

Roots, Resilience, and Renewal:

The Science behind Strong, Healthy Trees

Wednesday, March 18, 2026 – 8:00 am to 3:45 pm

Virginia Western Community College (VWCC)

Whitman Theatre, 3099 Colonial Ave. SW, Roanoke, VA 24015



7:15 – 8:00 Check-in/Registration- Light Refreshments

Morning Session: VWCC, Roanoke VA- Indoor Lectures

7:45 – 8:00 **Welcome to the Workshop & Announcements**

Trees Virginia Board Representatives

VWCC Representative – Clark BeCraft

8:00 – 9:00 **Planning for Success by Thinking “Soil First”**

Dr. Susan Day, Ph.D., SITES AP, RCA #841, TRAQ

Everything from building construction to poor streetscape planning is working against you when you want to plant and establish healthy urban trees. Even high-quality nursery stock, good planting technique, and consistent irrigation may not overcome compacted soils, contamination, and tight spaces. Dr. Day will demonstrate how to think “Soil First” and make successful establishment and long-term survival a reality even for “difficult” native species and difficult sites. Learn techniques like site problem diagnosis, Soil Profile Rebuilding, design solutions, and the pros and cons of manufactured and engineered soils. These skills can open up new planting possibilities and are essential for expanding the urban forest species list.

9:00 – 10:00 **Understanding the Structural Intelligence in Trees**

Dr. Brian Kane, Ph.D., Professor University of Massachusetts- Amherst

Tree biomechanics is the application of mechanical principles to trees. Many arboricultural practices have mechanical aspects, such as the forces associated with climbing and rigging or how pruning and cabling can reduce the likelihood of tree failure. By understanding some basic concepts such as force, moment, stress, frequency, damping ratio and others, you'll be better prepared to apply them when you need to estimate the likelihood of failure of a tree, an anchor point, or your gear.

10:00 – 10:15 **** BREAK**

10:15 – 11:15 **Livelihoods, Lifeways, and Traditions of the Appalachian Forest Understory**

Shannon E. Bell, Ph.D., Professor of Sociology, Virginia Tech

The forests of Central and Southern Appalachia are among the most biodiverse ecosystems in the world. Scores of medicinal herbs and forest foods grow wild in the Appalachian woodland understory, and a large share of the herbal products found on the shelves of natural food stores and pharmacies are harvested from this region. In this talk, Professor Shannon Bell will discuss the history of Appalachian peoples' relationships with forest botanicals and ongoing efforts to expand forest farming in the region as both a conservation strategy and an income-generating opportunity.

11:15 – 12:15 **Nematodes: Beech Trees' Foliage Foes – BLD Diagnosis & Management Strategies**

Amber Stiller & Isabel Marez, Bartlett Tree Research Laboratory

Beech leaf disease (BLD) is an emerging threat to Beech in the Eastern United States and is caused by the foliar nematode *L. crenatae maccannii* (Lcm). Foliar symptoms of BLD are most striking, but buds and twigs are also negatively affected. Increasing severity of symptoms can dramatically reduce photosynthesis, and infected trees can die within several years. Management is possible, but strategies vary with landscape context, tree size, and symptom severity. We will discuss products that are effective against Lcm, management options in urban landscapes, and current research to manage BLD in forested settings.

12:15 – 1:15 ****LUNCH PROVIDED**

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Afternoon Session: VWCC, Roanoke VA - Outdoor Demonstrations (1:15 pm – 3:45 pm)

STATION 1: **Hands-on Problem Diagnosis for Urban Soils**, *Dr. Susan D. Day*

A critical part of any urban forest problem diagnosis or pre-planting assessment is an investigation of soil conditions. What do we have? Is it suitable for my species? How can we fix it? Dr. Day will demonstrate approaches to reading the site, where and how to conduct soil tests, and how to interpret what you see. Will include discussions of remediation approaches for difficult sites.

STATION 2: **Beech Leaf Disease Identification & Site Review**, *Bartlett Tree Research Laboratories*

This session will walk participants through the process of identifying Beech Leaf Disease as well as look at the site to discuss common urban site challenges.

STATION 3: **Tree Biomechanics in Practice**, *Dr. Brian Kane*

This will build on Dr. Brian Kane's presentation from the morning on tree biomechanics.

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Speaker Bios

Dr. Susan D. Day, Ph.D., SITES AP, RCA #841, TRAQ

Adjunct Professor of Urban Forestry and Urban Soils, University of British Columbia, Vancouver, Canada

Emerita Faculty, Virginia Tech

Susan is a professor of urban forests and urban soils specializing in the below-ground portion of urban trees. Susan's pioneering research on soil rehabilitation has informed best practices for land development, leading to healthier city environments and improved sustainability standards. Her research has focused primarily on disturbance from land development, soil blends, stormwater management, and constrained urban streetscapes. She has led numerous studies on soil volume, engineered and manufactured soils, soil compaction, fill soil, and soil rehabilitation. She helped shape the Sustainable Sites Initiative (SITES®) crediting system for soils and has published more than 150 articles and book chapters on urban forests and urban soils. Susan is an Emerita faculty member in the Department of Forest Resources and Environmental Conservation at Virginia Tech as well as holding faculty appointments at Oregon State University and the University of British Columbia in Vancouver, Canada, where she was director of their urban forestry program. She is a two-time recipient of the ISA's L.C. Chadwick Award for Arboricultural Research and currently works as a consultant in Richmond, Virginia. Susan holds a B.A. from Yale University, an M.S. from Cornell University, and a Ph.D. from Virginia Tech.

Dr. Brian Kane, Ph.D., University of Massachusetts - Amherst

Dr. Brian Kane is the Massachusetts Arborists Association Professor of Arboriculture at the University of Massachusetts – Amherst. He is an ISA Certified Arborist and TRAQ credential holder who began dragging brush in 1988. He has written many scholarly and trade articles and given presentations all over the world on the mechanical aspects of tree work. He is co-author of the 3rd editions of ISA's BMPs on Tree Risk Assessment and Support Systems, as well as the TRAQ Manual.

Dr. Shannon Bell, Ph.D., Virginia Tech

Dr. Shannon Bell is a professor in the Department of Sociology at Virginia Tech, where she teaches classes on environmental sociology and Appalachian studies. Professor Bell leads the [Forest Botanicals Region Social Ecology Lab](#), which conducts research and outreach to support the traditions, lifeways, and livelihoods that connect Appalachian people to the medicinal herbs and wild foods of the forest understory. Since 2023, she has worked with Appalachian Sustainable Development and the City of Norton, Virginia to create the [Forest Botanicals Region Living Monument](#), an education and outreach initiative that celebrates the cultural, historical, medicinal, ecological, and economic importance that Appalachian forest botanicals have long held for a diversity of people, stretching from before colonization to today.

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Isabel Marez, Research Technician, Bartlett Tree Experts

Isabel Marez is a Research Technician with Bartlett Tree Experts, a science-based tree care company that manages urban trees across North America, England, and Ireland. She is based at the Bartlett Tree Research Laboratory in Charlotte, NC. Her role includes working on research projects that aim to formulate IPM strategies against pest and diseases which promote tree health in various regions throughout North America. She completed her undergraduate degree at UNC Charlotte in Biology with a minor in Environmental Science.

Amber Stiller, Research Technician, Bartlett Tree Experts

Amber Stiller is a Research Technician with Bartlett Tree Experts, a science-based tree care company that manages urban trees across North America, England, and Ireland. Amber is based at the Bartlett Tree Research Laboratory in Charlotte, NC, where she is involved in a variety of research projects that aim to formulate management strategies that promote urban tree health. Examples of a few of these project topics include methods to promote soil health, activate tree defense mechanisms, and sustainably manage pests and diseases. In particular, Amber is most interested in the field of forest entomology in which she is researching the use of biological control to manage native and non-native urban tree pest outbreaks. Amber holds a Bachelor of Science in Biology from UNC Charlotte and a Master of Science in Entomology from The Ohio State University.