PLANTS AND DESIGN

8:00 – 9:00 a.m.  Tree Care for Birds
Andy Trotter, West Coast Arborists, California
Andy will review the new voluntary standards for protecting birds and wildlife while providing tree care. He will discuss the project’s history, why it is important to our industry and how it became a program of the Western Chapter ISA (WCISA).

Andy Trotter has been with West Coast Arborists, Inc. since 1982. As Field Operations Manager, he supervises all of the field operations and oversees the company’s safety, training, and nursery and wood recycling facility. He has been an industry leader in many key projects including United Voices for Healthier Communities Great Clean Air Planting Project, Toolkit for Developing Urban Forest Management Plans and the Western Chapter ISA’s annual “Workday” fundraiser. He currently chairs the chapters committee for the Tree Care for Birds and Wildlife program.

9:10 – 10:10 a.m.  Moonlight Gardening in the Desert
Jason Wiley, Arizona – Arizona Sonora Desert Museum
During hot summers, many desert dwellers spend the majority of their time in their gardens in early mornings and evenings. So why not create a garden that is designed to experience specifically at night? In this presentation professional horticulturist and designer, Jason Wiley will discuss how to create a Moonlight Garden and his plant selection technique for creating a magical night experience in the southwest

Jason Wiley grew up on a sod farm cultivating his career in horticulture; and his mother being an interior decorator led his passion for conceptual design. He has been a professional horticulturist for fifteen years and has worked in public gardens for eleven years including the Phoenix Zoo and the Anheuser – Busch in Fort Collins, CO. He currently is employed at the Arizona – Sonora Desert Museum where he curates the Cactus Garden, Agave Garden, Boojum Hill, and the Tropical Deciduous Forest. He received his Bachelor’s Degree in Urban Horticulture from Arizona State University and studied Landscape Architecture at Colorado State University. He specializes in creating contemporary gardens with a focus on architectural plants including cacti, agaves, other succulents, and palms. His recent purchase of his first home has inspired him to create a Desert Moonlight Garden and he is looking forward to share the idea of this themed garden with others.

10:25 – 11:25 a.m.  Underused and New Plant Introductions – Grower Panel
Nick Shipley – Civano Growers, Nick Staddon – Mountain States Wholesale Nursery, Jane Evans – Plants for the Southwest, John Carreon – Sunrise Hills Landscape and Nursery
Panel members will cover trees, shrubs, groundcovers, and succulents that deserve more attention in our landscapes.

12:15 – 1:15 p.m.  Mosquito Repelling Landscaping
Dr. Jacqueline Soule, Gardening with Soule
The U.S. Center for Disease Control lists Arizona as second in the nation for deaths from mosquito borne diseases. The mosquito species responsible can survive with very little standing water, indeed, some can survive in moist soils. Homeowners are justifiably concerned about mosquitoes, but a little education will show them that the insects can be discouraged - even from the lushest landscapes - with proper planting and care. Dr. Soule will discuss steps to take to reduce mosquitoes in yards, including planting mosquito repellent plants. The presentation includes tips on how to have a water garden that will not be a breeding ground for mosquitoes, while avoiding the use of insecticidal compounds.

**Dr. Jacqueline Soule** has a PhD from University of Texas, Masters from Michigan State University, and started at the University of Arizona with a BS in Plant Sciences with Honors, and a BS in Ecology, Evolutionary Biology with Honors. She is an award-winning garden writer with over 8000 articles and weekly and monthly gardening columns in newspapers, magazines, and green industry publications. She offers numerous workshops and presentations for both gardeners and industry professionals. Jacqueline has 14 published books, mostly focusing on growing plants successfully in the unique Southwestern climate. She currently serves as Chair of the Advisory Board for the Desert Legume Program.

1:25 – 2:25 p.m. **Amazing Trees from Around the World**
Jackie Lyle, Civano Growers
Take a trip outside of the beautiful Sonoran Desert to discover odd, intriguing, and amazing trees from around the world. Discussion topics include tree biology, plant health, pest management, and ethnobotanical research associated with each tree species. From Arizona to Africa, Europe to Asia, these trees are sure to inspire!

**Jackie Lyle** is an ISA Certified Arborist, Chairwoman of the City of Tucson Landscape Advisory Committee, and a Pima County Master Gardener. She is well-versed in urban and residential horticulture for the Southwest. In her free time, Jackie volunteers as a docent at the University of Arizona Campus Arboretum. She also enjoys visiting famous trees around the world.

2:35 – 3:35 p.m. **Place Making in the Sonoran Desert**
Caryl Clement, CJ Clement Design
Place based design is a discovery of the magical balance between intuition and reason, playfulness and formality, concept and detail, form and function, program and budget, community and client. Rooted in the principles of site analysis, sustainability, cultural and economic aspects, iconography and the site’s intrinsic DNA, a dialogue occurs between analytical thinking and creative intuition. One is continually informing the other in a reiterative process resulting in distinctive design solutions. This design process, the art and science of place making, will be presented and illustrated by selected built projects.

**Caryl J. Clement** received her Master’s degree in Landscape Architecture from the University of Arizona, a Bachelor of Science in Agriculture and is a Public Artist with the Arts Foundation for Tucson and Southern Arizona. Her landscape architectural practice has provided design, project management and construction administration experiences encompassing public transportation improvements, public facility improvements, Caribbean resort design, and private residential design. As a Horticulturist with the Environmental Research Laboratory, her work ranged from urban agriculture to the development of prototypic food production systems for Disney Enterprises. As a public artist, the creation of site specific artwork profoundly impacts her design approach to place making in the Sonoran Desert.
PLANT HEALTH

8:00 – 9:00 a.m.  Controlling Buffelgrass and other Invasive Plants in Urban Landscapes  
Dr. Bill McCloskey, UA Plants Sciences
Buffelgrass, Fountaingrass and other invasive species are persistent invaders of urban landscapes and threaten the survival of the Sonoran Desert’s native flora. Managing these invasive and weedy species through an understanding of their biology, life cycles, mechanism of spread, persistence in the soil seed bank, and available weed control tactics will be the focus of the presentation. Environmental conditions and the physiological processes of invasive species also impact the efficacy of control tactics so these factors will also be discussed.

Dr. Bill McCloskey is a University of Arizona Cooperative Extension Weed Specialist in the School of Plant Sciences in the Division of Agriculture, Life and Veterinary Sciences, and Cooperative Extension. His Extension programs and supporting research over almost three decades have focused on economically managing weeds in Arizona’s irrigated crops using ecological principles and a variety of tactics. They include precision guidance technology (GPS), optical and electronic sensor technology, computerized application technology, and mechanical cultivation in addition to herbicides in crops including alfalfa, barley, lemons and oranges, chile peppers, corn, cotton, wheat, and tree nuts (pecans and pistachios). Dr. McCloskey has also developed management tactics for the weeds associated with new crops such as guayule and has worked on managing invasive species such as buffelgrass, Russian knapweed and saltcedar in rangeland and natural landscapes. Bill presents numerous lectures and workshops on weed management to audiences involved in Southwestern crop production and weed management in urban, range and wild landscapes in support of Cooperative Extension educational programs.

9:10 – 10:10 a.m.  Insect Pests of Palm Trees  
Dr. John Kabashima, University of California Coop. Extension
Palms are important plants in the landscape and are widely used for their tropical appearance and versatility as an accent or background plant in pots, planters or in the ground. There are a wide variety of insect pests attacking palms ranging from insects that cause minor damage to recent invasive beetles that threaten palms in the southwest region of the United States. Integrated pest management (IPM) strategies usually provide satisfactory control but newly introduced exotic species often require a regulatory response. However, in the absence of a quarantine, rapid response and detection by the horticulture industry and palm owners will require a more robust IPM approach.

Dr. John Kabashima is a University of California Cooperative Extension Advisor, Emeritus and a member of the Disneyland Horticulture Team in Anaheim, California. Dr. Kabashima received a Ph.D. in Entomology and a M.S. from the University of California at Riverside. He presents seminars and workshops for landscape, nursery, arboriculture and pest control advisor professionals for the California Agricultural Pest Control Advisors Association, WC ISA, and various University, agency and industry conferences. He is currently on the California Invasive Species Advisory Committees Invasive Shot-Hole Borer Action Plan Executive Planning Committee and on the Multi State Palm Summit Planning Committee funded by the USDA Farm Bill.

10:25 – 11:25 a.m.  Diseases and Abiotic Problems of Citrus  
Dr. Alex Hu, UA Plant Sciences
Citrus is one of the state’s iconic 5 Cs: Citrus, Cotton, Climate, Cattle and Copper. The sun and soil are perfect for growing oranges, tangerines, lemons and grapefruit. However, Arizona’s beautiful backyard citrus and the citrus industry are not without challenges. This session will discuss major fungal and bacterial diseases that could affect Arizona citrus cultivation including Phytophthora foot rot, brown wood rot, Hendersonula branch wilt, Alternaria fruit rot, sweet orange scab, and citrus greening. Focus will be on disease diagnosis and management strategies.

**Dr. Alex Hu** is a University of Arizona Cooperative Extension Plant Pathologist in the School of Plant Sciences. He obtained his Ph.D. degree in plant pathology from Virginia Tech. His extension programs and supporting research have focused on economically managing emerging and re-emerging diseases that matter to Arizona stakeholders. Alex presents numerous lectures and workshops on disease diagnosis and management to audiences involved in Arizona crop production and disease management in agricultural production and urban and wild landscapes in support of Cooperative Extension educational programs.

**12:15 – 1:15 p.m. Tree Decay – the Story on Rots**  
Nicholas Wilhelmi, U.S. Forestry Service

Decay fungi are essential to healthy functioning ecosystems. These fungi recycle nutrients, provide valuable wildlife habitat but can also present challenging management issues. This talk will outline the basics of decay fungi identification, their role in the ecosystem, as well as some challenges they may present to land managers.

**Nicholas Wilhelmi** received a BS in Forestry from the University of Missouri and a MS in Forest Pathology from Oregon State University. Nicholas has served as the Plant Pathologist for Forest Health Protection Arizona Zone for two years, providing federal land managers technical assistance in the management of forest pathogens. Nicholas is also the hazard tree program coordinator for the Arizona Zone providing assistance in the identification and mitigation of hazard tree issues.

**1:25 – 2:25 p.m. Borers Threatening our Landscape Trees**  
Dr. John Kabashima, University of California Coop. Extension

Boring insects are commonly associated with stressed, dead, or dying trees which are often a product of poor urban landscape design, planting, and maintenance practices that predispose trees to borers. However, an increasing number of exotic and invasive species are attacking trees in the landscape that are not stressed or dying. Successfully dealing with both types of borers requires an integrated approach that depends on accurate identification, and constant monitoring for pests before they become a major problem.

**2:35 – 3:35 p.m. Control of Weeds in Non-Turf Landscapes**  
Dr. Dave Kopec, UA Plant Sciences

Desert landscapes are often designed for low maintenance, implementing Xeriscape plant selection and irrigation, or in the purest sense, include only the most hardy drought-adapted trees and shrubs which rely only on rainfall. Even with twelve inches of annual rainfall, desert landscapes are susceptible to infestation of grassy and broadleaf weeds. Proper management of weeds in non-turf landscapes includes knowledge of (a) the proper identification of the weed (b) the life cycle of the weed (winter or summer annual, or seasonally dormant perennial) (c) the plant group (monocot or eudicot) and (d) the
host background of long lived/maintained desirable plants in the landscape. Knowledge of these four principles allows for the proper management of weeds by either preventing establishment or removing them after they are visibly present. These principles when followed correctly, often minimize the re-establishment of weeds and provide higher levels of weed control. Examples will be given which demonstrate the use of proper control measures for different kinds of annual and perennial weed species that are common in landscapes featuring monocot and dicot landscape plants. Plant protection products that are successfully used in such cases will be included.

**Dr. Dave Kopec** served as the Extension Specialist in Turfgrass Science and Management at the University of Arizona from 1985 to 2018. He conducted applied research in turfgrass management which included weed control, use of plant growth regulators, winter overseed trials, overseed preparation techniques, the use of herbicides for spring transition, and germplasm evaluation of cool and warm season turfs. He instructed Golf and Sport Turf Management, and presented at many regional and national conferences on applied management topics on soils, water and specialized turf management practices developed for semi-arid environments. He has been a GCSA instructor for over 25 years and instructs seminars in irrigation scheduling, irrigation water quality, bermudagrass greens management, and low maintenance/native grasses for golf courses. He has published research articles for GCSA and the USGA Green Section Record. Some of his current interests include Poa annua weed control, turfgrass variety testing, and evaluating native grasses for use as low maintenance turfs.

**URBAN LANDSCAPES**

**8:00 – 9:00 a.m.**  **How Soil Physical Structure Affects Plant Growth**  
Dr. Jim Walworth, UA Soil, Water and Environmental Sciences  
In addition to supplying nutrients and water, soil provides a physical environment for roots to grow and live in. Soil structure or architecture should be open, with large spaces (pores) that are alternately filled with air or water, and through which roots can penetrate. Large pores allow water flow within and through the soil, and they drain rapidly to provide oxygen to roots. Soil structure, the arrangement of soil particles, is a manageable soil property. We will explore factors that influence soil structure, and appropriate soil management options.

**Dr. Jim Walworth** is a Professor of Soil Science and an Extension Specialist in the Department of Soil Water, and Environmental Science at the University of Arizona, where he has been employed since 1998. He received BS and MS degrees in Soil Science from the University of Wisconsin and a PhD in Agronomy from the University of Georgia, and has more than thirty years of experience working with crops and soils in the midwestern, northeastern, and southeastern US, in addition to the deserts of the southwest. He also has extensive experience with soils in the far North (Alaska) and far South (sub-Antarctic Australia). Dr. Walworth specializes in the behavior and management of soil nutrients, salts, and water. A major focus of his research and extension programs is desert tree nut production. He currently conducts research on salinity tolerance, zinc management, specific nutrient (nickel, nitrogen, phosphorus, zinc) demands, and water use in Arizona crop plants.

**9:10 – 10:10 a.m.**  **Successful Salvage of Cactus and other Desert Plants**  
Jessie Byrd, Pima County Native Plant Nursery  
Part of Pima County's award-winning Sonoran Desert Conservation Plan from 1999 included the creation of a Native Plant Nursery to help balance habitat loss due to urban development. Today, the Native
Plant Nursery is a 2-acre facility maintaining over 20,000 native plants representing 230 Sonoran Desert species, all destined for restoration projects and other public spaces. Nursery inventory also includes mature plants salvaged from areas being developed, which helps to preserve local genetics and habitat resources while keeping plants out of the landfill. While many of the plant species are easy to salvage and re-establish, some are much more challenging! Learn how the Native Plant Nursery is leading the effort to protect native species in the urban fabric of Tucson, Arizona, putting the desert back where it belongs.

Jessie Byrd is the Native Plant Nursery Manager for Pima County Natural Resources, Parks and Recreation, which specializes in growing and salvaging native plant species for public projects. Jessie believes that using native plants in urban landscapes can help encourage biodiversity while also significantly reducing long-term maintenance inputs. She earned a Master of Landscape Architecture from the University of Arizona and a BA in Biology from Bryn Mawr College. She is the president of the Tucson Chapter of the Arizona Native Plant Society.

10:25 – 11:25 a.m.  How to Avoid Landscape Dangers – Venomous Creatures  
Laura Morehouse, UA AZ Poison and Drug Information Center

In this session, participants will identify the venomous creatures of the Arizona desert, from rattlesnakes to Gila monsters. Participants will learn animal behavior, bite and sting prevention, and first aid in case of envenomation.

Laura Morehouse is a certified health education specialist with interest in curriculum development, program design, and evaluation. She holds a Master in Public Health degree with an emphasis in health behavior and health promotion from the University of Arizona. Prior to working with the APDIC, she was involved in state nutrition program evaluation and health education curriculum development for youth. As the educator for the poison center, she is available for presentations on poisoning prevention, venomous desert creatures, elder adult concerns, and as a resource for other toxic hazard concerns. Additionally, she is available for “Train the Presenter” programs catered towards healthcare professionals, community organizations, and adults who want to learn how to educate others about poison prevention.

WATER

12:15 – 1:15 p.m.  Drip Irrigation  
Herb Hofmann, Rain Bird Corp.

Drip irrigation will review the basics and cover newer products used in drip applications including root watering systems, and surface and subsurface dripline relevant for urban landscapes. The presentation qualifies for LACES and IA continuing education credits.

Herb Hofmann moved to Arizona at the age of 3 and eventually graduated from Arizona State University with a degree in Electrical Engineering. He spent the first part of his career in industrial control system automation. For the last 15 years he has worked in golf and turf irrigation, the majority of that time with Rain Bird. He presently supports Landscape Architects and Public Agencies in Arizona with an emphasis on central control and pump stations.
1:25 – 2:25 p.m.  **Soil Surfactants and Wetting Agents**  
Ken Mauser, Aquatrols  

What is the role of these products in IPM’s, BMP’s and Efficiency Enhancing Methods and Processes? We use surfactants in many ways in the horticultural industry. Many of the products used already have a surfactant in them to improve coverage or distribution that leads to better control and results. This presentation will cover the why, what and how of soil surfactants. The horticultural industry needs to utilize this line of products to a greater extent to improve the effectiveness and efficiency of all soil/media applied inputs, from fertilizers to pesticides.

*Ken Mauser* is the Southwestern Territory Agronomist for Aquatrols Corporation of America. He has been with Aquatrols for over 27 years and has been an Agronomist for over 40 years since earning his degree at Fresno State University in 1974. His career has included 10 years in the agricultural industry and the last 34 years in the Turf, Landscape, Sports Turf and Nursery/Greenhouse industries. His territory includes California, Arizona and Nevada. Ken lives in Henderson, Nevada.

2:35 – 3:35 p.m.  **Wi-Fi Based Irrigation Controllers**  
James Harris, Rain Bird Corp.

The Internet of Things has changed irrigation controllers in a big way. Gone are the days of one large dial with pins or a bunch of sliders. There are lots of Wi-Fi connected irrigation controllers available in the market today with various features. Learn about the top selling versions, what their benefits are, how they can save water, and what is required for set-up.

*James Harris*, is a product manager at Rain Bird Corporation and holds a Master’s in Business degree from the University of Arizona. He has worked closely with engineering, manufacturing, and software development teams on multiple versions of new Wi-Fi irrigation controllers over the past five years. He is one of the principal trainers on Wi-Fi irrigation controllers for professional contractors that come from across the United States to visit the Rain Bird Corporation.