The 47th 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 many sessions.

March 17-18, 2009
Bethel University
Arden Hills, Minnesota

Program Partners
College of Food, Agricultural and Natural Resource Sciences, University of Minnesota
Department of Forest Resources, University of Minnesota
Minnesota Shade Tree Advisory Committee
Minnesota Department of Agriculture
Minnesota Department of Natural Resources
Minnesota Department of Transportation
Minnesota Society of Arboriculture
Minnesota Tree Care Advisor Program
University of Minnesota Extension

Ensuring Tree Health Since 1963

www.cce.umn.edu/shadetree
Introduction
Challenges...that pretty well sums up the urban forestry forecast for at least the immediate future. Aside from declining federal, state, agency, municipal, company, and personal budgets – which for the most part have been lean or declining for several years – Minnesota’s urban forests and the people who cherish and manage them continue to be challenged from just about every direction. Introduced, invasive threats to trees and other natural resources; shifts in labor markets and required basic skills; the demand to perform more and better with fewer resources; tighter “government” regulations; and 10 years of unpredictable weather patterns the country has experienced. A person can give up, whine, and wait for a decision to be made by someone else, or...equip yourself with the best information, the newest skills, and the determination to accept and solve the challenges.

The Minnesota Shade Tree Short Course offers the finest resources for communities and urban foresters that live with positive mental attitudes. Here you find fellowship and the chance to learn from each other, the opportunity to equip yourself with the best and most cutting-edge information needed to solve challenges, and two days of skill development. On March 17 and 18, 2009, there’s an opportunity to learn, become a better employee, and a more effective employer. Not only will there be a total of 37 different general or concurrent sessions, but also the extended exhibit area will offer learning opportunities: knot tying, tree ID quizzes, watering trees (how much, how to), and things that look, smell, and sound like invasive insects, just to name a few.

When money is tight, it should be used wisely. The 2009 Minnesota Shade Tree Short Course has one registration fee. No additional parking fees. No need to go off-site and 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. No traffic lights to stack up behind. Lots and lots of trees, water, and open space. It’s the perfect place to talk about Minnesota’s natural resources, people, and to solve challenges.

New This Year!
One: Extended Hours. There will be at least 15 minutes between the end of a concurrent session 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 this year will be more of a stroll than a trot!

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

Three: Exhibit Area Classes. There will be a formal 45-minute exhibit area break and short topic session each afternoon. 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 rope knots. 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.

Four: Certified Arborist Exam Prep Class. If you are preparing to take the International Society of Arboriculture’s Certified Arborist or Tree Worker’s exam, Gail Nozal and friends will be offering a double session, test preparation workshop during one of the afternoons. A perfect time to meet your Minnesota Society of Arboriculture’s Certification Liaison (Gail) and gain an edge on the examination.

Gary Johnson
Department of Forest Resources, College of Food, Agricultural and Natural Resource Sciences, University of Minnesota

Bethel University
Bethel University offers beautiful facilities inside and out with free and convenient parking in the West Parking Lot. The campus is located in Arden Hills, a short distance from Snelling Avenue and I-694, (see map on page 9) 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 17 and concludes at 3:45 p.m., Wednesday, March 18.

Certification and Credit
Certified tree inspectors will be recertified 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.

Fees
The early registration fee, received by March 3 is $165 per person. The regular fee after March 3 and at the door is $180 per person. The registration fee includes general session, breakouts, breaks, lunches, and handouts.

Student Rate
Student registration received by March 3 is $85 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.

Visit our Web site:

www.cce.umn.edu/shadetree

Table of Contents
Bethel University Information ....................................... 1
Fees ........................................................................... 1
Certification Options .............................................. 3
CEU Information .................................................... 1
Conference At A Glance ............................................ 2
Tree Inspector’s Recertification .................................. 4
Diagnostic Exhibit Area ........................................... 4
Further Information ................................................ 4
Program .................................................................... 5-6
Breakout Sessions ................................................ 5-6
General Sessions ....................................................... 5-6
Presentation Descriptions ....................................... 7-8
Maps ........................................................................ 9
Registration Form ................................................... 10

All photos courtesy of Dave Hanson.

1
CONFERENCE AT A GLANCE

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 from among any of the tracks that appeal to you.

General Sessions
(in order of presentation)
- GS I - Challenges Facing Pollinators and What We Can Do
- GS II - Bringing Nature Home
- GS III - Landscape Consequences of Minnesota Climate Trends
- GS IV - Loss of Tree Canopy by Emerald Ash Borer: An Opportunity to Study the Effect of Trees on Energy Use
- GS V - Tree Care Practices and Arborist Liability
- GS VI - Unraveling the Web of Soil Microbiology

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 courses provide a sound foundation for understanding tree biology, tree I.D., diagnosing problems, soil science, and plant maintenance.
- Chainsaw Safety and Maintenance
- Common Tree and Shrub Insects
- Diagnosing Tree Diseases
- From Traditional to High Tech Climbing
- Let It Be an Oak
- PPE: What Personal Protective Equipment is Available and Required by OSHA?
- These Ain’t Your Grandfather’s Crabapples
- Tree Biology
- Trees, Shrubs: Who’s Who and What’s What in Minnesota

Technical Sessions
These sessions build on your basic understanding of arboriculture and urban forestry with new, specific, or more technical information.
- Developing a Defensible Tree Risk Program
- From a Bird’s Eye View: Urban Tree Canopy Cover Assessments
- From Tree Chipper to Sawmill: Wood Utilization Ideas for Communities
- Getting the Wrong Person Off the Bus!
- How to Select Tough Trees and Shrub for Water-Parched Landscapes
- Inspecting Nursery Stock Before the Purchase
- Let It Be an Oak
- Managing Woodlands with Buckthorn
- New and Emerging Invasive Forest Pests
- Spruce Problem Diagnosis for Yard Trees
- The Secret of Hiring the Right Person
- The Shade Garden
- These Ain’t Your Grandfather’s Crabapples

Advanced Technical Track
Advanced classes 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.
- Advances in Diagnosing Root and Soil Disorders
- Big Trees in the Built-Up Urban Environment: Thriving, not Just Surviving
- Development of the Urban Ecosystem Scoring Method
- Evaluating Tree Decay and Making Difficult Decisions
- Managing Wood Borers: Confronting a Hidden Enemy (Sponsored by Rainbow Treecare)
- Storm Water Management, Urban Heat Island Mitigation, and Biodiversity in Central Cities
- The Management of Parks and Urban Forests Through the Eyes of a Silviculturist: Big Woods Thinking for Urban Scales
- Trees and Underground Pipes from a Problem into a Resource
- Urban Soil Problems and Solutions
- Prefurbia: Reinventing the Suburbs from Disdainable to Sustainable
- Stormwater Management, Urban Heat Island Mitigation, and Biodiversity in Central Cities
- The Management of Parks and Urban Forests Through the Eyes of a Silviculturist: Big Woods Thinking for Urban Scales
- The Secret of Hiring the Right Person
- These Ain’t Your Grandfather’s Crabapples

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.
- Chainsaw Safety and Maintenance
- Common Tree and Shrub Insects
- Diagnosing Tree Diseases
- Developing a Defensible Tree Risk Program
- Evaluating Tree Decay and Making Difficult Decisions
- From Traditional to High Tech Climbing
- New and Emerging Invasive Forest Pests
- PPE: What Personal Protective Equipment Is Available and Required by OSHA?
- Preparing for the Certified Arborist Exam
- Spruce Problem Diagnosis for Yard Trees
- Stormwater Management, Urban Heat Island Mitigation, and Biodiversity in Central Cities
- Tree Biology
- Trees, Shrubs: Who’s Who and What’s What in Minnesota
- Urban Soil Problems and Solutions

Community Forestry
These sessions will help decision-makers at any level, volunteers, or advocates make better educated decisions.
- A Bright Future for the Urban Forest: Can It Be Planned that way?
- Big Trees in the Built-Up Urban Environment: Thriving, not Just Surviving
- Developing a Defensible Tree Risk Program
- Development of the Urban Ecosystem Scoring Method
- From a Bird’s Eye View: Urban Tree Canopy Cover Assessments
- From Tree Chipper to Sawmill: Wood Utilization Ideas for Communities
- From Tree Chipper to Sawmill: Wood Utilization Ideas for Communities
- Prefurbia: Reinventing the Suburbs from Disdainable to Sustainable
- Stormwater Management, Urban Heat Island Mitigation, and Biodiversity in Central Cities
- The Management of Parks and Urban Forests Through the Eyes of a Silviculturist: Big Woods Thinking for Urban Scales
- The Secret of Hiring the Right Person
- These Ain’t Your Grandfather’s Crabapples
## 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

<table>
<thead>
<tr>
<th>Code</th>
<th>Description</th>
<th>Bs</th>
<th>Bp</th>
<th>Bm</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>Certified Arborist</td>
<td></td>
<td></td>
<td>BCMA Science</td>
</tr>
<tr>
<td>T</td>
<td>Certified Tree Worker</td>
<td></td>
<td></td>
<td>BCMA Practice</td>
</tr>
<tr>
<td>M</td>
<td>Municipal</td>
<td></td>
<td></td>
<td>BCMA Management</td>
</tr>
<tr>
<td>U</td>
<td>Utility</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### Session Title

<table>
<thead>
<tr>
<th>Session</th>
<th>Title</th>
<th>Speaker</th>
<th>CEU Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>General Sessions</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>General</td>
<td>Challenges Facing Pollinators and What We Can Do</td>
<td>Spivak</td>
<td>1 AMBs</td>
</tr>
<tr>
<td>General</td>
<td>Bringing Nature Home</td>
<td>Tallamy</td>
<td>1 AMBm</td>
</tr>
<tr>
<td>General</td>
<td>Landscape Consequences of Minnesota Climate Trends</td>
<td>Seeley</td>
<td>1 AMBs</td>
</tr>
<tr>
<td>General</td>
<td>Loss of Tree Canopy by Emerald Ash Borer: An Opportunity to Study the Effect of Trees on Energy Use</td>
<td>Laverne</td>
<td>1 ATMBs</td>
</tr>
<tr>
<td>General</td>
<td>Tree Care Practices and Arborist Liability</td>
<td>Fraedrich</td>
<td>1 ATUMBm</td>
</tr>
<tr>
<td>General</td>
<td>Unraveling the Web of Soil Microbiology</td>
<td>Downer</td>
<td>1 AMBs</td>
</tr>
<tr>
<td><strong>Introductory Sessions</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Concurrent Session</td>
<td>Chainsaw Safety and Maintenance</td>
<td>LaFavor</td>
<td>1 ATMUBp</td>
</tr>
<tr>
<td>Concurrent Session</td>
<td>Common Tree and Shrub Insects</td>
<td>Hahn</td>
<td>1 AMBs</td>
</tr>
<tr>
<td>Concurrent Session</td>
<td>Diagnosing Tree Diseases</td>
<td>Grabowski</td>
<td>1 AMBs</td>
</tr>
<tr>
<td>Concurrent Session</td>
<td>From Traditional to High Tech Climbing (1.75 hours)</td>
<td>Mekkes</td>
<td>1.75 ATMBp</td>
</tr>
<tr>
<td>Concurrent Session</td>
<td>PPE: What Personal Protective Equipment is Available and Required by OSHA?</td>
<td>LaFavor</td>
<td>1 ATMUBp</td>
</tr>
<tr>
<td>Concurrent Session</td>
<td>Tree Biology</td>
<td>Courneya</td>
<td>1 ATMUBp</td>
</tr>
<tr>
<td>Exhibit Area Session</td>
<td>Tree ID quiz, 20 samples. 70% passing rate to earn CEU</td>
<td>Johnson/Hanson</td>
<td>1 ATMUs</td>
</tr>
<tr>
<td>Concurrent Session</td>
<td>Trees, Shrubs: Who’s Who and What’s What in Minnesota (1.75 hours)</td>
<td>Hanson</td>
<td>1.75 ATMUBp</td>
</tr>
<tr>
<td><strong>Technical Sessions</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Concurrent Session</td>
<td>Developing a Defensible Tree Risk Program</td>
<td>Duntemann</td>
<td>1 AMBm</td>
</tr>
<tr>
<td>Concurrent Session</td>
<td>Getting the Wrong Person Off the Bus</td>
<td>Russell</td>
<td>1 AMBm</td>
</tr>
<tr>
<td>Concurrent Session</td>
<td>How to Select Tough Trees and Shrubs for Water-Parched Landscapes</td>
<td>Stewart</td>
<td>1 AMBm</td>
</tr>
<tr>
<td>Concurrent Session</td>
<td>Inspecting Nursery Stock Before the Purchase</td>
<td>Shimek</td>
<td>1 AMBm</td>
</tr>
<tr>
<td>Concurrent Session</td>
<td>Let It Be an Oak</td>
<td>Tallamy</td>
<td>1 AMBs</td>
</tr>
<tr>
<td>Concurrent Session</td>
<td>Managing Woodlands with Buckthorn (1.75 hours)</td>
<td>Larson</td>
<td>1.75 AMBm</td>
</tr>
<tr>
<td>Concurrent Session</td>
<td>New and Emerging Invasive Forest Pests</td>
<td>Abrahamson</td>
<td>1 ATMBm</td>
</tr>
<tr>
<td>Concurrent Session</td>
<td>Spruce Problem Diagnosis for Yard Trees</td>
<td>Albers</td>
<td>1 AMBs</td>
</tr>
<tr>
<td>Concurrent Session</td>
<td>The Secret of Hiring the Right Person</td>
<td>Russell</td>
<td>1 AMBm</td>
</tr>
<tr>
<td>Concurrent Session</td>
<td>The Shade Garden</td>
<td>Kooyman</td>
<td>1 AMBm</td>
</tr>
<tr>
<td>Concurrent Session</td>
<td>These Ain’t Your Grandfather’s Crabapples</td>
<td>Iles</td>
<td>1 AMBs</td>
</tr>
<tr>
<td><strong>Advanced Technical Sessions</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Concurrent Session</td>
<td>Advances in Diagnosing Root and Soil Disorders</td>
<td>Fraedrich</td>
<td>1 AMBs</td>
</tr>
<tr>
<td>Concurrent Session</td>
<td>Big Trees in the Built-Up Urban Environment: Thriving, not Just Surviving</td>
<td>Hillman</td>
<td>1 AMBm</td>
</tr>
<tr>
<td>Concurrent Session</td>
<td>Evaluating Tree Decay and Making Difficult Decisions</td>
<td>Hayes</td>
<td>1 ATMBP</td>
</tr>
<tr>
<td>Concurrent Session</td>
<td>Managing Wood Borers: Confronting a Hidden Enemy</td>
<td>Herms</td>
<td>1 ATMBs</td>
</tr>
<tr>
<td>Concurrent Session</td>
<td>The Management of Parks and Urban Forests Through the Eyes of a Silviculturist: Big Woods Thinking for Urban Scales</td>
<td>D’Amato</td>
<td>1 AMBm</td>
</tr>
<tr>
<td>Concurrent Session</td>
<td>Trees and Underground Pipes from a Problem into a Resource</td>
<td>Stal</td>
<td>1 ATMBP</td>
</tr>
<tr>
<td>Concurrent Session</td>
<td>Urban Soil Problems and Solutions</td>
<td>Scharenbroch</td>
<td>1AMBS</td>
</tr>
<tr>
<td><strong>Community Forestry Sessions</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Concurrent Session</td>
<td>A Bright Future for the Urban Forest: Can It Be Planned that Way?</td>
<td>Ringold</td>
<td>1 AMBm</td>
</tr>
<tr>
<td>Concurrent Session</td>
<td>Development of the Urban Ecosystem Scoring Method</td>
<td>Laverne</td>
<td>1 AMBm</td>
</tr>
<tr>
<td>Concurrent Session</td>
<td>From Tree Chipper to Sawmill: Wood Utilization Ideas for Communities</td>
<td>Bratkovich</td>
<td>1 ATMBm</td>
</tr>
<tr>
<td>Concurrent Session</td>
<td>Prefurbia: Reinventing the Suburbs from Dismal to Sustainable</td>
<td>Harrison</td>
<td>1 AMBm</td>
</tr>
<tr>
<td>Concurrent Session</td>
<td>Storm Water Management, Urban Heat Island Mitigation and Biodiversity in Central Cities</td>
<td>MacDanagh</td>
<td>1 AMBm</td>
</tr>
<tr>
<td><strong>International Society of Arboriculture, Certified Arborist Exam Preparation Sessions</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Concurrent Session</td>
<td>Preparing for the Certified Arborist Exam</td>
<td>Nozal</td>
<td>1.75 ATMUs</td>
</tr>
</tbody>
</table>
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 Amanda Dragos
Minnesota Department of Natural Resources
Division of Forestry - Box 44
500 Lafayette Rd.
Saint Paul, MN 55155
651-259-5300

Registration Questions
612-624-4000

For More Information
Heather Dorr or Clair Daley
University of Minnesota
612-624-3492
ccecon3@umn.edu

MSA (Minnesota Society of Arboriculture) Winter Picnic
The Tuesday, March 17 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

Tree House of Horrors – 2009

The Tree House of Horrors:
Your Gateway to Diagnosing Tree Health Problems!
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. Fresh samples from common tree problems will test your diagnostic skills.
You’ll also have an opportunity to receive one ISA CEU credit for your visit to the Tree House of Horrors (pending ISA approval).
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.
There will be two new features of the THOH exhibit area this year. Each day, the Minnesota Department of Agriculture will conduct a demonstration on "ash log peeling." Learn how to correctly delve into the inner world of Fraxinus wood to determine if those nasty emerald ash borers are or have been at work. Don’t miss this!
Second, there will be a firewood identification exhibit in the THOH. Test your cross-grain I.D. skills, take the BTU contest, see if dogwoods can be identified by their bark!
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
Don Mueller, Minnesota Department of Natural Resources
Patrick Weicherding, University of Minnesota Extension

2009 Minnesota Shade Tree Short Course Steering Committee
Gary Johnson, chairperson, Department of Forest Resources, College of Food, Agricultural and Natural Resource Sciences, University of Minnesota
Mike Bahe, municipal arborist, City of Hutchinson
David Hanson, research specialist, Department of Forest Resources, College of Food, Agricultural and Natural Resource Sciences, University of Minnesota
Bridget Helwig, student representative, Department of Forest Resources, College of Food, Agricultural and Natural Resource Sciences, University of Minnesota
Jim Hermann, municipal urban forester, Minneapolis Park and Recreation Board
Ben Johnson, commercial arborist, Rainbow Treecare
Manuel Jordan, owner, Heritage Shade Tree Consultants
Russell Kennedy, commercial arborist, Rainbow Treecare
Bob Koch, Minnesota Department of Agriculture
Rebecca Koetter, research fellow, Department of Forest Resources, College of Food, Agricultural and Natural Resource Sciences, University of Minnesota
John Kyhl, federal agency urban forester, USDA Forest Service
Don Mueller, agency urban forester, Department of Natural Resources
Gail Nozal, consulting urban forestry, S&S Tree and Horticultural Specialists
Mark Schnobrich, municipal forester, City of Hutchinson
Mark Stennes, commercial arborist, S&S Tree and Horticultural Specialists
Paul Walvatne, agency urban forester, Minnesota Department of Transportation
Patrick Weicherding, educator/researcher/extension, University of Minnesota Extension
Program – Tuesday, March 17, 2009

6:45 a.m.
Registration begins

General Sessions – Benson Great Hall

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

7:45
GSI: Challenges Facing Pollinators and What We Can Do
Marla Spivak

8:40
GSII: Bringing Nature Home
Doug Tallamy

9:35
GSIII: Landscape Consequences of Minnesota Climate Trends
Mark Seeley

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 p.m.
Group 3 Lunch Break
(MSA members to eat; hold Business Meeting)

12:15
Concurrent Sessions Begin

Concurrent Sessions

KEY

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

<table>
<thead>
<tr>
<th>Time</th>
<th>Session Title</th>
<th>Presenter/Institution</th>
</tr>
</thead>
<tbody>
<tr>
<td>12:15-1:00</td>
<td>Big Trees in the Built-Up Urban Environment: Thriving, Not Just Surviving</td>
<td>Andy Hillman</td>
</tr>
<tr>
<td></td>
<td>Common Tree and Shrub Insects</td>
<td>Jeff Hahn</td>
</tr>
<tr>
<td></td>
<td>Inspecting Nursery Stock before the Purchase</td>
<td>Steve Shimek</td>
</tr>
<tr>
<td></td>
<td>New and Emerging Invasive Forest Pests</td>
<td>Mark Abrahamson</td>
</tr>
<tr>
<td></td>
<td>Prefurbia: Reinventing the Suburbs from Disdainable to Sustainable</td>
<td>Rick Harrison</td>
</tr>
<tr>
<td></td>
<td>Spruce Problem Diagnosis for Yard Trees</td>
<td>Jana Albers</td>
</tr>
<tr>
<td></td>
<td>The Secret of Hiring the Right Person</td>
<td>Dean Russell</td>
</tr>
<tr>
<td></td>
<td>These Ain’t Your Grandfather’s Crabapples</td>
<td>Jeff Iles</td>
</tr>
<tr>
<td>1:15-2:00</td>
<td>A Bright Future for the Urban Forest: Can it be Planned That Way?</td>
<td>Jennifer Ringold</td>
</tr>
<tr>
<td></td>
<td>Evaluating Tree Decay and Making Difficult Decisions</td>
<td>Ed Hayes</td>
</tr>
<tr>
<td></td>
<td>From a Bird’s Eye View: Urban Tree Canopy Cover Assessments</td>
<td>Jill Johnson</td>
</tr>
<tr>
<td></td>
<td>Let It Be an Oak, Doug Tallamy</td>
<td></td>
</tr>
<tr>
<td></td>
<td>PPE: What Personal Protective Equipment Is Available and Required by OSHA?</td>
<td>Ed LaFavor</td>
</tr>
<tr>
<td></td>
<td>The Management of Parks and Urban Forests Through the Eyes</td>
<td>Tony D’Amato</td>
</tr>
<tr>
<td></td>
<td>The Shade Garden, Shirley Mah Kooyman</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Tree Biology, Doug Courneya</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Urban Soil Problems and Solutions, Bryant Scharenbroch</td>
<td></td>
</tr>
<tr>
<td>2:00-2:45</td>
<td>Exhibits, refreshments, and “mini-sessions” in the Exhibit Hall</td>
<td></td>
</tr>
<tr>
<td>2:45-3:45</td>
<td>Development of the Urban Ecosystem Scoring Method</td>
<td>R.J. Laverne</td>
</tr>
<tr>
<td></td>
<td>Diagnosing Tree Diseases</td>
<td>Michelle Grabowski</td>
</tr>
<tr>
<td></td>
<td>From Tree Chipper to Sawmill: Wood Utilization Ideas for Communities</td>
<td>Steve Bratkovich</td>
</tr>
<tr>
<td></td>
<td>How to Select Tough Trees and Shrubs for Water-Parched Landscapes</td>
<td>Ryan Stewart</td>
</tr>
<tr>
<td></td>
<td>Managing Wood Borers: Confronting a Hidden Enemy</td>
<td>Dan Herm</td>
</tr>
<tr>
<td></td>
<td>This session is sponsored by Rainbow Treecare.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Chainsaw Safety and Maintenance</td>
<td>Ed LaFavor</td>
</tr>
<tr>
<td></td>
<td>Stormwater Management, Urban Heat Island Mitigation, and Biodiversity in</td>
<td>Peter MacDonagh</td>
</tr>
<tr>
<td></td>
<td>Central Cities</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Trees and Underground Pipes from a Problem into a Resource</td>
<td>Orjan Stal</td>
</tr>
<tr>
<td></td>
<td>Developing a Defensible Tree Risk Program, Mark Duntemann</td>
<td></td>
</tr>
<tr>
<td>3:45</td>
<td>Adjourn</td>
<td></td>
</tr>
<tr>
<td>4:15</td>
<td>Minnesota Society of Arboriculture (MSA) Business Meeting – Location TBD</td>
<td></td>
</tr>
<tr>
<td>5:30</td>
<td>MSA Winter Picnic – Location TBD (food and drink compliments of MSA)</td>
<td></td>
</tr>
</tbody>
</table>
### General Sessions – Benson Great Hall

**7:45**  
**GSIV: Loss of Tree Canopy by Emerald Ash Borer: An Opportunity to Study the Effect of Trees on Energy Use**  
*R.J. Laverne*

**8:40**  
**GSV: Tree Care Practices and Arborist Liability**  
*Bruce Fraedrich*

**9:35**  
**GSVI: Unraveling the Web of Soil Microbiology**  
*Jim Downer*

**10:30-12:15**  
*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**

### Concurrent Sessions

**KEY**

- ☀️ 1 hour and 50 minute session
- ☀️ only offered one time
- 🌱 extra class fee and pre-registration required

<table>
<thead>
<tr>
<th>Time</th>
<th>Topic</th>
<th>Speakers</th>
</tr>
</thead>
<tbody>
<tr>
<td>12:15-1:00</td>
<td><strong>Advances in Diagnosing Root and Soil Disorders</strong>, <em>Bruce Fraedrich</em></td>
<td><strong>Big Trees in the Built-Up Urban Environment: Thriving, Not Just Surviving</strong>, <em>Andy Hillman</em></td>
</tr>
<tr>
<td></td>
<td><strong>Evaluating Tree Decay and Making Difficult Decisions</strong>, <em>Ed Hayes</em></td>
<td><strong>How to Select Tough Trees and Shrubs for Water-Parched Landscapes</strong>, <em>Ryan Stewart</em></td>
</tr>
<tr>
<td></td>
<td><strong>These Ain’t Your Grandfather’s Crabapples</strong>, <em>Jeff Iles</em></td>
<td><strong>Managing Wood Borers: Confronting a Hidden Enemy</strong>, <em>Dan Herms</em></td>
</tr>
<tr>
<td></td>
<td><strong>This session is sponsored by Rainbow Treecare.</strong></td>
<td></td>
</tr>
<tr>
<td>1:15-2:00</td>
<td><strong>A Bright Future for the Urban Forest: Can It Be Planned That Way?</strong></td>
<td><em>Jennifer Ringold</em></td>
</tr>
<tr>
<td></td>
<td><strong>Developing a Defensible Tree Risk Program</strong>, <em>Mark Duntemann</em></td>
<td><strong>Inspecting Nursery Stock before the Purchase</strong>, <em>Steve Shimek</em></td>
</tr>
<tr>
<td></td>
<td><strong>New and Emerging Invasive Forest Pests</strong>, <em>Mark Abrahamson</em></td>
<td><strong>PPE: What Personal Protective Equipment Is Available and Required by OSHA?</strong>, <em>Ed LaFavor</em></td>
</tr>
<tr>
<td></td>
<td><strong>Prefurbia: Reinventing the Suburbs from Daisiance to Sustainable</strong>, <em>Rick Harrison</em></td>
<td><strong>Spruce Problem Diagnosis for Yard Trees</strong>, <em>Jana Albers</em></td>
</tr>
<tr>
<td></td>
<td></td>
<td><strong>Trees and Underground Pipes from a Problem into a Resource</strong>, <em>Orjan Stal</em></td>
</tr>
<tr>
<td>2:00-2:45</td>
<td><strong>Exhibits, refreshments, and “mini-sessions” in the Exhibit Hall</strong></td>
<td></td>
</tr>
<tr>
<td>2:45-3:45</td>
<td><strong>Chainsaw Safety and Maintenance</strong>, <em>Ed LaFavor</em></td>
<td><strong>Common Tree and Shrub Insects</strong>, <em>Jeff Hahn</em></td>
</tr>
<tr>
<td></td>
<td><strong>Diagnosing Tree Diseases</strong>, <em>Michelle Grabowski</em></td>
<td></td>
</tr>
<tr>
<td></td>
<td><strong>From a Bird’s Eye View: Urban Tree Canopy Cover Assessments</strong>, <em>Jill Johnson</em></td>
<td><strong>From Tree Chipper to Sawmill: Wood Utilization Ideas for Communities</strong>, <em>Steve Bratkovich</em></td>
</tr>
<tr>
<td></td>
<td><strong>Getting the Wrong Person Off the Bus!</strong>, <em>Dean Russell</em></td>
<td></td>
</tr>
<tr>
<td></td>
<td><strong>Storm Water Management, Urban Heat Island Mitigation and Biodiversity in Central Cities</strong>, <em>Peter MacDonagh</em></td>
<td><strong>Tree Biology</strong>, <em>Doug Courneya</em></td>
</tr>
<tr>
<td></td>
<td><strong>Urban Soil Problems and Solutions</strong>, <em>Bryant Scharenbroch</em></td>
<td></td>
</tr>
</tbody>
</table>

### 1 hour, 45-minute Sessions

<table>
<thead>
<tr>
<th>Time</th>
<th>Topic</th>
<th>Speakers</th>
</tr>
</thead>
<tbody>
<tr>
<td>12:15-2:00</td>
<td><strong>From Traditional to High Tech Climbing</strong>, <em>Dan Mekkes</em></td>
<td><strong>Trees, Shrubs: Who’s Who and What’s What in Minnesota</strong>, <em>Dave Hanson</em></td>
</tr>
<tr>
<td>3:45</td>
<td><strong>Adjourn</strong></td>
<td></td>
</tr>
</tbody>
</table>
Chainsaw Safety and Maintenance

The second part of a two-partter. Part one is Personal Protective Equipment. Everyone, absolutely everyone needs refresher classes on operating chainsaws safely and efficiently keeping them running... especially if you've been at it for awhile. If you have new employees who are using chainsaws, you owe it to them and yourself to get into this class. Taught by an experienced, OSHA-savvy instructor. Ed LaFavor.

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 a Defensible Tree Risk Program

Mark will discuss the key elements of a defensible municipal tree risk management program. There are no "standards" for tree risk management in the United States. Using established guidelines, each community develops and implements a strategy that is within their resources. The presentation will use a resource matrix to identify how communities of varying sizes and resources can implement a tree risk program that enhances canopy cover while reducing the potential for harm. Mark Dantemann.

Development of the Urban Ecosystem Scoring Method

This presentation describes the development of a map-based tool that seeks to identify the benefits that humans enjoy (and possibly require) from natural resources in urban areas. By recognizing the environmental, economic, and social benefits of urban ecosystems in a series of spatial map layers, urban planners and ecosystem managers can visualize how urban residents access (or are restricted from) natural resources. The economic return on investing in thoughtful urban ecosystem management is a compelling reason to incorporate this kind of strategy into urban planning. The environmental and social returns on investment make it essential if our cities are to remain habitable. RJ Laverne.

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 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. Michelle Grabowski.

Evaluating Tree Decay and Making Difficult Decisions

Field guidelines for evaluating trees for decay above and below ground are easy to learn and use. Decision making is complicated as there are many variables and unknowns. Ed Hayes.

From a Bird's Eye View: Urban Tree Canopy Cover Assessments

Could your community stand to increase its tree canopy cover? How much? And where should the increases take...
place? Come learn about how Urban Tree Canopy Assessments can help answer these questions. Designed for those who are new to the subject, this presentation will cover the basic processes, data requirements, and costs. Jill Johnson.

From Traditional to High Tech Climbing This session is a must for all beginning climbers as well as experienced climbers who are interested in learning new techniques that will allow them to climb longer, safer, and more comfortably. Dan Megkes.

From Tree Chipper to Sawmill: Wood Utilization Ideas for Communities Urban and community trees are a tremendous asset while green and growing. These same trees, however, can continue to be a community benefit after they are removed due to natural disasters, old age, or development pressures. Although the utilization of urban and community trees for wood and paper products is still in its infancy, many progressive communities and entrepreneurs are taking advantage of the huge potential. This presentation will examine some of the opportunities, challenges, and ideas for starting or expanding an urban and community wood utilization program. Steve Bratkovich.

Getting the Wrong Person off the Bus! This provocative presentation of “how” to help the workplace by looking at performance and behavior issues which affect productivity provides the secret to termination. Dean Russell.

How to Select Tough Trees and Shrubs for Water-Parched Landscapes Not only will information be provided on potential drought-tolerant trees and shrubs to use in Minnesota landscapes, but also processes, tools, and techniques that are used in identifying promising species and cultivars. Ryan Stewart.

Inspecting Nursery Stock before the Purchase Discussion will include plant pest quarantine requirements for nursery stock and detailed recommendations for inspecting, accepting, or rejecting nursery stock and approving installations. Steve Shimik.

Let It Be an Oak Discussion includes the many benefits of landscaping with oaks, particularly when compared to the alternatives. Doug Tallamy.

Managing Wood Borers: Confronting a Hidden Enemy Wood borers are devastating and difficult to manage because of their hidden habits, nature of the injury caused by their feeding, and their propensity to attack stressed trees. This presentation will focus on the biology and management of key wood borers. Dan Herms. This session speaker is sponsored by Rainbow Treecare.

Managing Woodlands with Buckthorn Set yourself apart from other contractors when working on buckthorn removal projects. Learn why gradual, prioritized removal is better than an under-story clear-cut and how to minimize the explosion of the next invasive species. This session will emphasize measures that save remnant native plant species, utilize waste wood, reduce soil erosion, and protect ground cover species. Learn about forest structure and reforestation using native plants indigenous to the Twin Cities. Handouts provided. Janet Van Sloan Larson.

New and Emerging Invasive Forest Pests Several insect species are threatening to invade Minnesota forests including gypsy moth, emerald ash borer, Asian longhorn beetle, and Sirex wood-wasp. This presentation will cover the biology of these pests, their potential impact on Minnesota, and what agencies in Minnesota are doing to mitigate that impact. Mark Abrahamson.

PPE: What Personal Protective Equipment is Available and Required by OSHA? Part One of a two-partner. You need to attend this session before moving on to Part Two: Chainsaw Safety and Maintenance. This session, taught by the same experienced instructor, will give you the most current information on PPE requirements and technology. PPE is designed to protect both those who work on the job and those who own or manage the company. Ed LaFavor.

Prefurbia: Reinventing the Suburbs from Disdainable to Sustainable The bland unhealthy cookie cutter recipe of developing our land is about to get a completely new overhaul to create energy efficient neighborhoods with character that are safer, more open, more economical, and with a higher level of social interaction that ever before. We coincide this new era of preferred suburban living as Prefurbia, the title of our book available from Sustainable Land Development International (www.sldi.org). Rick Harrison.

Preparing for the Certified Arborist Exam (Pre-registration required, limited to 45 registered participants) If you have been considering becoming an International Society of Arboriculture Certified Arborist, this session is for you. Come and learn about what it takes to become an ISA Certified Arborist and spend one hour walking through one section of the study guide and sampling some questions from the guide. Additional test preparation resources will be available to review in this session. Gail Nozal.

Spruce Problem Diagnosis for Yard Trees Learn to identify the 14 most common insects and pathogens found on spruces in Minnesota. Effects of these pests and problems and management strategies will be discussed. Jana Albers.

Storm Water Management, Urban Heat Island Mitigation, and Biodiversity in Central Cities What lies beneath? We live in urban areas where the underground ecological infrastructure that used to support life, cleanse water, and provide habitat for healthy ecosystems no longer exists. But, we can bring it back. We can restore ‘green’ to our urban areas by addressing what happens below the surface. Peter MacDonagh.

The Management of Parks and Urban Forests Through the Eyes of a Silviculturist: Big Woods Thinking for Urban Scales The discipline of silviculture is concerned with the art and science of controlling the establishment, growth, composition, health, and quality of forests. Traditionally, silvicultural principles have been viewed with a “big woods” perspective in which treatments such as thinning or regeneration methods are applied to stands of trees contained within a larger forested matrix. Binomial approach, there are many principles and practices that are well-suited for park and urban forest settings. This presentation will provide a general introduction to silviculture and explore how a “big woods” silviculturist might apply his craft to an urban forest setting. Anthony D’Amato.

The Shade Garden Selecting plants for shady conditions is far more challenging than for sunny locations. Go beyond begonias and impatients and learn which plants will thrive in the shade and happily coexist with the canopies and roots of shade trees. Find out how the texture, color, and shape of leaves can be of interest. Shirley Mah Kooyman.

The Secret of Hiring the Right Person The secret of hiring is an entertaining presentation on “how” to make sure you have the right person getting on the bus. The right questions make all the difference. Dean Rassell.

These Ain’t Your Grandfather’s Crabapples Misunderstood and often maligned, crabapples seem to have a polarizing effect on our clients. Many love them, but some absolutely hate them. But when a landscape plan calls for a flowering tree, crabapples are the first plants we think about. But all crabapples are not alike. Some selections truly are inferior landscape plants, but many other species and cultivars have colorful flower and fruit displays, excellent disease resistance, and growth habits to match any site. Sign up for this session and learn about the best crabapple selections for the Upper Midwest. Jeff Iles.

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.

Trees and Underground Pipes from a Problem into a Resource To obtain the best possible compromise for the trees in an urban environment, we must also find out why they feel bad and why they are damaging the infrastructure. In Sweden and some other countries in Europe we have spent the last 20 years trying to find out why this happens; why our urban trees are becoming worse and worse and what agencies in Minnesota are doing about it. We will look at some of the commonly encountered trees and shrubs of Minnesota, some native -- some not. And, we’ll study up on those details that tell us who or what they are. Dave Hanson.

Urban Soil Problems and Solutions Urban soils pose many challenges for the management and care of trees. This lecture will identify the key attributes of urban soils. We will then discuss strategies for addressing these problems associated with urban soils. The lecture will span traditional, current, and future urban soil management techniques. Bryant Scharenbroich.
Maps 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).
Registration

1. Online
   www.cce.umn.edu/shadetree

2. Fax
   your registration along with credit card number or purchase order 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
- Please print or type when you fill in the registration form.
- Use separate forms for each individual. Registration form may be photocopied.
- We may be working outdoors so dress appropriately.
- Cell Phone Etiquette – please remember to turn off your cell phones during all course sessions. Cell phone ringing, texting, and talking are disruptive to other participants.

Cancellations
Cancellations received up to five working days before the course are refundable, minus a $30 service 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.

Tree Inspector Manuals
Tree Inspector Manuals will be available for sale at the registration desk at the course.

Registration Form
Shade Tree Short Course – March 17-18, 2009

<table>
<thead>
<tr>
<th>Last Name</th>
<th>First Name</th>
<th>M.I.</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Company/Institution</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Title/Position</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>E-mail</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Business Address</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>City</th>
<th>State</th>
<th>Zip</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Daytime Telephone</th>
<th>Fax Number</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Occupation (please check one):

- [ ] Corporate
- [ ] Public Employee
- [ ] Utility
- [ ] Student
- [ ] Other

Registration Fees

- [ ] $165 postmarked by March 3
- [ ] $180 postmarked after March 3

Student Rate (see requirements on page 1)

- [ ] $80 postmarked by March 3
- [ ] $95 postmarked after March 3

Additional Course Fees

- [ ] $85 Certified Arborist Exam Study Manual

International Society of Arboriculture Certified Arborist Exam study manuals may be purchased in advance for the additional charge of $85 (this is a $15 discount from ISA). You do not need to purchase the manual to attend the class; however, you must attend the class to purchase the manual. **Manuals must be pre-paid with the STSC no later than February 27. No exceptions.** No manuals will be available for sale on-site at the Shade Tree Short Course.

Please fill out your attendance plans:

- [ ] I will attend the MSA picnic, Tuesday, March 17
- [ ] I will be attending the “Preparing for the Certified Arborist Exam” session.

Payment Method

- [ ] Check or purchase order made payable to the University of Minnesota
- [ ] Bill my U of M EFS # ___________________________
- [ ] I authorize payment on my credit card: ___________________________
  - [ ] VISA
  - [ ] MasterCard
  - [ ] American Express
  - [ ] Discover/Novus

<table>
<thead>
<tr>
<th>Card Number</th>
<th>Expiration Date</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Total Charge</th>
<th>Cardholder Name (please print)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Signature

10
The 47th Annual
Minnesota Shade Tree Short Course
March 17-18, 2009

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

March 17-18, 2009
Bethel University
Arden Hills, Minnesota