A two-day course for everyone involved in urban forestry and arboriculture. ISA Certified Arborist CEUs are available for most sessions. Certified Minnesota Tree Inspectors will be recertified for 2015 by attending the entire short course.

March 17-18, 2015
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
College of Continuing Education, University of Minnesota

Ensuring Tree Health Since 1963
www.cce.umn.edu/shadetree

University of Minnesota
Driven to Discover℠
A lesson in smart economics always includes diversity; diversity in resources, worker skills, products, vendors, and clients. Lessons in diversity for managers of urban forests and trees have ranged from cruel and unforgiving to a breath of fresh air and hope! Our landscapes with multiple tree species and a mix of young and old trees will continue to thrive while those dominated by only a few favorite trees will soon be starting over.

Job descriptions, duties, and required skills haven’t escaped the influence of diversity either. Successful arborists are not only skilled at pruning and removing trees, they have become skilled at diagnosing problems, in tree biomechanics and hazard tree identification, and at promoting their services through social media. Municipal urban foresters have become storm water managers, adept at conducting tree inventories and assessing tree canopy cover, and educators.

Urban forests do not favor males to females, youthfulness to maturity, or one alma mater to the next. Look closely at this year’s program and how diversity is at every turn. Figure out how you can best use your time to redefine and diversify your professional skills, cultivate new friendships, and sustain old ones. And most of all, welcome back.

Gary Johnson
Minnesota Shade Tree Short Course, Chairperson
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 East and West Parking Lots and a spacious cafeteria. Overflow parking is available at 2 Pine Tree Drive, Arden Hills, MN 55112. A shuttle will run on March 17 and 18 from the overflow lot to Bethel’s campus from 7:30-10 a.m., 12:30-1:00 p.m., and 3:45-4:15 p.m. The campus is located in Arden Hills, a short distance from Snelling Avenue and I-694, (see map on page 20) 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, and concludes at 3:45 p.m. on Wednesday.

Minnesota Shade Tree Short Course Steering Committee

Gary Johnson, Chair of the Minnesota Shade Tree Short Course, Department of Forest Resources, College of Food, Agricultural and Natural Resource Sciences, University of Minnesota
Mike Bahe, Municipal Arborist, City of Hutchinson
David Hanson, Vegetation Management Specialist, Minnesota Department of Transportation
Ben Johnson, Commercial Arborist, Rainbow Treecare
Jill Johnson, Coordinator, Midwest Center for Urban Forestry, U.S. Forest Service
Manuel Jordan, Owner, Heritage Shade Tree Consultants
Russell Kennedy, Commercial Arborist, Rainbow Treecare
Jeff Loso, Municipal Consulting Arborist, Rainbow Treecare
Jean Mouelle, Department of Natural Resources
Jim Neeser, Business Developer, Davey Resource Group
Eric North, Research Fellow, Department of Forest Resources, College of Food, Agricultural and Natural Resource Sciences, University of Minnesota
Cory Peterson, Owner, Peterson Tree Service
Josh Plunkett, Plant Health Specialist, Minnesota Department of Agriculture
Philip Potyondy, Sustainable Forestry Coordinator, Minneapolis Park and Recreation Board
Mark Schnobrich, Arbor Life Consulting Forestry, LLC

Eugene Anderson, College of Continuing Education, University of Minnesota
Nick McArdle, College of Continuing Education, University of Minnesota
Emily Strong, College of Continuing Education, University of Minnesota

Certification and Credit

- Certified tree inspectors will be recertified for 2015 by attending the entire short course.
- ISA CEUs will be given for all sessions.
- TCIA Certified Treecare Safety Professional credits available for some sessions.
- Continuing Forestry Education Credits are available for most 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.

Exhibits

Commercial and agency exhibits will be available each day. Everyone is invited to stop by and exchange information at booths located in the gymnasium. Exhibit space is coordinated by Ben Johnson, who can be reached by phone or e-mail—612-282-2362 or bjohnson@rainbowtreecare.com.

Tree Inspector Certification and Information

For questions about Tree Inspector status, contact:
Tami Brue
Minnesota Department of Natural Resources
651-259-5286
tami.brue@state.mn.us

For questions about Tree Inspector training, contact:
Sean Peterson
Department of Forest Resources
College of Food, Agricultural and Natural Resource Sciences
University of Minnesota
612-624-4261
pete7795@umn.edu

Registration Questions
612-625-2900

For More Information

Nick McArdle
University of Minnesota
612-625-5969
cceconf4@umn.edu

MSA (Minnesota Society of Arboriculture) Mixer

The Tuesday business meeting will begin at 4:30 p.m., followed by a dinner, drinks, and music at 5:30 p.m. The mixer 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: Bauhaus Brew Labs,
1315 Tyler Street NE, Minneapolis, MN 55413
Guidebook
New this year—we’re on Guidebook! Prior to the Short Course, attendees can download the free Guidebook app to their mobile device and search for “Minnesota Shade Tree Short Course.” Plan your day with a personalized schedule, browse exhibitors, maps, and general event information. Information on how to access Guidebook will be sent by e-mail to all course registrants before the short course.

Twitter
Keep up with the sessions you missed and tweet about those you attended on Twitter. Be sure to add the conference hashtag #mnstsc to all of your tweets.

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 among any of the tracks that appeal to you.

General Sessions (in order of presentation)

• GSI: How to Know When to Cable Trees and What to Use
  Mark Chisholm, Certified Arborist, commercial arborist, and trainer

• GSII: Changing Climates…Changing Tree Species
  Nancy Buley, Director of Communications, J. Frank Schmidt and Son Co.

• GSIII: Force of Impact Associated with Tree Failures; Characterizing Branch Failure Line Strikes
  John Goodfellow, Principal Consultant, BioCompliance Consulting, Inc.

• GSIV: To Your Good Health! Research about Trees and Wellness
  Kathy Wolf, Research Social Scientist, University of Washington

• GSV: The Evolution of Soils Concepts for Street Trees
  James Urban, FASLA, ISA, Landscape Architect, Urban Trees + Soils

• GSVI: Diagnosing Long and Short-term Effects of Herbicides on Trees
  Hannah Mathers, Ph.D., Horticultural Consultant, Mathers Environmental Science Services

Exhibit Area Mini-Sessions
These 15–20 minute classes will be offered in the exhibit area balcony during the open hours.

Electrical Hazard Demonstration Trailer (located in East parking lot)
Invasive Species Update
New Technology for Climbers
Tree Track Tree Inventory
What’s New at the Plant Disease Clinic

New This Year!
Optional Networking Lunch
Interested in meeting others in your profession? Attending the Short Course on your own? Not wanting to eat alone? Any one of these is a good reason to attend the informal networking lunch on the first day of the Short Course. No sign up is required. We have reserved a private dining room (3900 Grill) located near the main dining room. Please consider joining us!
Tables will be available for all types of professions so you can connect with others in like circumstances. There’s a place for everyone!
• Municipal
• Utility
• Citizen Volunteers/Tree Boards/Non-Profits
• Private Tree Care
• Engineers/Landscape Architects/Designers
• Landscape Contractors/Grounds Maintenance
• All Others—growers, consultants, educators, etc.
## Track Matrix (in alphabetical order)

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<thead>
<tr>
<th>Recommend Audience/Session Type</th>
<th>Commercial Arboriculture</th>
<th>Municipal Arboriculture</th>
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<td>A Review of ISA Certification Categories: How Do I Get There from Here? (Gail Nozal)</td>
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<td>An Urban Forester’s Overview and Discussion of Tree Inventory Management Software, Philip Potyondy</td>
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<td>Biochar and Arboriculture: What is it? Does it work? Bryant Scharenbroch</td>
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<td>Biology and Management of Flood-Tolerant Tree Species in the Urban Landscape, Jeff Dawson</td>
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<td>Capacity: Maximizing Your Community’s Power, Andrea Dierich</td>
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<td>Changing Climates…Changing Tree Species, Nancy Buley</td>
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<td>Cultivating Social Resilience: Greening as a Catalyst for Recovery and Renewal, Erika Svendsen</td>
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<td>Developing Long-Term Employees for Success, Dave Scharfenberger</td>
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<td>Diagnosing Long- and Short-Term Effects of Herbicides on Trees, Hannah Mathers</td>
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<td>Drought and Its Impact on Tree Health, Robert Marra</td>
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<td>Elms in the Community Forest, Tom Zetterstrom</td>
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<td>Establishing Tree Risk Tolerances for Communities, Mark Duntemann</td>
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<td>Helping Hands: Letting Volunteers Drive Restoration, Adam Flett</td>
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<td>Improving Oak Wilt Diagnostics in Minnesota, Anna Yang</td>
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<td>Know Your Enemy: Successful Disease Management Through an Understanding of Pathogen Biology, Michelle Grabowski</td>
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<td>Lessons Learned From the Past Four Safety Summits, Will Nutter</td>
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<td>Leverage Private Dollars for Tree Planting Through Energy Saving Trees, Jared Carlson</td>
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<td><strong>The Evolution of Soils Concepts for Street Trees, James Urban</strong></td>
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<td><strong>Xeriscaping for Changing Midwest Climates, Douglas Owens-Pike</strong></td>
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Workshops

Chipper Operator Workshop

Wednesday, March 18, 2015, 8:00 – 11:30 a.m.

Instructor

Mark Rau, Dealer Development Manager, Morbark, Inc.

Accidents involving brush chippers are a significant concern for tree care and landscape employers, the employees who operate the equipment, and manufacturers alike. For crew members who often do not receive formal training opportunities, the program will increase employee involvement with overall safety compliance and self-policing and provide crew members with an opportunity to earn a nationally recognized credential.

This is a 3.5 hour workshop, offered only one time.

Pre-registration required; additional fee of $25 per person.

You must attend the full 3.5 hours to become certified and get any credit for this workshop. The workshop will be held on the Bethel campus.

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.

CERTIFIED TREECARE SAFETY PROFESSIONAL (CTSP) CONTINUING EDUCATION UNITS (CEUs)

The following sessions have been approved for Certified Treecare Safety Professional CEUs:

Commercial Drivers’ and Equipment Laws: Awareness and Enforcement, Sgt. Dale Prokosch

Developing Long-Term Employees for Success, Dave Scharfenberger

Lessons Learned From the Past Four Safety Summits, Will Nutter

Climbing Tips for Long-Term Health, Melissa LeVangie

What Everyone Should Know about Lyme Disease, Elizabeth Maloney

Attendance sheets will be offered immediately after each session.

SOCIETY OF AMERICAN FORESTERS CONTINUING FORESTRY EDUCATION CREDITS

Most sessions are approved for SAF Continuing Forestry Education credits. CFE attendance forms will be available at the registration desk.
REGISTRATION FEES

The early registration fee, received by March 1 is $185 per person. The regular fee after March 1 and at the door is $200 per person. The registration fee includes general sessions, breakouts, breaks, lunches, and handouts.

**Student Rate**
Student registration is $40 per student.

*To obtain the student rate, a statement from the student’s academic advisor 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 advisor’s name, and the advisor’s signature.*

**Tree Board or Park Board Member Rate**
Tree Board or Park Board member registration is $95 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.*

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**TREE HOUSE OF HORRORS**

Located in the exhibit area, the Tree House of Horrors displays both the “worst-of-the-worst,” the “best-of-the-best,” and everything in between.


The Tree Inspector “one-stop” with recertification drop box and program information

“The Good, Bad, and the Ugly” aspects of tree watering devices

Technical and diagnostic “Tools You Can Use” (interactive) to:

- Detect decay and calculate strength loss
- Quickly and easily assess basic tree health

A closer look at roots:

- Mycorrhizae, actinorhizae, and nodular relationships to tree root health
- Assessing tree health and vigor using starch analysis (interactive)

Latest Department of Forest Resources and experimental nursery research including:

- Cloning, propagation and species performance of D.E.D. resistant elms
- Proven correlation between sidewalk replacement and catastrophic tree failure in wind-loading events

Firewood, disease, and damage I.D.

Bad things that good people do to helpless trees

Stop by. Drink your coffee and eat your cookies while learning in a different, relaxed way.

The Tree House of Horrors is organized by Sean Peterson and Dustin Ellis, Department of Forest Resources, University of Minnesota

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MINNESOTA SHADE TREE SHORT COURSE – MARCH 17-18, 2015
PROGRAM

Tuesday, March 17, 2015

6:45 a.m.
Registration Begins – Benson Great Hall Foyer

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

7:45
How to Know When to Cable Trees and What to Use
Mark Chisholm, Certified Arborist, Commercial Arborist, and Trainer

8:40
Changing Climates…Changing Tree Species
Nancy Buley, Director of Communications, J. Frank Schmidt and Son Co.

9:35
Force of Impact Associate with Tree Failures; Characterizing Branch Failure Line Strikes
John Goodfellow, Principal Consultant, BioCompliance Consulting, Inc.

10:30-12:15 p.m.
Mini-Sessions, Exhibits, and Tree House of Horrors

11:00-11:20
New Technology for Climbers (Gym Balcony)
Taylor Hamel, Certified Arborist, Contract Climber, and Trainer, Minnesota

11:45-12:00 p.m.
Invasive Species Update (Gym Balcony)
Mark Abrahamson, Plant Protection Division, Minnesota Department of Agriculture

11:00-11:30
Electrical Hazard Demonstration Trailer (East Parking Lot)

11:00
Group 1 Lunch Break – Dining Center

11:20
Group 2 Lunch Break – Dining Center

11:45
Group 3 Lunch Break – Dining Center

12:15-1:00
CONCURRENT SESSIONS

A Review of ISA Certification Categories: How Do I Get There From Here?
Gail Nozal, Assistant District Manager, S&S Tree and Horticultural Specialists
(This session will only be given once)

Biochar and Arboriculture: What is it? Does it work?
Bryant Scharenbroch, University of Wisconsin-Stevens Point

Biology and Management of Flood-Tolerant Tree Species in the Urban Landscape
Jeff Dawson, Professor Emeritus, University of Illinois at Urbana-Champaign

Closing the Loop on Urban Wood Utilization
Ian Brown, Urban Forestry Technical Services Manager, City of Milwaukee

Commercial Drivers and Equipment Laws: Awareness and Enforcement
Sgt. Dale Prokosch, Minnesota State Patrol Commercial Vehicle Enforcement

Communication Planning: Spread the Word Faster than EAB
Jenna Williams, Communication Coordinator, University of Minnesota

Contract Growing Trees: NYC’s Million Trees Initiative
Matthew Stephens, Director of Street Tree Planting, New York City Department of Parks and Recreation

Know Your Enemy: Successful Disease Management through an Understanding of Pathogen Biology
Michelle Grabowski, Extension Educator—Horticulture and Plant Pathology, University of Minnesota Extension

Planning for Success—Managing our Forests in the Right (of) Way
Vince Mikulanis, Project Manager, Davey Resource Group

Roots on Steroids: How Mycorrhizae Work
Linda Chalker-Scott, Washington State University

Science in the Treetops: Advances in Forest Protection
Stephen Nicholson, Sales Manager, North America, Forest Health, Valent BioSciences

Selecting the Best Trees and Shrubs for Supporting Pollinators in the Upper Midwest
Heather Holm, Landscape Designer, author of Pollinators of Native Plants

The Mechanics of Installing Cabling Systems
Mark Chisholm, Certified Arborist, Commercial Arborist, and Trainer
(This session will only be given once)

Why do They Cut Them Like That? Utility Arboriculture Explained
Geoff Kempter, Technical Services Manager, Asplundh

12:15-2:00
EXTENDED CONCURRENT SESSION

Trees for a Changing Climate: A Focus on Proper Identification
Dave Hanson, Vegetation Management Specialist, Minnesota Department of Transportation
<table>
<thead>
<tr>
<th>Time</th>
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<td>1:15-2:00</td>
<td><strong>Botanical Barbarians: How to Identify and Defend Against Invading Plant Hordes</strong></td>
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<td>Monika Chandler, Biological Control and Invasive Plant Early Detection, Minnesota Department of Agriculture</td>
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<td><strong>Drought and Its Impact on Tree Health</strong></td>
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<td>Robert Marra, The Connecticut Agricultural Experiment Station</td>
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<td><strong>Advanced Tree Biology</strong></td>
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<td>Eric North, Research Fellow, University of Minnesota</td>
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<td><strong>An Urban Forester's Overview and Discussion of Tree Inventory Management Software</strong></td>
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<td><strong>Applied Tree Biology</strong></td>
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<td>Doug Courneya, Owner, Courneya Horticulture Services</td>
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<td><strong>A View From the Top of the Redwood Forest</strong></td>
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<td>Joe Rothleutner, Tree Improvement Specialist, The Morton Arboretum</td>
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<td><strong>Capacity: Maximizing Your Community's Power</strong></td>
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<td>Andrea Dierich, Special Projects Coordinator, The Morton Arboretum</td>
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<td><strong>Common Diseases of Oaks in the Midwest</strong></td>
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<td>Jill Pokorny, Plant Pathologist, USDA Forest Service</td>
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<td>3:45</td>
<td><strong>Adjourn</strong></td>
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<td>4:30</td>
<td><strong>Minnesota Society of Arboriculture (MSA) Business Meeting – Bauhaus Brew Labs</strong></td>
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<td>5:30</td>
<td><strong>MSA Mixer – Bauhaus Brew Labs</strong> (food and drink compliments of MSA)</td>
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Wednesday, March 18, 2015

7:45 a.m.
To Your Good Health! Research about Trees and Wellness
Kathy Wolf, Research Social Scientist, University of Washington

8:40
The Evolution of Soils Concepts for Street Trees
James Urban, FASLA, ISA, Landscape Architect, Urban Trees + Soils

9:35
Diagnosing Long and Short-Term Effects of Herbicides on Trees
Hannah Mathers, Ph.D., Horticultural Consultant, Mathers Environmental Science Services

10:30-12:15 p.m.
Mini-Sessions, Exhibits, and Tree House of Horrors

11:00-11:20
Tree Track Tree Inventory (Gym Balcony)
Blaine Hackett, President, Flat Rock Geographics, LLC

11:20-11:40
Invasive Species Update (Gym Balcony)
Mark Abrahamson, Plant Protection Division, Minnesota Department of Agriculture

11:45-12:05
What’s New at the Plant Disease Clinic (Gym Balcony)

11:00
Group 1 Lunch Break — Dining Center

11:20
Group 2 Lunch Break — Dining Center

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12:15-1:00
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An Urban Forester’s Overview and Discussion of Tree Inventory Management Software
Philip Potyondy, Sustainable Forestry Coordinator, Minneapolis Park and Recreation Board

Biology and Management of Flood-Tolerant Tree Species in the Urban Landscape
Jeff Dawson, Professor Emeritus, University of Illinois at Urbana-Champaign

Climbing Tips for Long-Term Health
Melissa LeVangie, Commercial Arborist

Closing the Loop on Urban Wood Utilization
Ian Brown, Urban Forestry Technical Services Manager, City of Milwaukee

Commercial Drivers and Equipment Laws: Awareness and Enforcement
Sgt. Dale Prokosch, Minnesota State Patrol Commercial Vehicle Enforcement

Communicating Trees
Nancy Buyley, Director of Communications, J. Frank Schmidt and Son Co.
(This session will only be given once)

Cultivating Social Resilience: Greening as a Catalyst for Recovery and Renewal
Erika Svendsen, Research Social Scientist, U.S. Forest Service

Developing Long-Term Employees for Success
Dave Scharfenberger, President, Wachtel Tree Science, Inc.

Elms in the Community Forest
Tom Zetterstrom, Founding Director, Elm Watch Community Forestry

Know Your Enemy: Successful Disease Management through an Understanding of Pathogen Biology
Michelle Grabowski, Extension Educator—Horticulture and Plant Pathology, University of Minnesota Extension

Reduce the Crown, Retain the Tree
Philip van Wassenaer, Principal Consulting Arborist, Urban Forest Innovations, Inc.

Roots on Steroids: How Mycorrhizae Work
Linda Chalker-Scott, Washington State University

Selecting the Best Trees and Shrubs for Supporting Pollinators in the Upper Midwest
Heather Holm, Landscape Designer, author of Pollinators of Native Plants

Why do They Cut Them Like That? Utility Arboriculture Explained
Geoff Kempter, Technical Services Manager, Asplundh

12:15-2:00
EXTENDED CONCURRENT SESSION

Trees for a Changing Climate: A Focus on Proper Identification
Dave Hanson, Vegetation Management Specialist, Minnesota Department of Transportation

1:15-2:00
CONCURRENT SESSIONS

Biochar and Arboriculture: What is it? Does it work?
Bryant Scharenbroch, University of Wisconsin—Stevens Point

Botanical Barbarians: How to Identify and Defend Against Invading Plant Hordes
Monika Chandler, Biological Control and Invasive Plant Early Detection, Minnesota Department of Agriculture
Breeding Tomorrow’s Trees  
Joe Rothleutner, Tree Improvement Specialist, The Morton Arboretum

Contract Growing Trees: NYC’s Million Trees Initiative  
Matthew Stephens, Director of Street Tree Planting, New York City Department of Parks and Recreation

Drought and Its Impact on Tree Health  
Robert Marra, The Connecticut Agricultural Experiment Station

Helping Hands: Letting Volunteers Drive Restoration  
Adam Flett, Stewardship Coordinator, Friends of the Mississippi River

Leverage Private Dollars for Tree Planting through Energy Saving Trees  
Jared Carlson, Director of Innovation and Business Development, Arbor Day Foundation

Looking at Tree Rings: The Inside Story of Forest Health  
Rose Marie-Muzika, Professor of Forestry, University of Missouri

Making Proper (Sometimes Tough) Tree Treatment Decisions  
Rex Bastian, Regional Technical Advisor, The Davey Tree Expert Company/The Care of Trees

PHC: The Key to a Healthy Landscape  
Erika Saalau Rojas, Extension Plant Pathologist, University of Massachusetts Cranberry Station

Planning for Success—Managing our Forests in the Right (of) Way  
Vince Mikulanis, Project Manager, Davey Resource Group

Restoration of Storm-Damaged Trees  
Jake Miesbauer, Arboriculture Researcher, The Morton Arboretum

Those Galling Plant Galls!  
Jeff Hahn, Extension Entomologist, University of Minnesota Extension

2:00-2:45  
Exhibits and Door Prize Drawing

2:45-3:45  
CONCURRENT SESSIONS

Communication Planning: Spread the Word Faster than EAB  
Jenna Williams, Communication Coordinator, University of Minnesota

Developing Trees as Simple Fractals  
Nick Grebe, Arborist, Rainbow Treecare

Establishing Tree Risk Tolerances for Communities  
Mark Duntemann, Owner, Natural Path Urban Forestry

Improving Oak Wilt Diagnostics in Minnesota  
Anna Yang, MSc, Graduate Student, Department of Plant Pathology, University of Minnesota

Lessons Learned From the Past Four Safety Summits  
Will Nutter, Wright Tree Service, Inc.

Pruning Young Elms  
Tom Zetterstrom, Founding Director, Elm Watch Community Forestry  
(This session will only be given once)

Science in the Treetops: Advances in Forest Protection  
Stephen Nicholson, Sales Manager, North America, Forest Health, Valent BioSciences

Soil as a Living System  
Karen Balen, Ph.D., Adjunct Faculty, Department of Soil, Water and Climate, University of Minnesota

What Everyone Should Know about Lyme Disease  
Elizabeth Maloney, M.D., Partnership for Healing and Health

Xeriscaping for Changing Midwest Climates  
Douglas Owens-Pike, President, EnergyScapes

3:45  
Adjourn

4:00  
University of Minnesota Alumni and Friends Happy Hour  
Grumpy’s of Roseville

All hours of the Shade Tree Short Course are happy, but this one involves drinks! All are welcome to join.
Karen Ballen
Karen has a bachelor’s degree in biology and a Ph.D. in soil science. She teaches courses in the environmental sciences, including an online course titled The Social Life of Soil at the University of Minnesota.

Rex Bastian
Rex joined The Care of Trees in 1989 after receiving his Ph.D. from Iowa State University, majoring in entomology. He is a regional technical advisor with the Davey Tree Expert Company/The Care of Trees, with emphasis on education and training, public relations, and diagnostics.

Ian Brown
Ian Brown is the urban forestry technical services manager for the City of Milwaukee. He joined Milwaukee Forestry in 2007 and has worked on a variety of projects including hyperspectral imagery analysis, GIS street tree inventory, and ash tree injections. Ian attended the University of Minnesota–Morris (B.A.) and the University of Wisconsin–Stevens Point (M.S.).

Nancy Buley
Nancy Buley is director of communications for J. Frank Schmidt & Son Co., wholesale tree growers of Boring, Oregon. A member of Oregon Association of Nurseries, Garden Writers Association, Association of Northwest Landscape Designers, and the Society of Municipal Arborists, she is a lifetime honorary member of the American Society of Landscape Architects. Nancy serves on the board of directors of Friends of Trees and on the Policy Committee of Alliance for Community Trees.

In recognition of her lifetime tree advocacy and stewardship efforts, The Arbor Day Foundation presented Nancy with the 2014 Frederick Law Olmsted Award and Friends of Trees honored her with the 2014 Garry Oak Award.

Jared Carlson
Jared Carlson is a successful entrepreneur who has been dedicating his efforts towards saving the rain forests and working towards using trees as an avenue for solving global problems. To date, Jared has been instrumental in preserving 52 million square feet of rain forest annually and setting in motion the saving of over 130 million kilowatt hours in energy consumption. Through developing self-sustaining programs that deliver benefits to the consumer, the Arbor Day Foundation looks to leverage business to effect change in our world.

Linda Chalker-Scott
Dr. Linda Chalker-Scott is Washington State University’s extension urban horticulturist, an associate professor in the Department of Horticulture, and is an ISA Certified Arborist. She and her academic colleagues host The Garden Professors blog and Facebook pages, through which they educate and entertain an international audience.

Monika Chandler
Monika likes plants—she grows, eats, and admires many species. Unfortunately, some plant invaders threaten agricultural and natural systems. At the Minnesota Department of Agriculture, Monika works with public and private partners to find and control highly damaging species. She has a M.S. in applied plant science from the University of Minnesota.

Mark Chisholm
One part acrobat, one part expert rope climber, one part tree physiologist, and several parts competitor and thrill seeker, Mark Chisholm is a third-generation, certified arborist with his family-owned Aspen Tree Expert Company in New Jersey. His expertise in tree care has made him a sought-after consultant and industry spokesperson for the world of arboriculture, and he regularly travels the globe to consult with international arborist associations and conducts educational sessions nationwide on behalf of STIHL Inc. He has also done numerous national media interviews, including The Weather Channel’s Wake Up with Al.

Chisholm has won the International Society of Arboriculture (ISA) New Jersey Chapter Tree Climbing Championship 21 of the last 22 years and won the ISA International Tree Climbing Championship in 1997, 2001 and, again, in 2010.

Doug Courneya
Doug has a master’s and a bachelor’s degree in horticulture with an emphasis in arboriculture. He is also an ISA Certified Arborist and owns a tree care and landscape maintenance business. Doug has over 20 years of teaching experience through the Minnesota Extension Service and Rochester Community and Technical College.

Jeff Dawson
Jeff Dawson is a semi-retired professor of forest biology and tree physiology at the University of Illinois at Urbana-Champaign. He has taught and done research on trees and soils for 38 years at the University and is a Fellow of the Society of American Foresters.

Andrea Dierich
Andrea Dierich, the community trees program special projects coordinator at The Morton Arboretum, hails from Minnesota where she completed her undergraduate in forest resources and a graduate degree in urban forestry. She has over eight years of experience working with community forestry programs, is great at providing pessimistic presentations about invasive forest pests, and assisting folks with everything from inventories to writing management plans.

Mark Duntemann
Mark is the owner of Natural Path Urban Forestry Consultants. The company’s primary focus is developing tree management policies for public agencies. This experience informs his understanding of tree risk issues. Mark is an ISA Board Certified Master Arborist, an ISA Tree Risk Assessment Qualification instructor, and represents the ISA on the Council of Tree and Landscape Appraisers.
Speakers (Continued)

Adam Flett
Adam Flett is the stewardship coordinator for Friends of the Mississippi River. He has a B.S. in environmental science, policy, and management, and minor degree in forest resources from the University of Minnesota. Prior to FMR, Adam worked in community engagement, volunteerism, and communications related to restoration and forestry.

John Goodfellow
John W. Goodfellow has over 35 years’ experience in the vegetation management industry. He has been the principle researcher on several R&D projects focusing on the modes and causes of trees causing power interruptions. His consulting practice includes an active portfolio of R&D, management consulting, and expert witness projects.

Michelle Grabowski
One of our perennially popular speakers, Michelle has been an extension educator with the University of Minnesota Extension since 2006. She studied plant pathology at Michigan State University and North Carolina State University. Her work focuses on identification and management of current and emerging plant disease problems of horticultural crops in Minnesota.

Nick Grebe
Nick has a B.S. in horticulture from the University of Minnesota. He has been climbing for ten years, seven at Rainbow Treecare, and has competed in tree climbing competitions at the local and international level. Pruning young trees is where his passion is.

Jeff Hahn
Jeff has a master's degree in entomology and has worked for the University of Minnesota Extension for over 30 years. Jeff specializes in urban insects, including those found in landscapes. He provides insect information to many audiences, including arborists and professional applicators.

Dave Hanson
While at the University of Minnesota, Dave taught plant identification skills to any group that would listen, including a classroom full of dendrology students. Now, as a vegetation management specialist with MnDOT, Dave hones his plant identification and vegetation management skills almost daily—on plants from every corner of Minnesota.

Heather Holm
Author of the recently released book Pollinators of Native Plants, Heather Holm is the owner of a Minnesota-based landscape design and consulting business specializing in native landscapes. She is a passionate advocate for the use of native plants to attract and support pollinators, beneficial insects, and wildlife in residential landscapes, organic farms, and restored landscapes.

Geoff Kempter
Kempter is author of the ISA Best Management Practices Guide for Utility Pruning. He has been ISA certified since 1992, is a TRAQ instructor, and is a past member of the ISA Board of Directors and Certification Board. He holds a degree in natural resources from the University of Michigan.

Melissa LeVangie
Melissa LeVangie has been passionately involved in the field of Arboriculture for over 15 years. Ms. LeVangie works as a Massachusetts Department of Conservation & Recreation (DCR) tree climbing inspector for the Asian Longhorned Beetle Eradication Program in Worcester, Massachusetts. Melissa is the owner/operator of an arboricultural consulting firm called Trees New England based in central Massachusetts. She provides consulting to private, state, and federal entities and develops safety programs and websites for small tree care companies. She is an ISA Certified Tree Worker and Certified Arborist, a certified arborist in New Hampshire and Massachusetts, and a certified tree safety professional.

Elizabeth Maloney
Dr. Elizabeth Maloney is a family physician from Wyoming, Minnesota, and president of Partnership for Healing and Health, a company producing evidence-based education on Lyme disease for healthcare professionals and the general public. Her papers have been published in medical journals and she frequently speaks at medical conferences and hospitals.

Robert Marra
Dr. Marra is a plant pathologist with research specializations in forest pathology, mycology, population biology, and genetics. In addition to his research on the population genetics and ecology of the perennial target canker fungus, Neonectria ditissima, Dr. Marra is also studying the fungal pathogens associated with saltmarsh decline and boxwood blight, and is engaged in research utilizing tomography to nondestructively assess the presence and extent of internal decay in trees of the northern hardwood forest.

Hannah Mathers
Hannah Mathers is currently an independent horticultural research consultant in nursery and landscape. From 2000-2014, she was a professor at Ohio State University, Columbus, Ohio. Hannah is the recipient of several awards, including meritorious service, distinguished contributions, and promotion of diversity. She is a recognized national speaker and writer and is best known for her research in bio-rational, conventional, and alternative weed control in nursery crops and landscapes.

Jake Miesbauer
Jason “Jake” Miesbauer is an arboriculture researcher at The Morton Arboretum. His research focuses, in part, on tree biomechanics and factors that involve storm damage to urban trees. Jake earned his Ph.D. from the University of Florida and his bachelor’s degree from University of Wisconsin–Stevens Point.

Vince Mikulanis
Vince Mikulanis is a project manager for accounts in the Southwestern United States for Davey Resource Group. Vince manages projects for both utility and urban forestry clients. As a utility arborist, he also serves on the community forestry advisory board for the City of San Diego, California.
Speakers (Continued)

Rose Marie-Muzika
Rose is currently a professor of forestry at the University of Missouri and also serves as the associate director of the School of Natural Resources. She teaches forest ecology at the undergraduate level and graduate levels, Forest Health and Protection, and Forest Ecology Field Studies. Her active areas of research include causes and consequences of tree mortality and forest declines and historic disturbance regimes.

Stephen Nicholson
Stephen has spent nearly 40 years in forest health and protection and in forest regeneration and is not a practicing professional in Minnesota. He has worked on forest health programs on six continents and has worked in the public sector, in private industry, and as a self-employed consultant. Most of his efforts have been oriented towards the use of microbial-based insecticides.

Eric North
Eric is an instructor and researcher at the University of Minnesota. His current research is looking at urban tree resilience using techniques from dendrochronology.

Gail Nozal
Ms. Nozal has over twenty years of experience in urban forestry. Her experience includes presentations on tree care and urban forestry topics at the local and national level. She also serves as the chair of the Minnesota Society of Arboriculture Certification Committee. She holds a bachelor’s and a master’s degree in urban forestry from the University of Minnesota.

Will Nutter
Will Nutter is president/COO of Wright Tree Service Inc., based out of Des Moines, Iowa. Will has been employed in the tree business for the past 33 years. He is a past president of the Utility Arborist Association and is current chair of the Safety Committee, as well as a member of the Education Committee. Will is a Certified Arborist and started his career as a groundsperson and worked his way up through the ranks of his company.

Douglas Owens-Pike
Douglas founded EnergyScapes in 1989 after completing an M.S. in plant ecology at the University of Washington. He has received numerous awards for design and volunteer contributions that have advanced our understanding of how to apply ecological principles for landscapes that meet sustainable goals.

Jill Pokorny
Jill is a plant pathologist with the State & Private Forestry branch of the USDA Forest Service, located in St. Paul, Minnesota. She provides technical assistance in the areas of tree risk management, disease evaluation and management, and plant disease diagnostics. Her work focuses on developing publications and other educational materials, conducting training workshops, and transferring technology to end-users.

Philip Potyondy
Philip likes trees and people. He is the sustainable forestry coordinator at the Minneapolis Park & Recreation Board. Philip is a proud University of Minnesota graduate with an M.S. and B.S. in urban forestry, an ISA Certified Arborist Municipal Specialist, TCIA Certified Treecare Safety Professional, avid Arborator, and genuinely likes hi-vis.

Sgt. Dale Prokosch
Sgt. Prokosch joined the Minnesota State Patrol in 1999 and worked as a road trooper in the Hutchinson area. Before joining the Minnesota State Patrol, he was a deputy sheriff in Sibley County in Minnesota for 10 years.

Joe Rothlieutner
Joseph Rothlieutner is the tree improvement specialist at The Morton Arboretum and a representative of the Chicagoland Grows® program, a regionally-based plant introduction partnership. At the Arboretum he leads the new plant development program to select new cultivars of trees and shrubs for urban tolerance, pest resistance, and good behavior.

Bryant Scharenbroch
Bryant is an assistant professor of soil science at the University of Wisconsin-Steven Point and a research fellow at The Morton Arboretum. He is lead author on ISA’s BMP: Soil Management for Urban Trees. He is an associate editor for Arboriculture and Urban Trees. He is lead author on ISA’s BMP: Soil Management for Urban Trees. He is an associate editor for Arboriculture and Urban Trees.

Dave Scharfenberger
Dave is president of Wachtel Tree Science, Inc., an ISA Board Certified Master Arborist, and a graduate of the University of Wisconsin-Stevens Point with a B.S. in urban forestry. He has over 35 years of experience in the science of tree care and is an active member of numerous professional associations.

Matthew Stephens
Matthew Stephens works for NYC Parks where he currently leads the Tree Planting Program. He has increased the efficiency of the planting program while leading the development of Parks’ innovative tree procurement program. Matthew received a B.S. from Illinois State University and a M.S. from the University of Delaware.

Erika Svendsen
Dr. Erika Svendsen is a social scientist with the U.S. Forest Service. Her work is focused on environmental stewardship as it relates to social resilience, civic engagement, and human well-being. Erika co-directs the NYC Urban Field Station, a multi-sector collaborative, dedicated to improving the quality of life through research and practice of natural resource management. Learn more about the NYC Urban Field Station here.
Speakers (Continued)

James Urban
James Urban specializes in the design of trees and soils in urban spaces. He has written and lectured extensively on this subject and has designed many innovations in soil approaches. His 2008 book, Up By Roots: Healthy Trees and Soils in the Built Environment, is an industry standard.

Philip van Wassenaer
Philip van Wassenaer, B.S. environmental sciences, master of forest conservation, is the principal consultant for Urban Forest Innovations, Inc., which specializes in the preservation, enhancement, and management of the urban forest using a research- and science-based approach. He is an ISA Certified Arborist, member of ASCA, a past president and director of the Ontario Urban Forest Council, and a 2009 recipient of the ISA True Professionals of Arboriculture Award.

Jenna Williams
Jenna has a background in both natural resources and communications and currently works for the University of Minnesota. She is also currently studying for her master’s in strategic communication at the University of Minnesota.

Kathy Wolf
Dr. Kathleen Wolf is a research social scientist with the University of Washington and with the USDA Forest Service, Pacific Northwest Research Station. As a social scientist her professional mission is to discover, understand, and communicate human behavior and benefits, as people experience nature in cities and towns. Read her research overview here.

Anna Yang
After completing a B.S. in plant biology in 2011 at the University of Minnesota, Anna began work with Dr. Jennifer Juzwik on a Thousand Cankers Disease detection project. In 2012, she began work towards a M.S. with a focus on the use of molecular tools to detect the oak wilt pathogen and will soon complete her graduate degree requirements.

Tom Zetterstrom
Tom Zetterstrom, trained in the care of trees by his arborist father, studied botany and art at Colorado College. His Portraits of American Trees photographs are represented in 40 museums. In 2011, he received the Public Awareness of Trees award from the Arbor Day Foundation, and in 2013, the Ossenbrugen Award for Meritorious Service from the Connecticut Urban Forest Council.
SESSION DESCRIPTIONS

General Sessions

Changing Climates…Changing Tree Species, Nancy Buley
Nancy will discuss her recommendations for tree species that are more likely to not just survive the progressively challenging urban landscape climates in the Midwest, but actually thrive and contribute.

Diagnosing Long- and Short-Term Effects of Herbicides on Trees, Hannah Mathers
The conventional catastrophic injury symptoms normally associated with short-term herbicide use in diagnosing herbicide damage will be covered. However, the long-term role of certain pre and post-emergence herbicides, in chronic disorders such as disrupted acclimation, reduced hardiness, reduced nutrient uptake, and weakened tissue integrity, following repeated use near or on woody landscape plants, will also be presented.

Force of Impact Associated with Tree Failures; Characterizing Branch Failure Line Strikes, John Goodfellow
Target strikes were simulated in a series of branch drop tests. Potential energy, kinetic energy, momentum transfer, and the force of impact on the target were calculated. This information can be used to assess the consequences of impact on targets such as overhead electric conductors, man-made structures, and potentially, people.

How to Know When to Cable Trees and What to Use, Mark Chisholm
This presentation is aimed to help you know when a tree can be cabled successfully and when it cannot. We will look at different types of systems and what is involved in using each.

The Evolution of Soils Concepts for Street Trees, James Urban
Prior to 1980, most street trees were planted into small holes and existing soil. Some trees were lucky and grew, while others declined. This lecture will review the evolution of ideas and the important requirements when designing spaces for city trees.

To Your Good Health! Research about Trees and Wellness, Kathy Wolf
Nearly 40 years of studies have explored the human health and wellness benefits provided by experiences of parks, gardens, trees, and green spaces in cities and towns. Highlights of this rich and diverse evidence base will be presented, as well as, what this means for policy and planning for trees.

Concurrent Sessions

A Review of ISA Certification Categories: How Do I Get There from Here? Gail Nozal
(This session will only be given once)
Learn what it takes to become an ISA Certified Arborist or how to apply for additional ISA certifications or qualification. You will have an opportunity to ask questions about the application process, test preparation resources, and learn about basic test-taking methods that will help you prepare for your exam.

A View from the Top of the Redwood Forest, Philip van Wassenaer
(This session will only be given once)
This presentation draws from a climbing expedition with Dr. Steve Sillett, the world’s foremost redwood researcher, during which the team used sonic tomography in the highest reaches of the redwoods. While the technical assessments are interesting, this rare look into the canopy of the Coast redwoods will leave the audience in awe of these majestic trees.

Advanced Tree Biology, Eric North
A detailed look at the biological processes of water conductance and wood creation. Using the principles of tree biology to better understand management and maintenance implications for urban trees.

An Urban Forester’s Overview and Discussion of Tree Inventory Management Software, Philip Potyondy
This session will present an overview of a handful of tree inventory management software solutions. Bring your questions, criticism, and ideas. Besides showing examples of some current tools, this session will also include time for participants to share their experiences.

Applied Tree Biology, Doug Courny
Understanding tree biology is critical to arborists. This class will discuss tree biology and how it influences tree care decisions. You will learn how pruning, fertilizing, soil enhancement, and other practices affect tree health and how to communicate these concepts to clients.

Biochar and Arboriculture: What is it? Does it work? Bryant Scharenbroch
Biochar is solid material obtained from the carbonization of biomass. It has great potential to improve urban soil quality and tree health, but to date, few studies have been conducted. Research findings over the past five years on the efficacy of biochar for urban soil improvement and promotion of tree health will be presented.

Biology and Management of Flood-Tolerant Tree Species in the Urban Landscape, Jeff Dawson
Understanding rankings and traits of flood-tolerant tree species can increase efficiency of tree selection and management. Adoptions to low soil oxygen diffusion with flooding have implications for selecting trees for compacted, paved, and other soil conditions. Tree characteristics such as “water-seeking roots” can also be avoided using knowledge of flood tolerance.

Botanical Barbarians: How to Identify and Defend Against Invading Plant Hordes, Monika Chandler
Invasive plants are overtaking many of our lands and destroying our landscapes. Learn how to identify and manage both emerging and common woody invasives including Oriental bittersweet, Japanese barberry, Asian bush honeysuckles, and common buckthorn.

Breeding Tomorrow’s Trees, Joe Rothleutner
Where do new cultivars come from? If you are curious, join us for a talk on the birds, the bees, and most importantly new trees! We will talk about chance seedlings, controlled pollinations, mutations, propagation, marketing; all to bring the next generation of better trees and shrubs to our landscapes.
Session Descriptions (Continued)

Capacity: Maximizing Your Community’s Power, Andrea Dierich
Urban forestry programs are difficult to fund, sustain, and run. Different inputs towards building a program’s capacity can assist with all of these areas. Find out what you might be overlooking to help strengthen your program.

Climbing Tips for Long-Term Health, Melissa LeVangie
Today, you’re fine. Tomorrow, you may be disabled, but not from falling out of a tree. You may finally succumb to years of ergonomic stress on your musculoskeletal system that will bring on a chronic carpal tunnel, elbow, or shoulder injury. These injuries are career-ending disorders and are running rampant through the industry. Unique climbing methods and equipment are replacing known techniques that have been proven harmful to the climber’s long-term physical health. LeVangie will cover the healthy climber’s options for more ergonomic, efficient, and safer tree climbing that will keep them in good physical shape. Melissa will cover case studies of working climbers who have recognized their musculoskeletal overuse problems and how to avoid becoming a part of this statistic.

Closing the Loop on Urban Wood Utilization, Ian Brown
The City of Milwaukee removes approximately 3,000 hazardous trees annually. Urban wood utilization has reduced the city’s disposal cost by 50%, returned locally-sourced wood products to the region, and increased public awareness of this excellent resource.

Commercial Drivers and Equipment Laws: Awareness and Enforcement, Sgt. Dale Prokosch
Sgt. Prokosch will familiarize and assist commercial vehicle owners and drivers with the laws concerning driver’s license class, health cards, hours of service, USDOT#, what to display on sides of commercial vehicle, and required equipment.

Common Diseases of Oaks in the Midwest, Jill Pokorny
Jill will guide you through a discussion of the common diseases that occur on oak trees in the Midwest, including an update on bur oak blight. She will compare and contrast diagnostic images and key features of each disease and provide a handy pocket guide for use in the field.

Communicating Trees, Nancy Buley
(This session will only be given once)
Trees have stories to tell, but have no voice. Communicating their value to diverse stakeholder groups is an important aspect of growing healthy urban forests. A vast body of research validates their vital benefits; environmental, economic, aesthetic, and social. Be the Lorax and speak for trees by tapping into resources for communicating their value and building community support for sustainable forests.

Communication Planning: Spread the Word Faster than EAB, Jenna Williams
Are you effectively communicating your message or does the story have a mind of its own? This session will cover messaging, audience, and media strategies to help you get your message out. Special attention will be given to doing more with limited resources.

Contract Growing Trees: NYC’s Million Trees Initiative, Matthew Stephens
New York City is concluding a major planting initiative that has planted one million trees. The presentation will provide a brief overview of the MillionTrees initiative, historical planting data for New York City, as well as outline details on NYC’s species diversification that was made possible through contract growing with private nurseries.

Cultivating Social Resilience: Greening as a Catalyst for Recovery and Renewal, Erika Svendsen
This presentation will draw upon the scientist’s research on urban environmental stewardship and human well-being. Research findings will reveal the abiding qualities of community-based greening projects and how these activities play a unique role in strengthening social cohesion and civic engagement. Particular attention will be given to the active role of greening in the aftermath of acute and chronic disturbance.

Developing Long-Term Employees for Success, Dave Scharfenberger
Employees are the life blood of a business. Dave will discuss steps taken at Wachtel Tree Science to allow the company to be profitable and grow every year for the past 20 years. He will review factors and experiences in hiring, training, company structure, and growing a team that have led to success.

Developing Trees as Simple Fractals, Nick Grebe
Planning or correcting the structure of a young tree can be confusing. This course will use fractals to make a simple map of a tree’s structure. Using this map we can know where to make cuts and the tree’s responses.

Drought and Its Impact on Tree Health, Robert Marra
With climate change, we are seeing an increase in the frequency and severity of droughts. This session will review current understanding of the consequences of drought on tree health, with particular focus placed on the long-term effects of drought on the urban forest.

Elms in the Community Forest, Tom Zetterstrom
Elm Watch founding director, Tom Zetterstrom, reveals through old photographs, the historic prominence of this iconic street tree. Dutch elm disease taught us the risks of monocultures planting. “Elms” explores appropriate elm-scapes relying on concepts of Keystone Elms in diverse and sustainable designs for streets, campuses, parks, and parking lots.

Establishing Tree Risk Tolerances for Communities, Mark Duntemann
Understanding risk tolerances is an important, but rarely discussed, element of tree risk management. The first part of this session will detail simple methods of analysis that communities can implement to identify risk thresholds and tolerances. This topic will be followed with a discussion on recommendations to address the outcomes of the risk threshold analysis. The session will conclude with a review on what risk topics to articulate if litigation were to occur.
Session Descriptions (Continued)

Helping Hands: Letting Volunteers Drive Restoration, Adam Flett
Extra hands can make lighter work. Friends of the Mississippi River engages volunteers in hands-on restoration by utilizing their skills and enthusiasm in our restoration efforts. FMR’s value-added and volunteer-centric approach has proved worthwhile in garnering an engaged, active volunteer base for accomplishing site-based and organizational goals.

Improving Oak Wilt Diagnostics in Minnesota, Anna Yang
This is an encore presentation from the November, 2104 MnSTAC Forum. Early and accurate diagnosis of oak wilt is important when disease control action is planned. When laboratory diagnosis is needed, standard isolation protocols rely on high quality samples and require many days for incubation. We tested the use of two new molecular tools, nested PCR and real-time PCR, to detect the fungus directly from drill shavings taken from diseased sapwood.

Know Your Enemy: Successful Disease Management Through an Understanding of Pathogen Biology, Michelle Grabowski
In order to successfully prevent and manage tree diseases, arborists need to know their enemy. Tree diseases may be caused by fungi, bacteria, nematodes, viruses, and phytoplasmas. Learn how these pathogens survive, spread, infect, and cause disease. Find the vulnerabilities of each pathogen group and learn how to utilize this information to manage and prevent tree diseases.

Lessons Learned from the Past Four Safety Summits, Will Nutter
UAA, in cooperation with several utilities and contractors, have put on four Safety Summits around the U.S. with an emphasis on crew level participation. We would like to share some of the things we learned over the past two years and how it may relate to the work you are doing.

Leverage Private Dollars for Tree Planting Through Energy Saving Trees, Jared Carlson
Energy-Saving Trees is a turnkey interactive mapping program with the Arbor Day Foundation that provides energy efficiency, positive community relations, and education to residents on the best place to plant a tree on their property. The program fosters improved customer satisfaction and substantial positive media attention for community improvement while providing an authentic tangible solution to reduce peak demand and energy consumption. Learn how other communities are leveraging this program to raise the funds for tree planting.

Looking at Tree Rings: The Inside Story of Forest Health, Rose Marie-Muzika
This presentation will provide a brief overview of dendrochronology and dendroecology and disclose several examples in which tree growth and vigor may be revealed through the tree ring record. The tree ring record provides insight into temporal patterns of disturbance and agents that compromise tree health.

Making Proper (Sometimes Tough) Tree Treatment Decisions, Rex Bastian
As with human maladies, tree problems may have several, one, or no good treatment options. Deciding what specific treatment regime to follow may often have both positive and negative aspects. Your “bedside manner” can be very important when working with your clients and their trees.

PHC: The Key to a Healthy Landscape, Erika Saalau-Rojas
If you want to learn basic guidelines to establish and maintain a healthy landscape, this presentation is for you. PHC, or Plant Health Care, is a landscape management approach that emphasizes pest and disease prevention, rather than pest and disease control.

Planning for Success—Managing our Forests in the Right (of) Way, Vince Mikulanis
Urban forestry and utility vegetation managers historically have not always been on the same page when managing their programs. However, both have similar goals in mind and when a cooperative plan emerges, both sides win. This presentation will focus on several examples of managing the Right of Way—The Right Way.

Pruning Young Elms, Tom Zetterstrom
(This session will only be given once)
Initially, we examine mature elm form, then based on Elm Watch plantings in two-dozen towns, describe pruning objectives for a variety of elm cultivars, including Princeton, Valley Forge, New Harmony, Jefferson, Accolade, and others. Sequential photos over several years reveal improved crown structure with decreased risk of branch failure.

Reduce the Crown, Retain the Tree, Philip van Wassenaer
The presentation examines aspects of crown reduction from several different perspectives. An understanding of natural tree survival strategies informs management approaches for aging trees. Large pruning wounds can lead to significant decay and structural weakness but if too little is cut, the tree may break, also causing large wounds. How do we find the appropriate dose?

Restoration of Storm-Damaged Trees, Jake Miesbauer
When urban trees are injured during storms, they often respond by sprouting new branches, often from latent buds. Although it is believed that some sprouts are weaker than normal branches, little empirical evidence exists to support this. This presentation will cover current recommendations and restoration treatments for storm damaged trees.

Roots on Steroids: How Mycorrhizae Work, Linda Chalker-Scott
Mycorrhizae are one of the best symbiotic relationships trees can have. This seminar will discuss the benefits of mycorrhizal fungi and explain how you can optimize environmental conditions to ensure healthy populations of these soil microbes. We’ll also consider commercial inoculants and whether scientific research supports their use.

Science in the Treetops: Advances in Forest Protection, Stephen Nicholson
The development of more environmentally-friendly pest control products has necessitated a significantly parallel improvement in the technology required to protect our forests. Since the days of “Silent Spring,” the forest health and protection community has taken the lead in developing application technology that optimizes results and has more recently found its way into agriculture.
Session Descriptions (Continued)

Selecting the Best Trees and Shrubs for Supporting Pollinators in the Upper Midwest, Heather Holm
Unlike honey bees that nest in hives, wild bees nest in the landscape and rely on the availability of suitable nesting sites. Bees of all kinds need a continuous supply of flowering plants throughout the growing season, including forage from trees and shrubs. Learn about the unique nesting habitat, life cycle, foraging behavior, and general characteristics of wild bees, and the top trees and shrubs for supporting all types of pollinators.

Soil as a Living System, Karen Ballen
While some types of soil microorganisms cause plant disease, others provide essential services for their plant “hosts” in return for benefits provided by the plant. This presentation will explore the relationship between plants and the community of beneficial soil microorganisms, emphasizing ways to manipulate the soil community to benefit trees.

The Mechanics of Installing Cabling Systems, Mark Chisholm
Okay, the decision has been made that cabling is the next, best step to save the tree. Now, how is it done, what tools are necessary, and what cabling options are available?

Those Galling Plant Galls! Jeff Hahn
Insect- and mite-induced galls are commonly found on many landscape trees and shrubs where their presence can be very upsetting to residents. In this presentation, we will discuss how plant galls are formed and how damaging they can be to plants. We’ll look at the most common plant galls and discuss management options.

Trees for a Changing Climate: A Focus on Proper Identification, Dave Hanson
A look at the winners and losers in the climate change scenarios. But, this talk isn’t about selection, this talk is about identification. How does one go about identifying those species that are showing up at the garden centers? Or, those species that are just showing up!

What Everyone Should Know about Lyme Disease, Elizabeth Maloney
This presentation reviews what Lyme disease is and how people become infected with it. Diagnosis and treatment issues are also discussed but the primary focus is on disease prevention.

Why do They Cut Them Like That? Utility Arboriculture Explained, Geoff Kempton
This presentation examines why trees near power lines assume such unusual shapes and presents the utility perspective, including legal obligations, regulatory constraints, interpretation of ANSI standards, and good and bad examples of utility arboriculture. A discussion of how to work with utilities and state regulators to improve utility practices is included.

Xeriscaping for Changing Midwest Climates, Douglas Owens-Pike
Designers should consider the impact of climate disruption as we manage erratic storm water run-off, extended droughts, and other extremes. Thoughtful plant selection will yield less care in the future by including those species best adapted to these extremes.
3900 Bethel Drive, St. Paul, MN 55112

From the North: Take I-35W south to the County Road E2 exit. Go east to Old S.T.H. 10 (Snelling Ave.), turn right, and take the first left into campus. Or take I-694 east to the Snelling Ave. (Highway 51) turnoff and proceed to campus entrance on the right, one-quarter mile south.

From the West: During daytime hours, take I-694 east to the Snelling Ave. (Highway 51) turnoff and proceed to campus entrance on the right, one-quarter mile south. During evening hours, take I-694 east; turn south onto I-35W. Take I-35W to the County Road E2 exit. Go east to Old S.T.H. 10 (Snelling Ave.), turn right, and take first left into campus.

From the East: During daytime hours, take I-694 west to Snelling Ave. (Highway 51) exit, then make immediate left at the turn-around to go south onto Snelling Ave./Highway 51. Campus entrance is one-half mile on the right. During evening hours, take I-694 west, turn south onto I-35W. Take I-35W to the County Road E2 exit. Go east to Old S.T.H. 10 (Snelling Ave.), turn right, and take first left into campus.

From the South: Take Snelling Ave. north and exit at County Road E. Turn left, proceed to Old S.T.H. 10 (Snelling Ave.), and turn right. Campus entrance is on the right. Or take I-35W north to the County Road E2 exit. Go east to Old S.T.H. 10 (Snelling Ave.), turn right, and take first left into campus.

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
   201 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
If you need to cancel your registration, a refund, minus $30, will be issued if you cancel by March 6, 2015. Cancellations after this date will not be eligible for a refund.
Registration Form
Minnesota Shade Tree Short Course – March 17-18, 2015

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**Registration Fees:**
- $185  Registration fee by March 1, 2015
- $200  Registration fee after March 1, 2015
- $40   Student registration fee
- $95   Tree board/park board member fee

**Attendance Plans**
- $25  Chipper Operator Workshop (Wednesday, March 18, 8-11:30 a.m.)
- I will attend the MSA mixer on Tuesday evening, March 17
- I request vegetarian lunches.
- I request vegan lunches.
- I request gluten-free lunches.

**Payment Method**
- Enclosed is a check or purchase order payable to the University of Minnesota
- Please bill my organization (purchase order or letter of authorization attached)
- Please charge my U of M EFS#:

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Name as it appears on card  Signature

NOTE: Registrations without payment will delay processing.
The information on this form is private data, used to identify and locate you, obtain payment, and enable instructors to better know their audience. Name, address, and method of payment are mandatory.
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