

# In the Shade

**NEWSLETTER OF THE ISA TEXAS CHAPTER  
APRIL 2024**



Texas Chapter  
International Society  
of Arboriculture

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## From the President

Hello fellow Texas tree lovers and enthusiasts:

For many of us there is no greater time of the year than right now. Outdoor temperatures are still agreeable, the soil is asking for plants, and we have a vision and desire to green things up in our landscape world. Enjoy the season and make a difference!

Since we last visited the Executive Committee has officially introduced Gene Gehring as the new Executive Director for our Texas Chapter. Look for a profile article in this issue on Gene and welcome him aboard.

While it may seem a long way off, plans for the 2024 Texas Tree Conference are well underway. Ronnie Nelson, Chapter Vice President, is well ahead of the game and Committee chairs are filling the speaking slots with a wide range of topics and speakers. It's shaping up to be another banner year.

Take a look inside this issue and discover all the educational opportunities available to increase your knowledge base, network with others and see new vistas.

Finally, take a moment and reflect on how vital your role is in Texas arboriculture. You and you alone have the unique capability to change your world and advance arboricultural practices. Observe what others are doing in your community. Find a place to get involved, an opportunity to assist and let your light shine brightly. Together, little by little, we can shape our vocation allowing others to see how professional we are and that we take pride in our work.

Cheers and happy sailing,

—Gary O'Neil



## In the Shade

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### On the Cover:

Eastern red bud (*Cercis canadensis*) in bloom (left) and Chinese or lacebark elm (*Ulmus parvifolia*) trunk (right) in the Dallas Arboretum and Botanical Garden, March, 2022.

April 2024

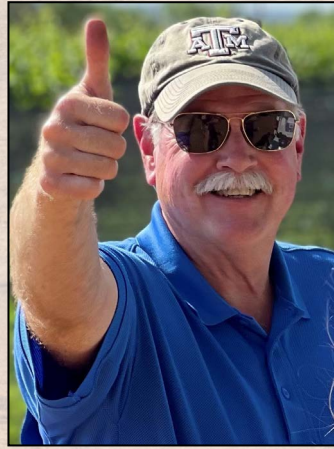
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**The tree bed is  
the unsung hero  
of the urban  
forest.”**

— Andrea Parker, Executive  
Director of the Gowanus Canal  
Conservancy, Brooklyn, NY  
New York Times, March 7, 2024

## Editor's Note



One of the surprisingly difficult tasks as Editor of ITS concerns one of the smallest features in the newsletter – the Quote! The Quote (Page 3) should bring to mind one of the technical articles in this month's ITS (page 14 – 15). Wei Zhang describes the critical role soil oxygen

plays in tree health. One can imagine the struggle for oxygen when the poor tree is surrounded by concrete! There is another technical article this month concerning the current status of clinical diagnosis of oak wilt. Dr. Demian Gomez, Hannah Ayala and Sheila McBride summarize approaches used to detect oak wilt infections in this article. The science of plant disease diagnostics is ever changing. Keeping up with those advances in tree diagnostics will be a lifelong learning process.

The Texas Chapter of ISA went through a historic change in management in the past few months by hiring the Texas Arborist Management LLC (TeAM) to replace the legendary Executive Director John Geidraitus. Rebecca Johnson, a member of the Executive Committee of our Board of Directors and Chair of the Nominations and Elections Committee, describes the selection process and some background information concerning our new management group on Page 17 of this issue.

More Board business is featured in the article on the work of the ISA Texas Bilingual Committee written by the Chairperson Amy Heath (Page 6). If you believe these activities are important and want to help out, then Rebecca Johnson describes the process for serving on the Board of Directors for ISAT or one of the many committees required to keep our Chapter functioning smoothly. If you have ever wanted to participate now is the time to step up!

You will also find the regular ITS features and advertisers for goods and services to make your job better. Enjoy the beautiful spring weather and stay safe out there!

—David Appel



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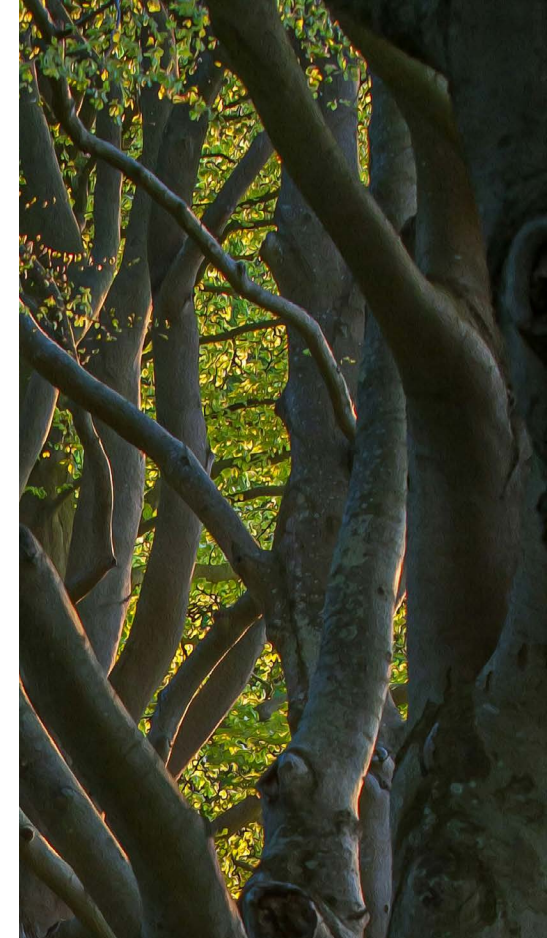



**Texas Chapter International Society of Arboriculture**

Are you a Chapter member? If not, go to [www.isatexas.com](http://www.isatexas.com) and join today!

Chapter member benefits include:

- **Publications:** In The Shade, a bi-monthly printed newsletter
- **Email Update:** TreEmail, a monthly calendar of tree events and important tree news
- **Networking and Promotional Opportunities:** Texas Tree Conference, Texas Tree Climbing Championship, Arbor Day and other events
- **Discounts:** Discounts on Texas Chapter seminars, workshops, and conferences
- **Online Learning:** Monthly/bi-monthly educational webinars created by the Chapter



## ISAT Diagnostic Workshop a Success

During March 11-12, the annual ISAT Tree Diagnostic Workshop was held on the campus of Texas A&M University in College Station, TX. Participants toured the Texas A&M Plant Diagnostic Laboratory, the TAMU campus to discuss tree diagnostic methods, and got a lesson in microscopic examination of diseased tissues and fungal pathogens. Be looking for next year's workshop and other ISAT events to interact with fellow arborists and increase your skills! ■

# Support for Spanish-Speaking Tree Professionals Growing

Apoyo para los profesionales de árboles hispanoparlante en crecimiento

Amy Langbein Heath, Board Certified Master Arborist and Owner of Texas Tree Surgeons

The Bilingual Committee and all of the members of the ISAT Board are excited about the continuing development of Spanish/English bilingual education for arborists in Texas. This past February, Trinity Blacklands Urban Forestry Council hosted the First Annual North Texas Bilingual Tree Care Worker Workshop in Dallas with over 130 participants in attendance, a full house!

**El Comité Bilingüe y todos los miembros de la Junta de ISAT están entusiasmados con el desarrollo continuo de la educación bilingüe español/inglés para arbolistas en Texas. El febrero pasado, el Consejo Forestal Urbano de Trinity Blacklands organizó el Primer Taller Anual para Trabajadores Bilingüe de Cuidado de Árboles del Norte de Texas en Dallas con más de 130 participantes, ¡un lleno total!**

Attendees received bilingual Spanish and English training in topics such as decay in trees, crane operation, and the physics of rigging, with emphasis throughout on best practices and safety. Presenters included Eduardo Medina of Davey Tree Expert Company, Demian Gomez of the Texas A&M Forest Service, and Hans Tielmann of NJ Crane Expert, with Booker Arradondo, Amy Burkett, and Tyler Burkett of the San Antonio Arborist Association (SAAA), veterans at bilingual workshops, making sure everything ran smoothly.

**Los asistentes recibieron capacitación bilingüe en español e inglés en temas como el deterioro de los árboles, el funcionamiento de grúas y la física de los aparejos, con énfasis en las mejores prácticas y la seguridad. Los presentadores incluyeron a Eduardo Medina de Davey Tree Expert, Demian Gomez del Servicio Forestal de Texas A&M y Hans Tielmann de NJ Crane Expert, con Booker Arradondo y Amy Burkett y Tyler Burkett de la Asociación de Arbolistas de San Antonio (SAAA), veteranos de talleres**

**bilingüe, asegurándose de que todo haya ido bien.**

San Antonio and the SAAA also recently hosted their 14th annual bilingual workshop, a huge success with increased attendance and sponsorship, and work is underway to host in-person bilingual workshops in other cities, starting with Houston for 2025. With the risks involved for arborists, it is critical that all tree workers have access to the best information in a language they can understand. To leave any segment of the Texas arboriculture profession uneducated puts everyone at risk. The more we can spread safety and tree care best practices, the better care Texas arborists can provide their trees, their customers, and themselves.

**San Antonio y la SAAA también organizaron recientemente su décimo cuarto taller bilingüe anual, un gran éxito con una mayor asistencia y patrocinio, y están trabajando para organizar talleres bilingües presenciales en otras ciudades, comenzando con Houston para 2025. Con los riesgos que implican para los arbolistas, es fundamental que todos los trabajadores de los árboles tengan acceso a la mejor información en un idioma que puedan comprender. Dejar a cualquier segmento de la profesión arborícola de Texas sin educación pone a todos en riesgo. Cuanto más podamos difundir las mejores prácticas de seguridad y cuidado de los árboles, mejor cuidado podrán brindar los arbolistas de Texas a sus árboles, a sus clientes y a ellos mismos.**

Looking ahead, one of the goals of the ISA Texas Bilingual Committee is to make the ISA Certified Arborist exam and all education material available to Spanish speakers. With 28.5% of Texans speaking Spanish at home, having the best, most up-to-date information accessible to everyone is long overdue. Expanding resources to Spanish speakers provides a pathway to advancing their careers within



arboriculture and encouraging Spanish speakers to become more involved in organizations like ISA Texas.

**Mirando hacia el futuro, uno de los objetivos del Comité Bilingüe de ISA Texas es hacer que el examen de Arbolista Certificado ISA y todo el material educativo estén disponibles para los hispanoparlantes. Dado que el 28.5% de los texanos hablan español en casa, hace mucho que era necesario tener la mejor y más actualizada información accesible para todos. Ampliar los recursos a los hispanohablantes proporciona un camino para avanzar en sus carreras dentro de la arboricultura y alentar a los hispanohablantes a involucrarse más en organizaciones como ISA Texas.**

In addition to the annual in-person workshops ISA Texas is hosting a monthly free bilingual webinar for anyone that is interested in learning more about tree care. While registration (and CEUs) are free this year, participants will need to register online to receive credit. This comprehensive series geared towards preparing for the Certified Arborist exam and covering arboriculture basics. Scheduled speakers include Micah Pace of Marlin Landscape Systems with an Introduction to Arboriculture, Demian Gomez covering oak wilt, and Francisco Sicilia of Rainbow Tree Science discussing soil health.

**Además de los talleres anuales en persona, ISA Texas organiza un seminario web bilingüe gratuito mensual para cualquier persona interesada en aprender más sobre el cuidado de los árboles. Aunque la inscripción (y las CEU) son gratuitas este año, los participantes deberán registrarse en línea para recibir crédito. Esta serie integral está orientada a la preparación para el examen de Certificado de Arbolista y cubre los conceptos básicos de la arboricultura. Los oradores programados incluyen a Micah Pace de Marlin Landscape Systems con una introducción a la arboricultura, Demian Gomez que cubre el marchitamiento del roble y Francisco Sicilia de Rainbow Tree Science que analiza la salud del suelo.**

These live webinars will be held every third Wednesday of the month, starting on March 20th at 6:30 am with the goal that companies could host them in their conference spaces before work starts, or have crews listen to them on the way to a job site. To sign up please visit this link: <https://bit.ly/ISATSpanish-languageMarch>

**Estos seminarios web en vivo se llevarán a cabo cada tercer miércoles del mes, a partir del 20 de marzo a las 6:30 am, con el objetivo de que las compañías puedan realizarlos en sus espacios de conferencias antes de que comience el trabajo, o que los equipos los escuchen de camino al trabajo. Para registrarse por favor visite este enlace:**

<https://bit.ly/ISATSpanish-languageMarch>

ISA Texas hopes to be able to regularly offer a certified arborist exam in Spanish by 2026. Currently, the Spanish exam is available by request. Additionally, the upcoming 2024 Texas Tree Conference, Academy, Trade Show and Tree School is scheduled for September 25-27, 2024 at the Waco Convention Center and will again feature Spanish-language sessions.

**ISA Texas espera poder ofrecer regularmente un examen de arbolista certificado en español para el 2026. Actualmente, el examen en español está disponible previa solicitud. Además, la próxima Conferencia, Academia, Feria Comercial y Escuela de Árboles de Texas 2024 está programada para el 25 y 27 de septiembre de 2024 en el Centro de Convenciones de Waco y nuevamente contará con sesiones en español.**

If you are bilingual or passionate about equitable education for all please reach out to Amy Langbein Heath, [amy@texastreesurgeons.com](mailto:amy@texastreesurgeons.com), or Gene Gehring, [gene@isatexas.com](mailto:gene@isatexas.com), about how you can help out on the ISA Texas Bilingual Committee.

**Si es bilingüe o le apasiona la educación equitativa para todos, comuníquese con Amy Langbein Heath, [amy@texastreesurgeons.com](mailto:amy@texastreesurgeons.com), o Gene Gehring, [gene@isatexas.com](mailto:gene@isatexas.com), para saber cómo puede ayudar en el Comité Bilingüe de ISA Texas. ■**



# Member Spotlight .....

## Shannon Slivinske City of Austin – Urban Forestry



### What is your favorite part of tree care?

I deeply enjoy learning about tree pathology, and given the opportunity, I love sharing on tree biology and fungi, and discussing the role fire plays in forest ecology. I also love participating in saw training and prescribed fire to manage forest health.

### What does attending WTCW mean to you/what do you hope to gain?

The workshop provides me a deep comradeship and source of knowledge in a sacred space that I cannot access anywhere else. I'm able to honor my knowledge deficits in a safe space and focus on progress, and on developing my teammates in a way that provides me reciprocal growth in a manner that no other program provides.

### Why do you choose to be an ISAT member?

I have been an ISAT member over the years because the organization has supported programs, workshops and conferences that have been fundamental to my professional and personal development for the entirety of my career as an arborist since 2009. The

organization has been a source of education and support not just for myself, but for my fellows, and the upcoming arborists that I so enjoy training and sharing my knowledge base with. ■

## DO YOU WANT TO BE A CERTIFIED ARBORIST?

### In-Person Prep Courses & Exams

Each time a Certified Arborist Exam is offered, there will be the opportunity to take the Municipal Specialist exam, Utility Specialist exam, and Certified Tree Climber written exam.

#### CERTIFIED ARBORIST EXAMS:

Austin -- May 3  
Midland -- May 24  
Waco, TX -- September 25  
Fort Worth, TX -- November 15

#### CERTIFIED ARBORIST PREP COURSES:

Midland, TX -- April 5, 12, 19, & 26  
Fort Worth, TX -- November 11-14

#### CERTIFIED TREE CLIMBER SKILLS EXAM:

A CTC skills exam will be offered at the Texas Tree Conference, September 2024  
If you are competing in the Texas Tree Climbing Championship and want to use this as your skills exam, let [megan@isatexas.com](mailto:megan@isatexas.com) know.



To submit your application and apply for an exam, please see ISA's Exam Information or email [megan@isatexas.com](mailto:megan@isatexas.com)

## New Members

Morgan Abbott..... College Station TX  
Kevin Agpalo..... West Tawakoni TX  
Nicholas Allison..... Leander TX  
Keiji Asakura..... Houston TX  
Zak Barela..... Brookfield WI  
Oliver Barron..... Austin TX  
Bradley Bennett..... Crowley TX  
Jacob Brumbelow..... League City TX  
Alexandra... Buckner..... Hurst TX  
Gustavo Calzada..... Austin TX  
Nicholas Camero..... Austin TX  
Patrick Cavanaugh..... Georgetown TX  
Randall Clark..... College Station TX  
David Dareing..... Mertzon TX  
Juan Deleon..... Dallas TX  
Alexander DeRoehn..... Austin TX  
John Donohue..... Austin TX  
Faisal Elmi..... Farmers Branch TX  
Anthony Flores..... Manor TX  
Julia Frisby..... Bullard TX  
Andrew Gaddy..... Lubbock TX  
Saul Gaona..... Houston TX  
Carolina Garcia..... Boerne TX  
Eduardo Garcia Campos..... San Antonio TX  
Carlos Gomez..... Fate TX  
Crystal Gonzales..... Houston TX  
Darren Goodman..... Waxahachie TX  
Dante Harris..... Richmond TX  
Alexander Hatzenbuehler..... Seguin TX  
Lawrence Hernandez..... Palmer TX  
Riley Holt..... Abilene TX  
Angela Howard-Bridinger..... Austin TX  
Thomas Iannetti..... Dallas TX  
Tiffany Jaeggi..... Austin TX  
Molly Kisel..... Houston TX  
Steve Lacewell..... San Antonio TX  
Micol Martin..... Sheridan TX  
Kayla Mendez..... San Antonio TX  
Ryan Moody..... Lindale TX  
Cody Nelson..... Buda TX  
Jose Orellana..... Friendswood TX  
Juan Pacheco..... Dallas TX  
Carlos Pena..... San Antonio TX  
Sarah Rectenwald..... Nacogdoches TX  
Wesley Reed..... Amarillo TX  
Cason Reid..... Woodville TX  
Dakota Renfro..... Bryan TX  
Margarita Robledo..... Irving TX  
John Rocha..... Houston TX  
Raymundo Roque..... Lake Dallas TX  
Jacob Salgado..... Canutillo TX  
Jonathon Saucedo..... Pflugerville TX  
Matthew Saulsgiver..... Georgetown TX  
Guadalupe Sida..... Lufkin TX  
Lily Simek..... Nacogdoches TX  
Bob Simoneau..... League City TX  
Nikolas Smilovsky..... Mesa AZ  
Quentin Stewart..... Tishomingo OK  
Wendell Tanner..... Austin TX  
Aaron Thompson..... Georgetown TX  
Megan Tisdale..... Canyon Lake TX  
David Tomlinson..... Austin TX  
Cesar Torres..... Farmers Branch TX  
Michael Trevino..... Dallas TX  
Pickett Warden..... Pearland TX  
Mark Webber..... West Chester OH  
Robbi Will..... San Antonio TX  
Guy Wilson..... San Antonio TX

## Newly Certified Members

CA Austin Adams..... Katy TX  
CA-Utility Maricella Arce..... Grand Prairie TX  
CA Cher Baise..... Arlington TX  
CA Oliver Barron..... Austin TX  
CA Nicholas Belitere..... Dallas TX  
CA Nicholas Camero..... Austin TX  
CA Nigel. Clark..... Winnsboro TX  
BCMA Jason Elliott..... Arlington TX  
CA Andrew Gaddy..... Lubbock TX  
CA Ethan Geer..... Denton TX  
CA Alan..Halter..... Austin TX  
CA Samuel Hanson..... Pflugerville TX  
CA Charles Harris..... Houston TX  
CA Alexander Hatzenbuehler..... Seguin TX  
BCMA Chad Hesters..... Bellville TX  
CA Alex Holguin..... Gainesville TX  
CA Adriane Horne..... Pflugerville TX  
CA Thomas Iannetti..... Dallas TX  
CA John..Imperial..... Denton TX  
CA Tiffany Jaeggi..... Austin TX  
CA Charles Jalufka..... Austin TX  
CA Anna Konvit..... Austin TX  
CA William Maas..... Austin TX  
CA Ismael Martinez..... Lewisville TX  
CA-Utility Joshua Maudlin..... Cypress TX  
CA Sawyer McGale..... Austin TX  
CA H McMullen..... Fort Worth TX  
CA Ryan Myers..... Georgetown TX  
CA Terry Rodgers..... Burnet TX  
CA Martin Rodriguez..... Humble TX  
CA Rachel Sarlls..... Stafford TX  
CA Adrian Vela..... Missouri City TX

# Texas Tree Critters



Cedar x hawthorne rust caused by the fungus *Gymnosporangium juniperi-virginiana* on eastern red cedar in April in College Station, TX

- The orange “horns” are protruding from the gall, called the telia stage on which teliospores are produced (one of five spore stages of the pathogen).
- The pathogen has an “alternate” host, in this case a native *Crateagus* species (hawthorne).
- Observant readers will note this pathogen goes by the same species name as the Tree Critter feature in the February, 2024 issue of *In the Shade*. This is a different spore stage of the same pathogen.
- Management: Remedial pruning to remove infected plant parts. Although hawthorn is being severely impacted, no management efforts are being implemented.

## 2024 ArborMaster TCC Climbing Kit Prize Package

The Texas Chapter is pleased to announce the 2024 ArborMaster TCC Climbing Kit Prize Package for the Tree Climbing Champion (TCC), held in conjunction with the chapter’s 2024 Tree Climbing Championship (TCC) event. This kit is being offered to each chapter champion (both man and woman, if applicable)! The package is intended to help equip the chapter representative(s) for the ISA’s International Tree Climbing Championship (ITCC) Competition.

Each prize package includes:

- Silky’s new Zubat Ultimate Professional 330mm Hand Saw
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# Oak Wilt Identification: Current Status and Challenges in Molecular Diagnosis

Demian F. Gomez<sup>1</sup>, V. Hannah Ayala<sup>2</sup>, Sheila McBride<sup>3</sup>.

1 Regional Forest Health Coordinator, Texas A&M Forest Service.

2 Head Diagnostician, Texas Plant Disease Diagnostic Lab, Texas A&M AgriLife Extension.

3 Texas A&M AgriLife Extension Specialist Emeritus.

Oak wilt is one of the most devastating diseases of oaks (*Quercus* spp.) in Central Texas. First recorded in Dallas, Texas in 1961, *Bretziella fagacearum*, the oak wilt pathogen, has caused severe losses to oak trees in 76 counties (Figure 1, below)

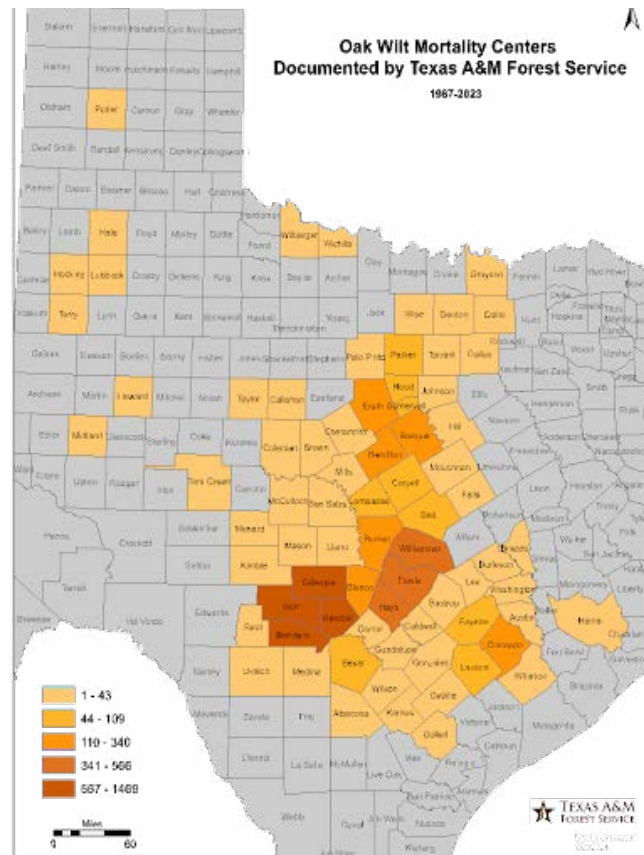


Figure 1. Oak wilt mortality centers documented by Texas A&M Forest Service.

Identification is a critical step in oak wilt management. In some instances where symptoms are obvious diagnosing oak wilt seems relatively simple. However, a lab confirmation is often warranted when symptoms are obscure or absent. While we know that oak

wilt is prolific throughout Central Texas, there are other causal agents that can present similar symptoms as oak wilt, such as drought, overwatering, freeze damage, and even lightning.

Fungal culturing is a valuable diagnostic tool as it will confirm the presence of oak wilt in cases where multiple factors can be contributing to current symptoms. A benefit of lab culturing the pathogen is that there is no chance of false positive results regarding the infection of a tree. Processing samples in a diagnostic laboratory involves standard pathogen isolation methods, which includes sterile techniques to expose the sapwood and plating on specialized media. This process requires an incubation period of up to 14 days before characteristic fungal features appear, both in terms of morphology and microscopy. Despite being a successful method detecting *B. fagacearum*, it has some limitations, particularly regarding sample quality. Poor sampling can be problematic as it can lead to false-negative results. An example of a poor sample would be a dried, dead branch in which the living pathogen no longer exists. For information on how to obtain a good sample, visit [texasoakwilt.org](http://texasoakwilt.org).

Pathogen detection methods based on molecular tools have proven to be useful in plant disease diagnosis. Polymerase chain reaction (PCR), a method that rapidly produces (amplifies) millions to billions of copies of a specific segment of DNA extracted from a sample, has shown to be faster and more sensitive when compared to traditional diagnostic methods. There are different types of PCRs, such as nested and real-time PCR (also known as quantitative PCR or qPCR). Nested PCR involves conventional PCR with two consecutive rounds of amplification, whereas real-time PCR follows the amplification of a targeted DNA molecule during the PCR and not at its end, as in conventional PCR. PCR is now a standard diagnostic method for many important plant diseases and is routinely applied in reliable plant diagnostic laboratories.

Nested PCR for oak wilt, with a first round of PCR with ITS (internal transcribed spacers) primers (general fungal primer pair ITS1F/ITS4) and the second round with CF primers (species-specific primers CF01/CF02), was first developed in 2011 (Wu et al. 2011) and then modified in 2017 (Yang & Juzwik 2017). Data suggests that nested PCR utilizing fungal DNA extracted from sapwood drill shavings of red and white oak, proved to be accurate as a diagnostic method for *B. fagacearum* (Yang & Juzwik 2017). This method has also proven to be effective for detection of the oak wilt fungus in trapped beetles (McLaughlin et al. 2022).

Despite successful detection of the oak wilt pathogen in wood, with nested PCR, it has been noted that endophytes (benign fungi that live within a tree) and other pathogens can provide false positives. This happens when the DNA of the non-target species that are not *B. fagacearum* is amplified (Lloyd et al. 2022). Adjustments to PCR conditions, such as different annealing temperatures (the temperature where primers bind to the sample) or modified primers for example, may eliminate

false positives. However, optimized PCR conditions for the oak wilt pathogen have not yet been published in peer-reviewed literature and are still being developed.

Recently, a qPCR assay has been developed for *B. fagacearum* (Bourgault et al. 2022). Unlike the nested PCR reported by Yang and Juzwik (2017), this assay is quantitative, allowing an estimation of the target species. Despite being highly specific and sensitive, qPCR is time-consuming, costly and requires specialized equipment, i.e., real-time PCR machine and technical expertise.

In other states where oak wilt is present, diagnostic labs base their assessment on fungal culture alone, or a combination of traditional culture and molecular tools. The Texas Plant Disease Diagnostic Lab with Texas A&M AgriLife currently conducts oak wilt diagnoses support with only traditional culturing.

As with every tree disease, identification is the most important step in proper management. It is recommended management decisions for oak wilt are not made solely on molecular identification. Particularly, if the details of the molecular analysis are unknown (PCR method, primers, PCR conditions, DNA extraction method). Some measure of the potential for false positives, or even false negatives, should be part of the interpretation process when diagnosing the disease. As with any diagnosis, interpretation of the results of any laboratory protocol is an essential part of the process. The pattern of mortality, signs and symptoms of oak wilt in the field, and condition of the sample, should also be considered when making assessments.

When conducted under proper conditions, nested PCR or qPCR can be useful tools to detect oak wilt. However, it is important to understand the limitations of these tools as different methods can lead to different success rates in the identification of the pathogen, providing ambiguous results or false positives. Primer design, DNA extraction methods, and other steps may vary among laboratories and can yield inconsistent



results. Because different laboratories use different methods, there are regional efforts in progress to improve molecular methods. The Texas A&M Forest Service and the TPPDL are working with private and public partners in and out of state to further develop and improve DNA testing by standardization of various protocols and increasing the reliability for oak wilt diagnosis.

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# Soil Oxygen: The Real Limiting Factor for Urban Trees

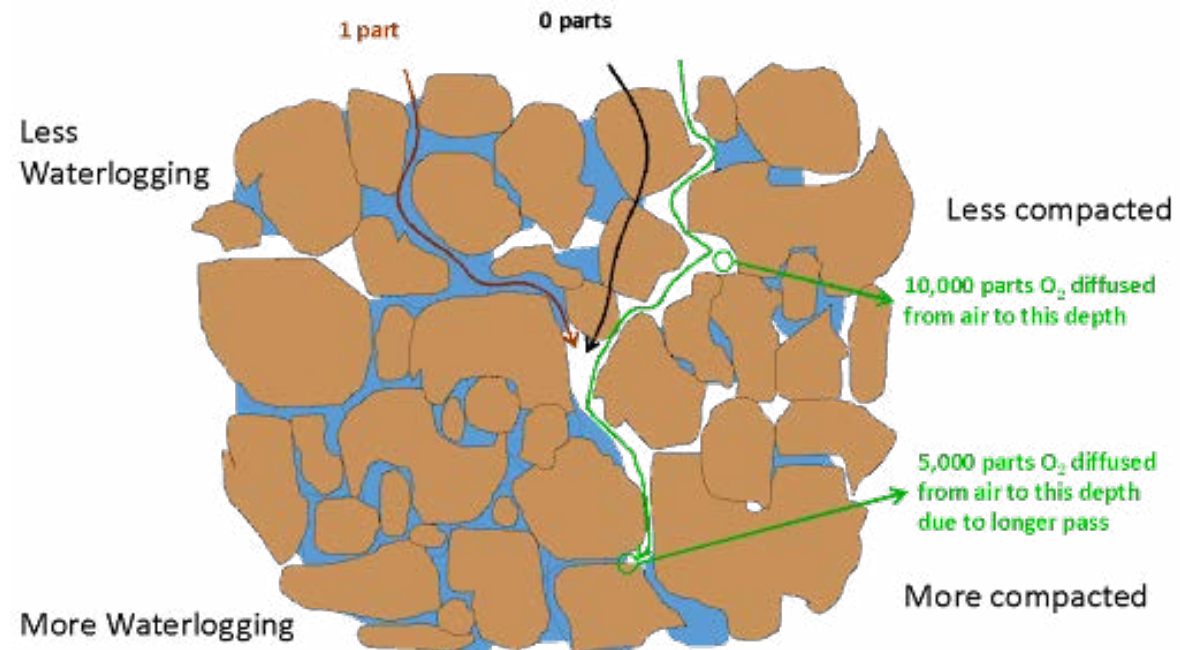
By Wei Zhang, Vice President for Research and Development, Zynnovation LLC

We are speaking to the choir when we talk about the importance of the urban forestry to the community. For trees in the harsh growing conditions in urban environments, there are a number of seemingly easy questions. But the reality tells us it is not that simple. Why do most trees only have shallow roots? Why are compacted soils bad? Why is the space under sidewalks so attractive to tree roots? How does waterlogging create the anaerobic conditions for roots? How long does it take for the anaerobic process to start? After trees are waterlogged, typically one can drain the water to save the trees. But it means the water is wasted. Is there another option.

Many professionals recommend against piling mulch against tree trunks and root collars (also known as volcano mulching). At the same time, researchers like Dr. Linda Chalker-Scott recommend using thick layer of arborist chips at “4-6 inch depth for ornamental sites and 8-12 inch

where they are growing. Oxygen molecules diffuse 10,000 times faster in air than in water. Since there are no reports on oxygen diffusion rate in solid soil particles, it is safe to assume it is zero. As illustrated in the diagram below, for every 10,000 parts of oxygen that travels through the air channels to a certain soil depth, only one part traveled through water-filled channels and zero parts traveled through the solid soil particles.

By definition, soil compaction is a process of reducing and destroying pore space in soil, which is common around places people live. The deeper the soil, the more compacted and waterlogged it is, because of gravity. Even when the soil is not compacted, the distance the oxygen molecules have to travel to a deeper location is longer. The same conditions exist with other landscape materials, e.g. mulch. The less pore space in the mulch due to the smaller particle sizes and the higher packing density of materials, the slower oxygen



depth for restoration sites...” Additionally, it doesn’t appear to cause issues when leaf litter in the natural forests covers the flare of young trees. Why both sides seem scientifically robust and yet so contradicting to each other? What is the difference between processed landscaping mulch, ground wood chips and leaves? When the top soil is stockpiled for years before used again in landscape, is it still the same top soil? Or it is just dirt?

What is the one thing common for all of these questions? Soil Oxygen. Most tree roots need oxygen and water to function. The oxygen should be available in the soil

travels through the mulch layer.

Using a simple, affordable and handheld oxygen meter that can be easily modified for soil applications, we have measured soil oxygen levels in waterlogged soils, compacted soils, natural soil at different depths, stockpiled soils, and under different mulch materials. We found waterlogging reduces soil oxygen level from 21% down to less than 10% in as little as 10 hours. Instead of adding liquid water that fills the voids in the soil, it can be added in the form of “Solid Water’ with Air Pockets.” The air pockets allowed the diffusion of soil oxygen, which was kept at 21%. Compacted

soil can restrict oxygen movement significantly. The air space in between the pieces of wood chips is much larger than that of triple-shredded mulch. Slightly compacted leaf pile has even more air space. The fine particles in the triple-shredded mulch are able to fill the pore space and restrict oxygen flow and may become problematic when piled too deep. We didn’t observe any oxygen level reduction under 12 inches deep of ground wood chips or dried leaves.

The reason trees grow roots under concrete sidewalks is because: 1) the soil under the sidewalk is so compacted that tree roots can’t grow there, and 2) there is both water condensation and air in between the compacted soil and the concrete sidewalk. Once the roots get started under the concrete they increase in diameter and offset the concrete.

Soil salinity can be caused by the use of deicing salts, irrigation with water containing high salinity such as reclaimed waste water and coastal flooding. According to a study by Yalin, et al, the salt content in soil may affect soil structure and the aeration. They further found that the soil oxygen level recovers during the winter months when irrigation with reclaimed waste water was stopped and rainfall flushes the salt out.

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# 2024 Events Update

By Gene Gehring

Below is the upcoming 2024 “Events Calendar.” I hope everyone has been reading our online newsletter “TreEmail.” It focuses on upcoming ISAT events and other Certified Arborist CEU opportunities. It is emailed on the first Wednesday of the month to Texas Chapter ISA members (non-opens three days later). The TreEmail goes out a second time 10 days later to the entire email list. Open workshop registrations will be announced first to ISAT members through “TreEmail.”

During the first three and a half months of 2024 we have held the “Masters” series workshop on Tree Appraisal, two full TRAQ courses and an in-person renewal, a diagnosis workshop, and a Spanish language webinar. In addition, we partnered/assisted with six other workshops.

In the upcoming three and a half months, we have scheduled a wildfire qualification workshop, two oak wilt qualifications, an oak wilt qualification renewal, three more Spanish language webinars and are partnering on two other events. We are currently working on an East Texas Arborist workshop.

The Texas Tree Climbing Championship will be held May 17-18 in Waxahachie. ISAT has contracted with Phillip Kelley to provide an advanced workshop on tree climbing, work positioning and anchor selection on May 16th before the comp.

Planning is underway for the 44th annual Texas Tree Conference September 25-27th in Waco. Mark your calendar NOW! For more information email [gene@isatexas.com](mailto:gene@isatexas.com).

## April

- 16th–17th – Regional Urban Forestry Conference, San Antonio (Bexar Branches Alliance)
- 30th–May 1st – Wildfire Risk Reduction Qualification (WRRQ), Austin

## May

- 1st – TRAQ Virtual Renewal (Southern Chapter)
- 17th – Texas Tree Climbing Championship (TTCC) Workshop, Waxahachie
- 16th–18th – Texas Tree Climbing Championship (TTCC), Waxahachie
- 22nd–23rd – Texas Oak Wilt Qualification (TOWQ), Glen Rose
- 29th – Texas Oak Wilt Qualification (TOWQ) RENEWAL, Virtual

## June

- 5th–6th – East Texas Tree Care Workshop, Nacogdoches
- 12th–13th – Texas Oak Wilt Qualification (TOWQ), Hye
- TBD – Tree Risk Assessment Qualification (TRAQ), Houston

## July

- 14th–18th – National Assoc. of County Ag. Agents Annual Meeting, Dallas (NACAA)

## August

- 7th – TRAQ Virtual Renewal (Southern Chapter)
- 12th–14th – ISA International Conference, Atlanta, GA (ISA)
- 15th–16th – TNLA EXPO, San Antonio (TNLA)

## September

- 10th–12th – Trees & Utilities Conference, Fort Worth (UAA)
- 25th – Tree Risk Assessment Qualification (TRAQ) RENEWAL, Waco
- 25th–27th – Texas Tree Conference, Waco

**Editor’s Note:** On February 13, 2024, in a Special Meeting the Board of Directors of the Texas Chapter of the International Society of Arboriculture voted to make an offer to fill the vacant Executive Director position. That offer culminated a thorough, comprehensive search for this critical management position in our Chapter and represents a significant development in the future success of the vibrant arboricultural industry in Texas. At an important juncture in the search, the Board realized that the complexities involved in managing our Chapter required more than just an Executive Director but needed the support of an organization management team. The following article provides some insight into the search and an introduction to our new leadership team.

## ISAT Board of Directors Selects New Executive Director

By Rebecca Johnson, Chair, Nominations and Elections Committee, ISAT

When long time Executive Director John Giedraitis called me to let me know he was not renewing his contract, it jumpstarted a process the Board had been discussing for a few years. Our strategic plan highlighted that the Board had not been the driver of the contracting process and that needed to change. We formed a committee with current board members, a past president, a TFS representative and a representative from ISA. When we started creating the scope of work, we realized that managing the operations of ISA Texas is a BIG job and would take someone with dedication and excellent organizational management skills.

We advertised the position nationwide on the Society of Association Executives website. After receiving over a dozen applications, the list was narrowed down to three highly qualified candidates. Following a tough interview process, Gene Gehring and Texas Arborist Management (TeAM) was the successful applicant. We’re relieved to not have to train a new team, but also confident that we chose the best candidate from our pool.

If you don’t know the team, read on for the following introduction: Gene Gehring and Megan Wood, Texas Arborist Management LLC (TeAM)

Gene is a familiar face in the industry, having been a member of ISA/ISAT since he was a student at Texas A&M in 1987. While at Texas A&M he earned a bachelor’s degree in urban forestry and a Master’s degree in plant pathology. Over the years, he has worked in almost every facet of the industry. In high school he worked at a plant nursery and in college worked for a landscape maintenance/construction company. While in college he worked on several mass tree planting and freelance climbing/pruning projects. Between his undergraduate and Master’s degrees, he worked for a tree care company on Long Island as a climber/foreman.

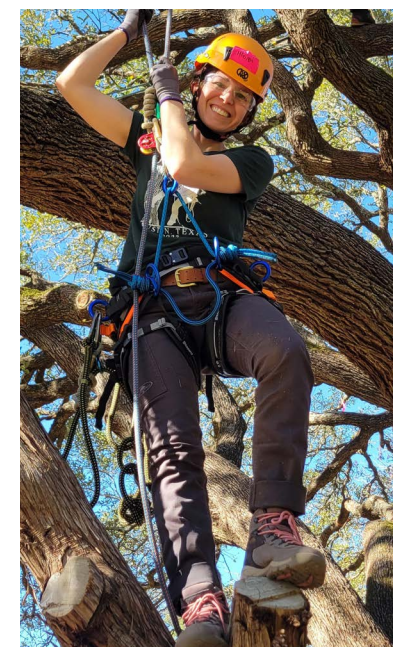
After receiving his Master’s degree, Gene joined the Texas Forest Service as the Oak Wilt/Urban Forester in the Austin area and served in that position for over eight years. For five of those years, he was the coordinator of the TFS Oak Wilt Suppression Project. After leaving TFS, he worked for Rainbow TreeCare Scientific Advancements as a technical representative.

In 1999, as a Board Certified Master Arborist, Gene started his own business as a consulting arborist focusing on oak wilt management. He also had the opportunity to work on a variety of other projects such as tree appraisals, inventories, transplanting and tree preservation during construction. He eventually sold his company and continued his career as a consultant (PHC/sales arborist/trainer).

Gene was a volunteer for the Texas Chapter of ISA in numerous capacities. He served on the ISAT Board on two separate occasions. He was chair of the education committee and served a three-year board term ending on the executive track as President of our Chapter. When the opportunity arose, he was hired by the Chapter to work with John Giedraitis, past Chapter Executive Director, to coordinate all of the Chapter’s educational events. Almost every metric (revenue, number of events, membership) increased about 30% during that time.

He has been on the board for the Texas Urban Forestry Council, Cross Timbers Urban Forestry Council and the USDA Forest Service Oak Wilt Advisory Committee. Gene was also appointed by the Arlington City Council and served six years on the city’s Parks and Recreation board. Outside the green industry, he served in various roles in Leadership Arlington for several years. In his application package, Gene made the following statement regarding his interest in applying for the position:

“The reason I am applying for this position is my passion for furthering the profession of arboriculture and my love of trees in general. Throughout my career I have freely given of my time and expertise to help others in the tree care industry. I do not need a “job”, I have been successful enough that I could continue to do what I have done until I retire. My goal is to help others



Megan Wood at the 2024 WTCW

Continued on page 18...

Continued from page 17

be successful in the tree care industry and by extension improve tree care in the state.”

Gene will not be working alone as our Executive Director. His efforts will be supported by those of Megan Wood, who, since 2022, has served as a Program Manager for Texas Chapter ISA with John. Her role in that capacity included membership for the Chapter, creating and managing CEUs for affiliate organizations and our Chapter events, assisting with credentialing, and event management. Prior to joining management with ISAT, Megan worked for several non-profit organizations in the Waco area, such as Big Brothers/Big Sisters (Regional Executive Director) and Habitat for Humanity (Director of Operations). Megan’s professional experiences have included grants acquisition and administration, business administration (legal compliance, land acquisitions, maintenance of insurance policies, oversight of vendor/subcontractor document compliance), information technology management, and office administration. All of these experiences have prepared her for her new role with Gene in their future management of ISAT. ■



Right: Gene Gehring on tour.

## Nominations for ISA Texas Board of Directors will open in May

By Rebecca Johnson, Chair Nominations/Elections Committee

The Board is responsible for the strategic visioning that leads the ISA Texas and ensures that members’ needs are being met. The Board includes 17 members, including: the executive committee comprising the Immediate Past President, the President, the President-elect, the Vice President, the Treasurer, and the Leadership Council representative, with the Editor having a non-voting role, as well as nine directors and the Credentialing representative. All board members are elected by the general membership; however, the President-elect and President are on the ballot unopposed. Serving on the Board requires diligence and commitment. Your effort will be rewarded with a sense of accomplishment and the satisfaction of working collaboratively to lead ISA Texas in a positive direction.

Any ISA Texas member in good standing can nominate someone (including themselves) as long as the nominee is also an ISA Texas member in good standing. The nominations committee will develop a ballot based on the needs of the Board and the qualifications of the applicants. When the Board approves the ballot, the nominations Chair will notify applicants whether they were placed on the ballot.

### Overview of Serving on the Board

The ISA Texas Board is a working board. Board members wear two hats – volunteer and director. As directors, the board members focus on strategic thinking rather than management and operations. They set the strategic goals for ISA Texas and direct the executive director and staff to implement the goals. As volunteers, they work alongside the executive director to fulfill the strategic goals, at times serving as adjunct staff.

Directors serve a three-year term, with the possibility of re-election. Executive committee members serve one-year terms.

Directors are expected to serve or chair a committee. The Education committee is chaired by the Vice President, the President Elect chairs the Conference committee, the President chairs the Executive committee, and the Past President chairs the Nominations and Awards committees. In addition to those committees, we have Tree Climbing Championship, Outreach, Membership, Exhibitors and Sponsors, Scholarships and Student Liaison, Digital and Social Media, and Research/TREE Fund committees.

### Attendance and Expectations

There are usually four face-to-face Board meetings per year: March, June, September (at the annual conference) and a two-day strategic retreat in early December. The June and September meetings are in Waco, the March and December meeting locations are chosen by the President. For folks who cannot attend the in-person meetings, we are able to arrange a virtual connection, but it is a poor substitute for being there.

Since the Board functions best with engaged directors who are prepared to discuss strategy and policy, it is imperative that directors attend and are actively engaged during face-to-face meetings. Directors are expected to become familiar with Board policies, the strategic plan, and the ISA Texas Bylaws. Directors are also expected to review relevant documents prior to meetings. The Board follows a strict attendance policy (which is detailed in the Board Director Code of Conduct) to ensure efficient functioning. Directors will be expected to occasionally travel on ISA Texas’s behalf, such as attending a workshop or a tabling event.

If you think you or someone you know would be a good fit for the board, contact Rebecca Johnson ([rebecca@arborholic.com](mailto:rebecca@arborholic.com)) or watch your TreEmail for the nomination form. ■

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## What's the Big IDEa?



**Hint: This is a Texas native.**

### Can You Identify this Texas Tree?

If you know this tree, look for the photo on our Facebook page and correctly identify it in the comment section under the photo, using the full scientific name and one or more common names. If you don't know it, check the page for an answer in a few days. The winner gets bragging rights and the chance to submit a tree to stump fellow arborists in the next issue.

## Last Issue's Tree ID



Last issue's winner:  
Courtney Blevins

Tree was: Cascade Falls Bald Cypress (*Taxodium distichum* 'Cascade Falls')

New challenge submitted by:  
Courtney Blevins