

33rd Annual Desert Horticulture Conference
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SPEAKER ABSTRACTS AND BIOS

PLANTS AND DESIGN

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Developing Wind and Storm Proof Tree Structures

Denice Britton, Consulting Arborist

Beginning with planting, landscapers can reduce the chances of tree failure when they pay attention to the basic details provided in this seminar. Developing a strong root system that will hold the tree up in strong winds without staking is possible, but it starts with good planting techniques that literally place the roots out into the soil. Pruning that encourages strong branch attachments coupled with appropriate branch end weight reduction can develop a more attractive and windproof tree. Denice will present images and discussion describing these techniques in detail.

Denice Britton has a bachelor's degree in Plant Pathology and a master's degree in Urban Forestry from UC Berkeley. She became co-owner of Britton Tree Services from 1984 to 2001, and the Urban Forest Manager for the City of Chico, CA from 2006 to 2013. Denice was instrumental in establishing the Certification Program for Arborists in the Western Chapter ISA. She was subsequently elected President of the Chapter in 1990 and was President of the American Society of Consulting Arborists in 1998.

Denice has been a successful consultant for 40 years, specializing in tree management programs, appraisal, and risk assessment. She retired in 2022 as President of California Tree and Landscape Consulting, Inc., known as CalTLC, a consulting firm serving northern California. Denice is honored to have received Honorary Life Membership in ISA in 2002 and in ASCA in 2020.

The Heat-Proof Desert Garden

Noelle Johnson, AZ Plant Lady

Hotter summers and record-breaking temperatures have created a startling reality for the desert garden - many so-called "heat tolerant" plants struggled to survive the extreme heat of the summers of 2020 and 2023. Even the majestic saguaros weren't immune. Since hotter summers are likely in our future, we need to employ strategies to help moderate those effects to create heat-resilient gardens. In this presentation, Noelle Johnson shares actions that you can take right now to reduce summer stress along with her list of "heat-proof" plants that can take extreme heat compiled from the personal observations of hundreds of people.

Noelle Johnson is an author, horticulturist, and landscape consultant. She has a bachelor's degree in plant biology with a concentration in urban horticulture from Arizona State University. Noelle is the author of the book, *Dry Climate Gardening: Growing Beautiful, Sustainable Gardens in Low-Water Conditions*, and also is a columnist for *Phoenix Home & Garden Magazine*. Popularly known as "AZ Plant Lady" Noelle serves on the innovation board of Arizona Wholesale Growers, and works alongside with Water Use It Wisely. Her passion

and goal is to teach and inspire desert-dwellers with the tools to grow and maintain beautiful gardens that thrive in a hot, dry climate.

Underused and Newly Introduced Plants

Panel: Emilie Augustine, Desert Tree Farm; Berni Jilka, Nighthawk Natives Nursery; Wendy Proud, Mountain States Wholesale Growers; Nick Shipley, Civano Growers

Panel speakers will discuss underused and newly introduced plants suitable for the Sonoran desert and relevant to commercial, residential, expansive and small-sized landscapes.

Emilie Augustine is a sixth-generation farmer who has grown up with agriculture and horticulture. Educated at the University of Arizona and Arizona State University, she received her B.S. in Kinesiology with a pre-med emphasis. She managed the propagation department at Desert Tree Farm for 18 years, taking 5 years off to raise her two boys. She now works in sales/marketing and administration, looking forward to the future endeavors of Desert Tree Farm.

Bernadette (Berni) Jilka, developed a passion for native plants in her youth, exploring native prairies and wetlands in central Kansas. She received a horticulture degree at Kansas State University, worked in the plant nursery trade, and worked at The Land Institute, researching the prairie ecosystem as an agricultural model. After moving to Tucson, Berni was involved in Sonoran Desert habitat restoration and seed collecting with her husband Gary Maskarinec of Wildlands Restoration. She began a backyard nursery in 1992, which has evolved into a wholesale native plant nursery in Avra Valley.

Wendy Proud has worked in the nursery industry for over 35 years. She earned an ornamental horticulture degree from Cal Poly, Pomona, worked at Monrovia as a sales rep, plant manager and grower. She created stunning container plantings at Southern California's famed Roger's Gardens, where she launched a monthly seminar series and hosted a weekly cable tv show. Wendy's business experience includes ownership of the landscape design and installation company Proud Murphy and Proud Plant Sales. Wendy has given presentations to the nursery trade, professional groups and garden clubs, with particular emphasis on the "less thirsty" plants from desert and Mediterranean regions, as well as California natives. She is a past president of the Los Angeles chapter of the California Association of Nurseries and Garden Centers.

Nick Shipley co-owns Civano Growers in Tucson, Arizona, and has been the Chief Operations and Grow Officer since 2014. Born in Nova Scotia, Nick started working for his father in ornamental greenhouses at the age of 11. When Nick and his family founded Civano Growers in 1998, he was the Reclamation Manager overseeing the salvage of native trees and cacti from land slated for development. Nick has patented over 25 arid-adapted landscape plants, and introduced numerous hardy cultivars. He has been an ISA-certified Arborist since 1998. Nick currently serves on The City of Tucson Landscape Advisory Committee and the Desert Horticulture Conference Committee. Nick is dedicated to improving the Southwest urban landscape by introducing beautiful, pollinator-friendly, resilient plants.

Plant Selection for Green Stormwater Infrastructure Landscapes

Nick Shipley, Civano Growers

Green Storm Water infrastructure (GSI), also known as Water Harvesting, has become increasingly popular in commercial and residential dry climate landscapes throughout the Southwestern region of the United States. If you're interested in learning more about GSI, be sure to check out this informative presentation! The discussion will focus on appropriate plant selection and placement in GSI landscapes. Don't miss out on this opportunity to expand your knowledge and enhance your landscape design and plant selection skills.

Eye-Catching Plants for Curb Appeal

Noelle Johnson, AZ Plant Lady

Don't settle for a boring landscape filled with round green 'blobs.' It's easy to add beauty and drama to the garden with bold plants. Learn how to select and arrange plants for maximum impact that will bring dramatic interest to your outdoor space and bring welcome color, shape, and texture. Noelle will share her favorite design tips that are guaranteed to catch your eye and help you choose plants that make a visual statement in the landscape. She will also show you how to *avoid* the biggest mistake people make that leads to boring landscapes.

Landscaping for the Future: Drawing Ideas from Ecological Restoration Practices

Carianne Funicelli, Strategic Habitats

"But that's the way we've always done it" - nope. It's time to innovate our approaches to urban landscapes! As the climate continues to change, it is increasingly useful to look to tried and true concepts and methods from the field of restoration ecology to increase success and resiliency in our urban landscapes. This practical presentation will explore ways to work with project goals and constraints to design and install landscapes that will look good now and into the future.

Carianne Funicelli, after receiving a Botany degree, moved to Tucson in 1998, specifically because she loves the native plants of the Sonoran Desert. She is a well-known advocate for native plant conservation and restoration and has conducted many projects throughout the southwest region, both in wild areas and urban landscapes. Carianne has served as the President of the Society for Ecological Restoration, SW Chapter, on the Tucson Chapter of the Arizona Native Plant Society, and the City of Tucson's Landscape Advisory Committee. She has worked in the government, business, and non-profit sectors over the past 20 years, and recently has started her own consulting firm, Strategic Habitats, which allows her to help clients bring nature to their yards with strategic native plant choices.

PLANT HEALTH

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Invasive Plant Species and their Management in Urban Landscapes

Tony Figueroa, Tucson Audubon Society and John Scheuring, Arizona Native Plant Society

Many noxious and weedy species are so common in urban areas they have become “part of the landscape” and also (often unrecognized) costly maintenance pests. This presentation focuses on African Sumac, Mexican Palo Verde, Fountaingrass, Stinknet, and African Daisies. All of these species have been planted in urban landscapes but have spread within neighborhoods and beyond. The presenters will state the issues and control measures.

Tony Figueroa, Invasive Plant Program Senior Manager, born and raised in Tucson, AZ. Graduated from the University of Arizona in 2018 with a BS in Natural Resources, Wildlife Conservation Management. He recognized that the best way he could help the wildlife that he loves is to protect and conserve the native vegetation. One of the greatest threats to the Sonoran Desert's amazing flora and fauna is the invasion of non-native species. After interning at Saguaro National Park and working as a seasonal employee at the Grand Canyon, he wanted to do more than just protect those special places. Working at a non-profit allows him to engage with the community he loves and grew up in and foster connections with many different agencies, organizations, and private landowners to increase awareness of non-native species.

John Scheuring is the state conservation chairman of the Arizona Native Plant Society. Since 2007 he has led AZNPS volunteer efforts on public lands to control invasive plants while doing native plant restoration. Major native plant restorations have been achieved on Ironwood Forest, Sentinel Peak, and riparian canyons in the Catalinas. He has worked with numerous Tucson HOAs to identify and control invasive plants. Starting in 2015, he led the initial efforts in Arizona to raise awareness of Stinknet in the Phoenix and Tucson areas.

Mite Issues on Landscape Plants

Dr. Shaku Nair, University of Arizona Pest Management Center

Mites are important pests of landscape plants. This session will provide an overview of mite anatomy and biology, and the commonly encountered species of phytophagous (plant-feeding) mites in Arizona landscapes. Symptoms of mite damage are often misidentified and attributed to insects, pathogens or abiotic factors. Mite behavior and their role in complex plant diseases and disorders, as well as strategies for their management will also be discussed.

Dr. Shaku Nair is an entomologist by passion and profession, and a strong advocate of integrated pest management (IPM) to manage pests in any situation. She has expertise in IPM in natural and structural environments. Her primary responsibilities include facilitating IPM implementation and adoption in different community environments in Arizona such as schools, housing, turf and landscape, recreational areas and medical facilities and educating about IPM. Shaku currently is an Associate in Extension, Community IPM at the Arizona Pest Management Center, University of Arizona.

Shrub Performance under Minimum Irrigation

Dr. Ursula Schuch, UA School of Plant Sciences

This presentation will discuss the results of a 2023 irrigation study where 15 taxa of shrubs grown in the low desert of Arizona were irrigated with low, medium or high frequency. The species used in this study differed in growth, flowering, and foliage quality and showed different tolerance levels to the low irrigation treatments. Results from field days where people rated the aesthetic appeal of these plants will be shared. The audience will learn about plants suitable for low water use landscapes and those thriving with medium irrigation.

Dr. Ursula Schuch is a University of Arizona Extension Specialist and Professor with responsibility in environmental horticulture. She presents seminars and workshops for professionals in the green industry and conducts research to address relevant issues in horticulture production practices and landscape management. Her research interests include irrigation requirements of trees and shrubs, abiotic stress affecting landscape and other plants, and minimizing inputs in nursery production and landscape management.

Introduction to Wilt Diseases

Dr. Alex Hu, UA School of Plant Sciences

Wilt diseases disrupt water flow in the xylem, thus causing leaves to wilt. These diseases result from pathogen activity in the vascular vessels. General wilt symptoms can have many causes, including wilt disease. Root diseases and cankers often cause crown wilting. This talk will introduce several common wilt diseases of landscape trees in Arizona's low deserts. The focus will be on how to recognize the signs and symptoms, the disease cycle, and management options.

Dr. Alex Hu is an associate professor and extension plant pathologist in the School of Plant Sciences at the University of Arizona. He is stationed on the main campus in Tucson and is the leader of the UA Extension Plant

Pathology programs for field crops and fruit and nut crops. He received his Ph.D. in plant pathology from Virginia Tech University. Alex manages cooperative efforts to provide disease diagnostic support and develop disease management strategies and information that improve crop production efficiency.

Correct Me If I'm Wrong: Lesson for Pesticide Handlers

Jennifer Weber, University of Arizona Pesticide Safety Education Program

Jennifer will use photos, stories, and more to provide pesticide safety information during this interactive session. She will cover a variety of topics, such as PPE selection and use; safe measuring and mixing practices; protecting the environment during application; and regulation updates impacting pesticide handlers and the pest management products they use.

Jennifer Weber is the Coordinator of the University of Arizona Cooperative Extension Pesticide Safety Education Program, a statewide program serving the needs of both the agricultural and structural pest control industries. Prior to this position, she worked for the Arizona Department of Agriculture's, Ag Consultation and Training Program and the UC Davis, Statewide IPM Project's Pesticide Safety Education Program. Through these opportunities, she gained over 25 years of experience providing safety information in English and Spanish to individuals who work directly with pesticides and in areas where pesticides are applied. Ms. Weber graduated from California Polytechnic State University in San Luis Obispo with a bachelor's degree in dairy science. Following graduation, she spent two years working on a livestock health program in Ecuador as a Peace Corps volunteer. She later earned a master's degree in Multicultural and Bilingual Education from California State University, Sacramento.

Witches Broom on Parkinsonia Species in Arizona Landscapes

Dr. Ursula Schuch, UA School of Plant Sciences

Witches broom is a virus disease, causing dense clusters of branches that require repeated pruning, or that can fail, leading to structurally compromised trees. The disease is widely established in *Parkinsonia florida*, blue palo verde trees in the landscapes of the lower desert. Samples from other Parkinsonia species and hybrids were collected and analyzed for the presence or absence of the virus causing the disease. This presentation will discuss the presence of the virus in different Parkinsonia species, whether infected trees show disease symptoms, and the potential for seeds to transmit the disease.

WATER / URBAN LANDSCAPES

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Troubleshooting and Testing your Irrigation System for Optimal Performance

Dominic Rullo, Town of Marana

The life of irrigation systems is determined by the three components of design, construction, and maintenance. This presentation will discuss general irrigation system trouble shooting procedures and how to test systems for optimal performance. Aspects of design and construction that are important for optimal performance will be covered.

Dominic Rullo has been working in Parks Maintenance for 16 years. He truly enjoys creating beautiful landscape through irrigation but more importantly understanding the importance of a civil servant.

Retrofitting Irrigation Systems to Meet the Needs of Trees and Other Plants

Doug Donahue, Ewing Irrigation

Turf conversions are becoming more common. Many municipalities are offering rebates for turf conversions. The problem is that many turf conversions are taking place without much thought to irrigation. As a result, the health of the trees and plants is compromised. In the presentation, irrigation techniques for turf conversion projects will be discussed, including products to facilitate proper irrigation.

Doug Donahue is a 45+ year veteran of the Green Industry, most of that time having been spent in irrigation. Doug is currently an Account Manager for Ewing Outdoor Supply in Phoenix. His accounts include large construction and maintenance contractors and municipalities. Doug is a frequent speaker and enjoys giving back to the industry he loves by sharing his expertise.

Preserving the Urban Forest: Best Practices for Tree Conservation during Artificial Turf Installation

Anne LeSenne, UA Pinal County Cooperative Extension

Replacing traditional turf with artificial turf offers potential water savings but can threaten the health of established trees. This presentation explores best management practices (BMPs) to minimize negative impacts on trees during the removal and installation process. Root zone protection strategies such as trenching, directional boring, and root pruning will be evaluated for their effectiveness in safeguarding vital tree roots. Soil health considerations include maintaining soil moisture and structure during construction and the importance of backfilling with appropriate materials. Post-installation care includes strategies for monitoring tree health and mitigating potential issues like compaction and irrigation changes. By implementing these BMPs, landscape professionals can reduce tree stress and mortality, ensuring a more sustainable approach to urban water conservation.

Anne LeSenne is the Assistant Horticulture Extension Agent for Pinal County Cooperative Extension. She has a master's degree in horticulture from Texas Tech and a bachelor's degree in horticulture from BYU Idaho. Anne became a certified arborist with ISA in 2006 and earned Municipal Specialist and TRAQ certifications. As Board-Certified Master Arborist, she specialized in tree preservation during and after construction, prepared numerous tree mitigation reports, and has been an Expert witness in tree litigation cases. She taught horticulture classes and established the certification of a Tree Campus USA. Anne is a board member on the Arizona Community Tree Council on the advisory board of Trees Matter.

Improving Soils through Green Stormwater Infrastructure

Dr. Vanessa Buzzard, UA Natural Resources, Grant McCormick, UA Environmental Science, and Dr. Bo Yang, UA Landscape Architecture and Planning

Green stormwater infrastructure is a sustainable and cost-effective approach with the goals of mitigating floods, restoring the natural hydrological cycle, and reducing urban heat island effect, and reliance on potable water sources for irrigation in urban landscapes. However, there can be a disconnect between these goals and design practices. We will present data collected from the University of Arizona Campus Living Lab, which consists of a series of sites on campus designed with environmental monitoring that assess performance. We will also share how these, and other sites may support improved soil function.

Dr. Vanessa Buzzard is a research scientist in the UA School of Natural Resources and the Environment. Dr. Buzzard's research has focused on understanding drivers of biodiversity and ecosystem function in response to climate and anthropogenic disturbances in natural and built environments. Her research aims to quantify shifts in physical, chemical, and biological soil health indicators in response to green stormwater infrastructure practices to understand restoration of ecosystem functions and co-benefits generated by stormwater capture and reuse. She is also the founder of the University of Arizona's Campus Living Lab in Green Stormwater Infrastructure, an initiative to bridge understanding across disciplines studying the performance green stormwater infrastructure in Tucson AZ.

Grant McCormick is UA Director of Enterprise GIS, a service of the Department of Planning, Design & Construction. His work at UA spans over 25 years, including integration of storm water management practices with water harvesting techniques as part of transforming campus landscapes into green infrastructure. He has contributed to related projects, programs, and initiatives throughout the Tucson region. As an Adjunct Professor for the Department of Environmental Science, he currently teaches a Water Harvesting course and a Green Infrastructure course. His education includes a Masters' Degree in Landscape Architecture from the University of Arizona and a Bachelors of Agriculture emphasizing Landscape Contracting from the University of Oklahoma.

Dr. Bo Yang is a Professor in the School of Landscape Architecture and Planning at the University of Arizona. His research interests include urban green infrastructure, landscape performance assessment, and environmental planning and technology. He has authored/co-authored three books on these topics, including *"Evaluating Landscape Performance: A Guidebook for Metrics and Methods Selection."* Dr. Yang is a Fellow of the American Society of Landscape Architects.

Tucson Residential Rain Water Harvesting Rebates Revamp

Irene Ogata and Valeria Galindo, City of Tucson

Rainwater and stormwater harvesting systems are part of a community's climate resilience and adaptation equation in applying nature-based solutions addressing urban heat, tree canopy and maintaining healthy urban ecosystems. Tucson Water recently revamped its rainwater harvesting rebate program to encourage installation of green stormwater infrastructure (passive rainwater harvesting) and provide higher levels of customer education and engagement. The process yielded important insights about how stormwater can be measured and valued, the role of RWH and GSI in water conservation, and what kind of customer engagement is needed to improve outcomes.

Irene Ogata, Urban Landscape Manager, received her degrees from the University of Arizona's Colleges of (1) Nursing, (2) Social and Behavioral Science, (3) Agriculture and (4) Architecture, Planning and Landscape Architecture. She is a professional landscape architect, and is certified as an International Society of Arborist and a Public Manager. As the City of Tucson's first Urban Landscape Manager, she worked across departments and multi-jurisdictions and with the Landscape Advisory Committee, to develop Tucson's first Urban Landscape Framework addressing urban heat island, tree canopy discrepancies and involvement in the region's water catchment-basin discussions (i.e., green infrastructure). As a part of Tucson Water's Conservation team, Irene was involved in the development of the residential scale stormwater harvesting program, community garden water rate change and has been overseeing the low-income rainwater harvesting/graywater/clothes washer rebate program. She also assisted in the revamping of the residential rainwater harvesting program.

Valeria Galindo, Public Information Specialist, has a BS from the University of Arizona in Sustainable Built Environments with a focus on water efficiency in buildings and landscapes. She began her career as a Community Outreach Assistant with University of Arizona's Cooperative Extension's sustainable landscapes education program, Pima Smartscape. She assisted in the creation of a Spanish version of the Smartscape

program that targets small landscape maintenance firms heavily staffed with Spanish speakers. Amid evolving climate change and water supply challenges, Valeria takes pride in supporting one of the driest cities of the southwest in becoming more water efficient. As a water conservation specialist for the Tucson Water Department, she helps advance conservation efforts through improvement of conservation programming, rebate program expansion, and equitable community outreach.

Improving Tree Establishment Success

Dr. Bo Yang, UA Landscape Architecture and Planning , Dr. Vanessa Buzzard, UA Natural Resources, and Grant McCormick, UA Environmental Science

Current efforts to build climate-resilient cities include adopting nature-based solutions such as tree planting to provide shade and reduce impacts of urban heat islands. However, current landscape irrigation accounts for nearly 30% of residential water consumption nationwide. Arid cities continue to face increased water scarcity and drought, which require innovative strategies to support the additional water demands of newly planted trees. In this presentation, we will share results from a controlled experiment assessing different water-saving techniques for four commonly used native and drought-adapted trees: Desert Willow, Joan Lionetti Oak, Ironwood, and Canyon Hackberry during establishment.