemen have extensive histories of successfully working with urban areas, whether it’s a large city like Minneapolis, or a small neighborhood or community. Learn to work successfully using guidelines to create livable commercial areas. Some good and not-so-good case studies will be discussed as examples of greening downtown districts. Kit Richardson and David Frank

Diagnosing Tree Diseases
Trees suffer from a number of conditions including environmental stress, insect infestation, poor cultural practices, and disease. Before management practices can begin, a proper diagnosis of the problem must be made. Come to learn how to diagnose tree diseases from signs and symptoms. Learn which symptoms can be shared among many problems, and which are diagnostic. Find out what factors should be taken into account when diagnosing a disease, what plant parts should be examined, what to look for, and when to send a sample to the clinic. Joe O’Brien

EAB: Now that It’s Here, What Do We Do?
Despite all of the information that is available, answering questions from your clients or constituency isn’t easy. What chemical options are best? When should the infested trees be removed? Where should the fallen ash be stored, and for how long? Have any inventories been conducted? For our community? Are there recommendations for reforestation or preforestation? Ken and Mark will do their best to give you the most complete, unbiased, best-knowledge-to-date answers in this session. Mark Abrahamson and Ken Holman

Gardens of the World
For many years, Peter Olin guided the development of Minnesota’s most famous botanic garden, the Minnesota Landscape Arboretum. During the course of his leadership, Peter had the opportunity to visit other beautiful gardens around the world, selecting some of the best examples of garden design and management to implement at home. Get ready for 50 minutes of botanical eye candy. Peter Olin

Climate Change in Minnesota
How will climate change affect Minnesota? How do scientists know what will change? Come hear Jeffrey Corney, associate director of the Cedar Creek Ecosystem Science Reserve, describe the changes Minnesota will experience and the studies which are being done to help create these future climate models. Cedar Creek Ecosystem Science Reserve is home to a rare meeting of three distinct ecosystems (prairie, deciduous forest, and boreal forest) making it an ideal location to observe how ecosystems (prairie, deciduous forest, and boreal forest) will respond to climate change. Jeffrey Corney

Distribution System
Aging Forests Pose to an Overhead Distribution System
Recent storm events in many parts of the country, especially the eastern half, have caused severe damage to energy delivery systems and caused extensive interruptions to electric service. In many urban areas, the aging population of large and potentially over-mature trees may contribute to the damage experienced. Results from investigations in overhead distribution system damage from aging urban forests will be discussed. John Goodfellow

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Fifteen (15) Years of Root Research at the U (of Minnesota)
The University of Minnesota is one of the leaders in root research as it impacts tree health, condition, and longevity. The research team that includes faculty and researchers from the Departments of Forest Resources and Horticultural Science as well as University of Minnesota Extension has conducted field research ranging from the long-term effects of growing and planting techniques to some pretty severe “root pruning” tactics. This session will focus on the results of several projects, and make recommendations for the growing, planting, and care of landscape trees. Gary Johnson

Gypsy Moth in Minnesota: Damage, Range, and Control Tactics
There is probably no other entomologist in the Midwest who can present this session as well as John. He has worked extensively with Wisconsin for several years, slowing the spread of gypsy moth, and is now working with Minnesota’s front line of defense. What kind of damage does a gypsy moth infestation incur? Is it any worse than forest tent caterpillar? How far into Minnesota can we expect it to venture? Which trees are most at risk, and finally, what can be done to “control” the insect? John Kyhl

Markets for Urban and Community Ash Trees in Minnesota
Use of market forces to facilitate utilization can be an important strategy for reducing the cost and increasing the effectiveness of urban tree management and sanitation work, necessitated by EAB’s arrival. The presentation will give an overview of current wood product markets for urban and community ash resources, a “crystal ball” of future markets, as well as an overview of marketing resources for resource managers and homeowners. Keith Jacobson and Lance Sorensen

Nature’s Graffiti: Understanding Invasiveness
This session is an excellent primer on invasive species, the different methods they use to dominate and affect native trees and shrubs, the genetic armor that invasive plants wear, and a realistic perspective on the prospect of controlling them. If Sun Tzu was right, then “know thy enemy” should be your mantra and your first goal should be to attend this informative and entertaining session. Joe Murray

Physics for Arborists
(Note: Enrollment limited to 20 people each session; preregister at no additional cost.) This session focuses on working with heavy branches, large trees in residential spaces, and using some basic physics to avoid damaging property or arborists. This session will begin in the classroom but quickly move outside. Dress appropriately. If there is snow on the ground or it’s windy, wear boots and warm clothing. Sam is an accomplished arborist, trainer, and teacher – and even if you have been working around trees for a while, you will pick up some new techniques. Sam Kezar

Problems with Pines
If you have not been to a Glen Stanosz session before, you are in for a treat. He’s a plant pathologist with a sense of humor and a gift for teaching. Pines are a staple in Minnesota landscapes, and they have a host of disease issues. Glen is a noted plant pathologist with a lot of experience investigating pine diseases, as well as other problems with conifers. If you are a commercial or consulting arborist, this session is a “must see” for you. Glen Stanosz

Pruning for Structure, Not Just Fruit
Fruit trees are often a frustration for homeowners, as well as the arborists who are asked to “fix them up” 15 years after they have been planted. Jeff will review the basics of not only pruning fruit trees (primarily apples) that yield a bounty of fruit, but of developing trees that are structurally sound and long-lasting additions to the edible, urban forest. Jeff Johnson

Recovering Communities after Catastrophic Losses
Hurricanes, tornados, floods, and fires don’t just kill trees and wipe out urban forests - they can damage or destroy a community’s social fabric and spirit. This session will feature some lessons learned about community recovery, including recovery of the urban forest, and the role that trees play in recovery of the community. Terry has been a volunteer, helping communities such as those affected by hurricane Katrina in Louisiana, to those as close as Iowa City after the recent catastrophic flood. He’s watched, he’s helped, he’s learned. Terry Robinson

Redirects, Double-Cotching, and Repositioning
Pruning mature trees is not about having the strength to bench-press 450 pounds or hauling up the biggest chainsaw - it’s about being efficient and safe. This session will focus on both climber safety in the trees, as well as developing the efficiency to increase your production and profit. If you have seen Pierce and Taylor climb and work a tree before, you know that two of the finest are teaching this session. Pierce Wasmund and Taylor Hamel

Sugar Maple Decline: Is This the End of Sugar Maples in Urban Landscapes?
With all the attention surrounding green ash lately, the decline in the health and condition of sugar maples in our public landscapes has gone almost unnoticed. How could a Minnesota native be declining so steadily? Are forests the only landscapes worthy of sugar maples? Kevin Smith, noted plant pathologist from the US Forest Service and perennial favorite of the STSC, will review what it takes to grow healthy maples, what the urban landscapes don’t have (or have too much of!), and speculate on the future of one of Minnesota’s most beloved trees. Kevin Smith

Tree Biology
This session will cover tree biology from the rhizosphere to the apical buds. An understanding of tree biology is important for all aspects of tree care from planting through removal. All of our tree care practices should be based on a fundamental understanding of tree biology and physiology. This session will illustrate tree biology and relate it to your everyday job of caring for trees. Doug Courneya

Tree Diseases to Watch For
Get caught up on some new and emerging problems that are likely to challenge your diagnostic skills in the future. Thousand cankers of walnut, Tubacca leaf spot on oak, and bacterial leaf scorch will be featured. You will soon find that Tivon is one of the more accomplished forest health specialists and teachers, and you’ll have a hard time leaving this classroom. Tivon Feeley

Tree Root Ball Washing: A Better Way to Prepare Plants for the Landscape?
Each year, we offer at least one controversial session – and this is it. Are you sick and tired of purchasing plants that have dysfunctional root systems that shorten their lives in the landscape, or are you satisfied with bur oaks that live for 25-30 years? Jim is not satisfied, and he’s doing something about it. Jim will “demonstrate” one of the more controversial pre-planting treatments for bailed and burlapped as well as containerized trees. And despite the public outcries of “that won’t work!” - It works. Jim Flott

Trees, Shrubs I.D.: Trees with Compound Leaves
Have you ever mistaken a Kentucky Coffeetree with an Amur Corktree? Or a butternut with a pignut? Many of our native and introduced landscape trees have compound leaves - ash, for one. Dave will guide you through the confusion, and point you to the right leaf scars, bundle scars, and all of the features that you will need to know to identify this group of trees. Dave Hanson

What Every Arborist Should Know About Utility Arboriculture
Admit it…We all complain about the way trees are pruned around utility lines, but no one has a perfect resolution. This session will address some of the more common complaints and misperceptions about clearing trees away from energized lines: ROW clearance distances, service interruptions, pruning cycles. Andy will also discuss a recent study conducted by East Central Energy on the return on investments from removing mature trees versus continued pruning. Finally, the relative value of buried versus above-ground utilities will be discussed. Andy Olson
Map and Driving Directions to Bethel University

**From North:** Take I-35W south past I-694 to County Road E2 exit, turn left (east). Proceed to Old Snelling Avenue, turn right (south), and take first left into campus.

**From West:** From I-694, turn south onto I-35W to the County Road E2 exit. Go east to Old Snelling Avenue, turn right, and take first left into campus.

**From East:** From I-694 turn south onto I-35W to the County Road E2 exit. Go east to Old Snelling Avenue, turn right, and take first left into campus.

**From South:** Take I-35W north past I-694 to County Road E2 exit, turn right (east). Proceed to Old Snelling Avenue, turn right (south), and take first left into campus.

**From Downtown St. Paul:** Take I-35E north to I-694 west (see from East).

**From Downtown Minneapolis:** Take I-35W north to County Road E2 exit (see From South).

Register:
1. Online at www.cce.umn.edu/shadetree
2. Fax your registration along with credit card number or purchase order number to 612-624-5359.
3. Mail registration form to:
   University of Minnesota, 20 Coffey Hall, 1420 Eckles Avenue, Saint Paul, MN 55108-6069

Please Note:
1. Please print or type when you fill in the registration form.
2. Use separate forms for each individual. Registration form may be photocopied.
3. We may be working outdoors so dress appropriately.
4. Cell phone etiquette – please remember to turn off your cell phones during all course sessions. Cell phone ringing and talking is disruptive to other participants.

Cancellations
Cancellations received up to five working days before the course are refundable, minus a $30 cancellation fee. After that, cancellations are subject to the entire registration fee. Substituting another person for your registration can be made at any time provided we have a completed registration form for that person.

The University of Minnesota shall provide equal access to and opportunity in its programs, facilities, and employment without regard to race, color, creed, religion, national origin, gender, age, marital status, disability, public assistance status, veteran status, sexual orientation, gender identity, or gender expression.
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