FROM THE INTERIM DIRECTOR
IN SEASON: EDGECOMIA
TRAVEL: THE OREGON GARDEN
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LAST LOOK
Greetings,

“Think globally, act locally” – is a phrase that has been around in one form or another since the early twentieth century. Since the mid 1970’s, it has been adopted by environmentalists and is a maxim with which we have all become familiar. We see it on bumper stickers, in shop windows, and even on refrigerator magnets. While I certainly try not to let bumper sticker philosophy set forth my life’s ambitions, there is something about the phrase that does ring true with me.

The empirical and anecdotal evidence of climate change and its effect on our global environment is irrefutable. However, we as gardeners are often more attuned to it at our local level. Whether excessive summer temperatures, increased hurricane activity in the Gulf affecting weather in the Southeast, or warmer winters that skew hardiness zones, we witness firsthand the consequences of human activity on the earth’s atmosphere.

In this issue of Cultivate, we examine plants, landscaping practices, and literature that can help us adjust to a changing environment. Want to plant more trees on your property but just do not have the space? Jason Reeves gives great examples of slender trees that are ideal for the smaller landscape. Carol Reese recommends trees that can provide shade for your home, lowering summer energy consumption, without threatening the built structures. To help with your physical and mental health inside your home, check out the article by PJ Snodgrass on the benefits of interior plants.

Also in this issue, Andy Pulte discusses the New Perennial Movement of garden design that seeks to address environmental concerns while maintaining aesthetic appeal. If you want to delve deeper into environmental and sustainable design check out Joan Worley’s book review of Climate-Wise Landscaping: Practical Actions for a Sustainable Future.

These articles and our regular features make for a packed issue that may prompt you to act locally while thinking globally. As always, I wish to thank you for your support of the State Botanical Garden of Tennessee and the work we do here.

Together we grow!
By February, winter has dragged on almost as long as you can stand. Christmas and the New Year with their colorful decorations and cheer are long gone, and all your resolve to keep getting outdoors has been exhausted. Spring is right around the corner if you can just hold on a few more weeks. In the nick of time your Edgeworthia buds begin to open, giving you just what is needed and reminding you of the beautiful spring that is to come.

Commonly known as paperbush, *Edgeworthia chrysantha* is a deciduous shrub native to the woodlands of China. It grows best in afternoon shade preferring rich, moist yet well drained soil, but it can grow in full shade. It has a mounding habit and grows 4-6 feet high and 4-6 feet wide in six to eight years. Reliably hardy with brief drops of temperature to 0 F, this plant will grow well in all but the higher elevations of Tennessee, particularly when planted in a sheltered site.

In the spring and summer Edgeworthia is a lush shrub with 6-inch-long, oblong leaves. Once the leaves have dropped in the fall its architectural stems can be seen and enjoyed, especially with a dusting of snow. Next year’s flower buds form in late summer and fall. Blooming late in the winter, about six weeks before putting out its flush of leaves, *Edgeworthia* delights plant lovers. The flowers, which are complemented by the silky white calyx, can vary from creamy yellow to gold depending on the cultivar. Some noteworthy cultivars include ‘Winter Gold’, ‘Nanjing Gold’, and ‘Snow Cream.’

These late winter blooms are worth the wait through cold months to see in your own garden or at the UT Gardens. In Jackson they can be found along the north side of the main building and near the gazebo and in Knoxville in the bottom garden room near Neyland Drive.
Go West, specifically to the Pacific Northwest!

Your destination is The Oregon Garden, nestled in historic Silverton, Oregon, in the heart of the Willamette Valley. If you’re lucky enough to be driving to Silverton the scenic views are amazing. You’ll notice the rolling foothills of the Cascade Range, Douglas firs far and wide, and orchard after orchard of hazelnuts! Few realize that Oregon produces 99 percent of the US’s hazelnuts.

The Oregon Garden is relatively new, just opening in 2001, and offering more than 80 acres that showcase the natural beauty of the Pacific Northwest. With more than twenty individual themed gardens, from the Conifer Garden, Rose Garden, and Bosque, to the Children’s Garden, Sensory Garden, and Pet-Friendly Garden, to the Silverton Market Garden and Amazing Water Garden, there is something for all visitors.

Like the UT Gardens, The Oregon Garden is a trial garden for seed companies that have selected them to be evaluators of their annual seed trials. With those seed trials come color explosions everywhere!

I loved every step through The Oregon Garden, but my two favorite gardens, hands down, were the Conifer Garden and the Bosque. Providing interest season after season, the Conifer Garden, with outstanding standard size conifers, contains one of the largest collections of dwarf and miniature conifers in the US. Some are rare and have been collected worldwide. There’s also a diverse collection of companion plants including Japanese maples, daphnes, heaths, and heathers. This specialty garden was built to guarantee The Oregon Garden remains one of the finest public showcases for conifers in the country.

The Bosque (Spanish word meaning grove) was my second favorite garden. Its large plaza features four brick reflecting ponds with many planter boxes, each planted with a single Pacific Sunset maple. The foliage of the maple trees reflecting in the dark surface of the ponds was breathtaking!

If you’re a tree lover, and even if you’re not, another must see at The Oregon Garden is the spectacular 25-acre native oak grove. Living within is the 100-foot-high Signature Oak that has been dated at more than 400 years old; its massive branches touch the ground in several places. It has been designated as one of Oregon’s “Heritage Trees.”

One thing that I want to point out that makes The Oregon Garden unique and defines its sustainability commitment is its use of treated wastewater from Silverton. It’s only one of a few installations in the United States that reuses wastewater for its water features. Even in the summer months, when the climate is warm and dry (May–October), the garden doesn’t draw on Silverton’s drinking water supplies. Instead, it relies entirely on wastewater treatment plant effluent. The garden also provides wetland mitigation for a nearby industrial park for waterfowl and amphibian habitats. The wastewater receives final treatment on about 16 acres of The Oregon Garden where a series of twenty-five ponds perform final filtering functions. Along the way some of the water is diverted to subterranean storage tanks and is later used for irrigation throughout the garden.

Additionally, be sure to stop in next door at the Oregon Garden Resort, framed by rustic architecture and stunning garden views. As an added extra, your stay gets you into the garden at no charge, from sunrise to sunset.

Don’t hesitate to add The Oregon Garden to your bucket list of gardens. Anytime is the right time to plan a visit!
As many horticulturists do, I have a thing for the unusual. In 2010 I began collecting tall slender trees and to date have amassed and planted a collection containing twenty-one different species and cultivars in the Gardens.

Three of my current favorites are discussed below.

**Kindred Spirit Oak**

In 1974 the legendary nurseryman Earl Cully planted a thousand acorns from a cross of the upright columnar English oak with our native swamp white oak. Only a few of the hundreds of seedlings had the desired attributes of both species Cully was looking for and made his final cut. Regal Prince was the first introduction, and Kindred Spirit, with an even tighter habit, was the second.

The original Kindred Spirit is located in Jacksonville, Illinois, on what was once Cully’s property. It is over forty years old and has long since proven itself. From its American swamp white oak parentage, it inherited cold hardiness, heat tolerance, powdery mildew resistance, and limbs that withstand wind and ice, as well as the ability to grow on constantly damp or dry soil.

The shiny, dark, leathery leaves have silvery green undersides and are particularly noticeable when dancing in the wind. In fall, the foliage turns golden brown before dropping to reveal a strong framework of upswept branches.

Rising like an exclamation point, it serves as a powerful vertical element in the landscape, and the tight, upright habit gives it a formal feel. It makes a bold focal point and when planted in a row forms a handsome, property-defining screen or windbreak. Due to its mixed parentage, it possesses “hybrid vigor.” When grown in average to good garden conditions it will be fast-growing in its youth. A young Kindred Spirit can easily grow 12-18 inches a year. Expect it to reach 30-40 feet tall and 6-7 feet wide in thirty years. Kindred Spirit prefers a sunny site, average to good soil, and in its first couple of growing seasons, regular water during periods of drought. Once established, it will be quite drought tolerant, though constantly damp soil will pose no problem.
Arnold’ Tulip Poplar

Our state tree is the tulip poplar (Liriodendron tulipifera) for good reason. It is a beautiful tree and can be found growing in every county in Tennessee. A mature tree can reach nearly 100 feet tall and half as wide and as Michael Dirr says is “truly an aristocratic tree.” If you don’t have room for the straight species or if you’re looking for something a little different, consider the upright cultivar ‘Arnold’. ‘Arnold’ will reach 15-20 feet tall in ten years and mature to 50 feet tall and 15 feet wide. When the leaves drop, it can be just as much if not more architectural with its upright lateral branches that are almost parallel to the central leader. Thanks to the Neubauers of Hidden Hollow Nursery near Belvidere, Tennessee, who produce liners of this plant, we are often able to offer it at plant sales in Jackson and Knoxville.

Tulip poplars are drought tolerant once established, but they grow best in good soil where supplemental water can be provided in long periods of drought to prevent early leaf drop. The bright green leaves turn to a paper thin gold in the fall, breaking down very quickly and disintegrating under one pass with a mower. Honeydew falling from aphids feeding on the leaves can sometimes be a problem, so they are best not planted near a driveway or patio.

Slender Silhouette’ Sweetgum

No one dislikes sweetgum trees (Liquidambar styraciflua) more than I. While I was growing up on the farm, our house sat at the edge of the property and just across the fence was grove of sweetgum. You could forget going barefoot for months in the fall because of the dropped spiny “gumballs.” Spring forward twenty-five years and the cultivar ‘Slender Silhouette’ has become one of my favorite trees. Found in the wild by the great Don Shadow in Middle Tennessee, I first saw it at Shadow Nursery in 2005 and fell in love.

Growing like a totem-pole, ‘Slender Silhouette’ will reach 20-25 feet tall and 3-4 feet wide in eight to ten years. At last account the tree at Shadow Nursery, which is the oldest one in existence, was 80 feet tall and 15 feet wide. Sweetgums can be found throughout Tennessee and are known for growing in just about any conditions, but ‘Slender Silhouette’ is best planted in full sun and average to poor soil without irrigation. When grown in good soil or with supplemental water, some branches grow so fast that they become weak and splay out from the trunk like a waving arm. Fall color can vary but most years is not overly showy. Its “gumball” production is inconsistent and can vary from none to some. Even when it does make seed, because of its narrow growth habit, the balls end up not falling far from the base and are easily raked up.

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Above

1. ‘Arnold’ Tulip Poplar
   planted in 2012
   28 feet tall

2. ‘Slender Silhouette’ Sweetgum
   planted in 2012
   25 feet tall

3. Regal Prince Oak
   planted in 2012
   20 feet tall

4. Kindred Spirit Oak
   planted in 2015
   17 feet tall
I love the beautiful deep blue backdrop as you enter the Gardens. This sight was a common occurrence during the growing season. There was a lot of rain, and while many plants thrived, conditions were certainly favorable for disease with added heat and humidity.

**ABOVE:** The Disco Belle Series (*Hibiscus moscheutos*) is another showstopper that tolerates excess moisture. This late season bloomer offers up quite a show despite its small stature. It grows 2-3 feet but produces 9-inch blooms. They can be admired from the backyard of our Home on the Plateau demonstration plot.

**RIGHT:** Hibiscus is an excellent choice that thrives in our summer heat and humidity. Sugar Tip Rose of Sharon (*Hibiscus syriacus ‘America Irene Scott’*) has beautiful blue-green foliage with white variegated tips. The abundance of double pink blooms and compact size also make this an outstanding selection.
There were some newfound problems in the Crossville Gardens this year. We discovered Southern Blight in our usually thriving St. John’s Wort (*Hypericum calycinum*). Luckily after cutting it back and removing leaf litter, it put on healthy new growth. It’s a wonderful addition around the water feature. The Tennessee Spinner gourds growing on the green tunnel in our KinderGarden were diagnosed with cucurbit downy mildew. Information regarding these diseases and others can be found at plateau.tennesee.edu and on the Soil, Plant and Pest Center Facebook page.
1. COVID-19 restrictions kept many volunteers at home this spring, just as hundreds of plants arrived for 2020 research trials. Fortunately, West Tennessee AgResearch and Education Center research associates Randi Dunagan and Kacey Cannon (foreground) like to stay busy, spending any spare time between work duties in the greenhouse transplanting.

2. You can almost always find something unexpected at the UT Gardens, Jackson. In June, our Whale’s Tongue agave (*Agave ovatifolia*), located in the dry bed, put up this magnificent 14-foot flower stalk. A mature agave will flower just once.

3. Meet our new West Tennessee AgResearch and Education center director, Scott Stewart! Scott assumed this role in October following the retirement of Bob Hayes. In addition to managing the 600-acre crop research farm, he’ll provide leadership and support for Gardens staff.

4. As yards are shrinking in size, there is a growing demand for trees and shrubs with a smaller footprint. We have an extensive collection of slender trees and shrubs (all clearly labeled) that will aid homeowners as they select plants for tight spaces.

5. We’re hopeful we can fully return to in-person events in 2021. We have tentatively scheduled plant sales and Summer Celebration for the following dates: Spring Plant Sale – May 1, 2021; Summer Celebration – July 8, 2021; Fall Plant Sale – October 7, 2021.
1. As the semester got underway, we had several groups of student volunteers help us in the Gardens. This group of students from the UT Honor & Scholars program helped tackle big chores like weeding and mulching. Many hands do make light work.

2. Whitney Welch got this great shot of a green lynx spider with her head dipped in a pitcher plant searching for prey.

3. Volunteer Linda Fowler was decked out appropriately while on her mission to capture, tag, and release butterflies in our Monarch Waystation for the Monarch Watch organization that tracks migration patterns.

4. Whether online or in person, plant enthusiasts shop our plant sales for great selections and arrive for pick-up by any means necessary.

5. Two young visitors to the Helping Hands Kitchen Garden enjoy sitting in the “Big Girl” chairs.
Learn with Us

The UT Gardens sites in Knoxville, Crossville, and Jackson offer a number of ways to learn about the world around us. Join us for tours, lectures, workshops, plant sales, and special events suitable for all ages throughout the year.

CROSSVILLE
Classes and events are held at the UT Plateau AgResearch and Education Center in Crossville. Visit ag.tennessee.edu/plateaugardens regularly for an updated list of happenings, or email ccmgnews@gmail.com to receive email updates. Registration is required for all classes. You may register in person at the AgResearch and Education Center office, or by phone/email to Jennifer Burns at 931-484-0034, jburns35@utk.edu. Crossville is located in the Central Time Zone, and class times are listed accordingly online.

JACKSON
For more information regarding events, visit west.tennessee.edu or call 731-424-1643. Jackson is located in the Central Time Zone, and event times are listed accordingly online.

KNOXVILLE
Plan now for the many classes, workshops, and events offered in the UT Gardens, Knoxville. All events require preregistration. Visit utgardens.tennessee.edu to learn more. Knoxville is located in the Eastern Time Zone, and event times are listed accordingly online.
While we often think about controlling landscape pests early in the season before they do much damage, don’t discount late summer and early fall when pests prepare for overwintering. If not controlled earlier, many pest populations will continue to build and could be peaking by late season. In April, azalea lace bugs hatch from overwintering eggs inserted into the underside of the azalea leaves along the midrib. The nymphs are black and spiny, and several generations of nymphs and adults feed with their piercing/sucking mouthparts throughout the spring, summer, and fall. This foliar damage from azalea lace bugs gives leaves a bleached appearance, often by August. In late summer, azalea lace bugs begin to lay eggs that will overwinter. If the adult lace bugs can be managed before they are able to lay their eggs, there will be fewer eggs to hatch in the spring.

Tuliptree scale is a soft scale that produces copious amounts of honeydew primarily on tuliptree and some magnolias. This clear, sugary waste product attracts bees, wasps, yellowjackets, and hornets which are often the primary complaint. Sooty mold grows on the sticky honeydew covering leaves, twigs, and bark with the black residue. They only have one generation per year in Tennessee, with the adult female maturing by August and producing first instar crawlers by late August and September. The crawlers are the easiest stage to control with insecticides. Thus, control of the crawlers will take care of the problem for at least a year. The use of horticultural oil during the dormant period can be made to manage the overwintering second instar nymphs, if the crawlers were not treated.

Control spruce spider mites and southern red mites with miticides in late summer and early fall before they can lay overwintering eggs. An ovicidal miticide or horticultural oil can be used to control any eggs that have been laid. If mites and their eggs are not controlled in late summer or fall, an application of horticultural oil can be made during the dormant period to kill eggs. Managing these mites and eggs will prevent the damage to the new spring growth.

Some insects overwinter in plant debris, so removing dead plant material after a killing freeze in the fall or winter will reduce the number of pests surviving in the landscape until spring. The fourlined plant bug feeds on foliage of many perennial and annual plants. It injects a toxic saliva into the plant when it feeds, which causes sunken, necrotic spots that some may confuse with a disease. If you see this type damage on several unrelated plants, it is probably the plant bug. Eggs are laid in plant stubble by late spring so a fall or winter cleanup will greatly reduce the number of nymphs hatching from eggs the following spring.

Lesser canna leafrollers web the leaves of canna and prevent them from unfurling as they feed within the whorl on the surface of the leaves. They overwinter as pupae in the plant debris with the moths emerging the following summer. After a killing freeze in the fall or winter, cut the plants off at ground level, and bag and dispose of the plant material to hopefully remove most of the pupae from the landscape.
I picked up Climate-Wise Landscaping: Practical Actions for a Sustainable Future (Sue Reed and Ginny Stibolt, New Society Publishers, 2018), with some apprehension because I went to school before the words ecology and environment appeared in textbooks, much less something you could major in. Not to worry. This is the perfect book for anyone who has had no formal study in sustainable anything or who may think landscaping is rearranging nature to look pretty. It is written in English, not polysyllabic jargon, with lots of pictures, and it is so comprehensive that I began to think of it as an easy-read textbook, minus academic trappings. Unlike textbooks, it was never boring.

The authors, a landscape architect in Massachusetts and a botanist who has written several books on gardening in Florida, have put together a practical, goal-directed trove of information on gardening for the planet. They describe it as a what-to-do with options, rather than a how-to. It’s also a why-do: There is an assumption, or perhaps a hope, that the reader will be interested in saving the planet, one garden at a time, by eschewing destructive chemicals, for example, or by planting native species.

Physically, the book pleases. The paper is good quality matte finish, graphic design scores an A-plus, and there are excellent color photographs. Climate-Wise is super-organized into ten topical sections of 20–30 pages—Lawn, Urban Issues, Soil, Planning and Design, Ecosystems, Food, Native Plants, et al.—each opening with an Overview, followed by climate-related issues pertaining to the topic and remedial ideas. The text is punctuated with sidebars. (In one thirty-seven-page section I counted twenty-two color photos and sixteen quotations and factoids set apart by color or outline.)

“Lawn,” for example, opens with a gorgeous full-page photograph and two pages of Overview pointing out how we have gone overboard and are dead wrong in establishing green carpets that require fertilizers to make the grass grow, energy-gobbling machinery to keep it in check, endless watering, and eternal vigilance. The first of several issues (Action Topics) is “Liberate the Lawn” (from chemical dependence), with a “Primer on Landscape Chemicals,” the science you need in a nutshell. There are ideas (Actions) put forward. You could eliminate your lawn or make it smaller. You could turn your lawn into a meadow or a vegetable garden. Why does anyone even have a lawn is the implicit question. The authors are amazingly diplomatic, never accusatory, and the tone is neutral—here are the facts, do with them what you will. Still, the generic homeowner will be hard put not to feel a twinge of guilt over the use of chemicals, gasoline mowers, and other power tools.

Three especially good things about Climate-Wise: It explains in detail the ecology of a garden, from fungi on tree roots to insects and the birds that prey on them, every piece of it working in harmony; there were cool things I never knew or thought about on every page, such as how native plants affect sustainability; and finally, terms are defined. Definitions rock! Climate footprint is the overall impact of an individual, company, product, organization, or event on climate (page 9).

If you want to leave a smaller footprint in the sand, Climate-Wise is for you. Few books are both practical and inspiring. This is one.
Growing Through Challenges

Though the pandemic continued through the summer and fall, all UT Gardens locations were able to adapt to the changing situation and provide continued educational opportunities, conduct plant trials, expand our collections, offer great selections at plant sales, and provide a beautiful space for people to get away from the worries of the day.

Jacqueline Moss was hired for the summer and fall to work in the Helping Hands Kitchen Garden in Knoxville. Her work was funded through a USDA and APGA grant to increase food security for those struggling financially because of COVID-19.

The vegetables and fruits produced in the Helping Hands Kitchen Garden were picked up weekly by Michael Smith of the Society of St. Andrew and delivered to local food banks. By mid-September he had delivered 737 pounds of produce grown by UT Gardens to food charities.

For their Spring Plant Sale, Crossville was able to adjust to pre-orders and have contactless pick-up. Also they released daily educational videos during the week of their canceled Fall Gardener’s Festival and Weekly Walk Through the Garden videos hosted by Shalena Durkot and Master Gardeners.

The Jackson crew had to adapt to unique working conditions in 2020 including masks. They did so graciously...and safely!

In the Gardens Facebook Live: If you cannot visit the UT Gardens, Jackson, in person, consider joining every Tuesday morning at 9 a.m. CT for a Facebook Live tour of the grounds. It is hosted by Jason Reeves, Carson Brown, and Celeste Scott, a horticultural UT Extension agent in Madison County. (not pictured).
Without the leafy ceiling there was blue sky! Sunshine! It was April, and decisions had to be made, ASAP. Hiring a landscape designer was not an option, given time and cost constraints. Another idea was a topsy-turvy overhaul: Creating beds of sun-loving shrubs and flowering annuals. In lieu of a grand plan there wasn’t time to make, the homeowners decided to leave the surviving plants in situ and see if they could tolerate environmental change. Would they rebound? Scattered shade remained, here and there, from structures, a screen of hollies, and trees on the periphery. Without the hackberry, the birds were a bit “off,” ignoring the birdbath that had been moved a few feet, but they were adjusting. Maybe the plants would, too.

Before any restorative planting, there was a daunting lot of work to be done: There were countless twigs, small branches, and chunks of wood to remove; layers of sawdust to be blown off; an antidote of ground lime to apply to the soil; and paths to re-gravel. Change came bit by bit, day by day. Plant material, including sun-loving Vinca major ground cover. Sawdust inches deep covered the ground. Bedraggled plants in beds nearby—hellebores, hosta, ferns, and Solomon’s seal—were accustomed to shade and, alas, the shade had been sawed off and carried away.

The loss of a large tree brings traumatic, climatic change to every living thing in its wake. At the three-month mark, plants are showing mixed results, flourishing in the sun or hanging on with gritted teeth. Sunlight is an adjustment for the homeowners, too, back to square one in mood and mode, in plant selection and care. While they study both what is and what might be even better, the garden waits, poised for further development. Another eco-change is in the offing, less traumatic, with new ideas and new plants. Next year, next year—every gardener’s hopeful cry—will bring newfound energy.

The towering hackberry is gone but not forgotten: In the midst of all the digging and delving, it presides serenely over the evolving garden as a majestic stump, with pots of flowers on top.

R.I.P., A Tree Story

Joan Worley, Tennessee Extension Master Gardener, Blount County

With or without a human to hear it, when a tree falls in a forest, it lies there and very slowly, eventually crumbles into the earth. In a small city garden, the loss of a tree can be a horticultural disaster—never mind the house—especially if the tree is a giant. It changes the entire ecosystem, from microorganisms in the soil to the birds in the (other) trees.

One such tree, a ninety-year-old hackberry (Celtis occidentalis) an estimated 100 feet tall, with a canopy that shaded a backyard 88 feet wide, did not fall; instead, it was blown into a dangerous tilt, threatening not one, but two houses in close proximity. Happily, it was removed without damage to “real” property. Damage to plant life and limb was another story.

Even with careful tree removal, what had been a lush foliage garden was soon a ravaged yard of sawdust and rubble. Huge logs had rained down from a 90-foot boom, some plunging through a hedge of Photinia, and been dragged away through the Vinca major ground cover. Sawdust inches deep covered the ground. Bedraggled plants in beds nearby—hellebores, hosta, ferns, and Solomon’s seal—were accustomed to shade and, alas, the shade had been sawed off and carried away.
Yard before the tree was removed

Yard after the tree was removed
Crossville

Shalena Durkot, Garden Coordinator and Horticulturist

This photo captures why we all love Mike Barron. He keeps a smile on his face and is always willing to help. He is motivated, full of ideas, and a problem solver.

Mike grew up in southern Indiana on a farm, so he is no stranger to hard work. He received a master’s degree in business and worked for a corporation in multiple locations. In the 1980’s job that brought him to Tennessee. He and his wife loved the area and planned to return. Mike retired in 2009 and settled on the Cumberland Plateau. He spends much of his time working the land and enjoys woodworking. This has been very handy for many projects at the UT Gardens, Crossville.

Mike became a Cumberland County Master Gardener in 2017. He wanted to improve his knowledge of gardening in the hopes of having better success with plantings at home. It was also a great opportunity to meet more people in the area. While Mike does not consider himself a Master “Gardener,” he is a true member of the organization. He quickly stepped up to volunteer in the Gardens with various projects such as: mulching, expanding the KinderGarden, and several structural improvements and builds. Over the last year Mike also joined our Umbrella Committee (supports communication between the AgResearch Center and Master Gardeners), and became chairman of the Flower, Lawn, and Garden Show (Cumberland County Master Gardeners’ largest fundraising event).
Jackson

Ginger Rowsey, UTIA Marketing and Communications

When the COVID-19 pandemic kept even the most faithful Tennessee Extension Master Gardeners from helping around the grounds, the work typically done with the aid of volunteers piled up. As plant material in need of transplanting for the 2020 research trials started to arrive, Jason Reeves, UT Gardens, Jackson curator, said he became concerned.

“That’s when Randi jumped in and did tons of transplanting. She was a life saver!” says Reeves.

Randi Dunagan is a research associate at the West Tennessee AgResearch and Education Center and one of the busiest people around. She coordinates multiple corn and soybean trials, serves as the Center’s safety officer and maintains the Center’s weather station. Despite her long list of duties, if she finds a spare minute during the workday, Randi is quick to offer help to other project leaders. It’s hard to beat her work ethic.

“While Randi was compensated for her working hours, her effort and attitude were given freely. She is a great example of a team player with a true volunteer spirit.”

Knoxville

Alice Clark, UT Gardens, Knoxville, Volunteer Coordinator

It was with great sadness that we learned of the passing of dedicated volunteer, ardent UT Gardens, Knoxville supporter, and our great friend David Craig. Dave was truly an extraordinary man who, among a great many other qualities, was a life-long learner and an educator to all. Having spent his thirty-two-year professional career at UT as a teacher educator, Dave was not idle in retirement. He became an Extension Master Gardener in 2002. In 2004, he became president of Knox County Master Gardeners (KCMG) and initiated the KCMG training program. He was founder of the Habitat Urban Gardens (HUG) program that provided plants and horticultural training to Habitat for Humanity homeowners so they might enjoy a nicely landscaped property as well as a new home. Over the years, he volunteered many hours in the Knoxville Gardens, working in extreme conditions with a smile on his face and with an energy that few could match. He shared his vast knowledge of horticulture techniques with our staff and volunteers and was an enthusiastic supporter of the Gardens. He is greatly missed. A memorial bench provided by his wife, family, and KCMG, is planned for the kitchen garden where he worked extensively.
Before air conditioning, the need for shade trees to cool the southern home was essential. I grew up in a roomy two-story farmhouse built in 1914, and three of the trees planted that same year still shade it and my brother’s family activities more than a century later.

Numerous studies confirm that shade on a house lowers air conditioning costs by 15-50 percent but monetary savings are just a pixel in the larger picture. The impact is planetwide. Over one-third of the carbon emissions in the US are caused by energy production, so there is that. Trees also remove and sequester carbon dioxide from the air, helping slow the rate of climate change, and release the oxygen we need. Trees reduce rainwater runoff—their roots anchoring our precious soil, slowing and filtering that water to restore aquifers.

On the flip side, trees can cause catastrophic damage when they fall, but planting distant from the house cancels out the benefits. There are no guarantees, but there are several ways to minimize the risk.

Choose tree species noted to be resistant to wind damage. A Google search yields much information, some gleaned from research conducted after hurricanes. In study after study, common bald cypress (*Taxodium distichum*) comes out the consistent winner, along with pond cypress (*Taxodium ascendens*), yet they are noted for the “softness” of their wood. How’s that?

The key lies in the growth habits. Denizens of swamps, these species have widely flung “buttressed” roots that provide stability in soft muddy soils. They don’t blow over. They just don’t.

Another factor occurs above ground. Where some trees diverge several feet above the ground into several large limbs, cypress instead has a centralized trunk whorled with many small limbs, providing much less surface (resistance) to the wind. This trunk also displays a strong “taper,” meaning that the diameter at the base is quite wide yet narrows swiftly as it ascends, creating a “bottom heavy” tree that stays put. Even if the wildest storms cause the tree tops or limbs to be blown from a cypress, they are rarely of enough heft to cause harm.

It seems counterintuitive but another safety measure is to plant several trees in groups. Trees on the perimeter will deflect and disperse the strongest gusts, but more importantly, the root systems mingle and provide an interlocked network of anchorage. A solitary tree catches the wind’s full brunt and the single saucer of roots is more easily lifted out of rain-soaked soil.

If your shade trees are already established, and are not among the species known to be the more wind resistant, have a certified arborist evaluate them for some judicious pruning. Opening the canopy up can allow wind to move easily through, rather than push against. Large limbs overhanging a roof or parking can be carefully reduced or removed, a technique that also brings more stability to top heavy or unbalanced trees.

Still nervous? Smaller trees can provide substantial amounts of shade. Tree-formed crapemyrtles such as the statuesque ‘Natchez’, kousa or flowering dogwoods, trident maples or saucer magnolias are just a few beauties to consider.

Knowing the age of the three venerable giants that still shelter our childhood home is precious to my family. Consider leaving a record of your tree plantings. The generations to come are likely to appreciate the shade and the history.
As gardeners, we know the benefits of being outside, getting our hands dirty, and enjoying the fruits of our labors. But what about our living spaces? As climate change impacts the out of doors, allergens are more problematic due to changes in bloom times, and air quality is poorer on some days due to higher temperatures and pollution.

Many studies have shown the benefits of having plants in the home. This is even more important now as, in many cases, our homes are also our workspaces and school rooms. So how can having plants in our homes help us?

E.O. Wilson published his book *Biophilia* in 1986 and introduced us to the innate connection we humans have to nature and natural things. Understanding that the movement to urban areas was having a negative impact on our well-being, Wilson wrote about the importance of being in nature, having green spaces in our environment, and how having living green in our homes makes it a happier, healthier place.

A study conducted at Rutgers University in 2007 examined the impact of flowers on our emotional well-being. This study found that innately, we all understand that when we see flowers, have flowers in our home or office, or are gifted some bouquet, we are happier. Doesn’t even a small bouquet of flowers bring a smile to your face?

The Rutgers study found that flowers have an immediate impact on our happiness, lessen depression and anxiety, and increase our overall life satisfaction. Flowers also can connect us with family and friends. Maybe you have a favorite flower and your friend or loved one sends you an arrangement or plant of that flower. How do you feel? Better? Happier?

*Psychology Today* published a blog post in 2018 listing some of the many benefits of having indoor plants. They included: boosting mood, reducing stress, and feeling better physically. When in our work environment, indoor plants can help restore mental processing and creativity. (Augustin, 2018). Just adding one or two plants can bring these benefits to your work or home environment. The field of horticultural therapy uses plants in activities designed for those with dementia to increase socialization, cognitive skills, and even fine and gross motor skills (American Horticultural Therapy Association, 2020).

So what plants are good to have in your indoor space? What can they do for you?

In 2009, Kaplan provided a list of those plants that have benefits to your health when indoors based on several experimental studies. Plants included in the studies that showed benefits were golden pothos (*Epipremnum aureum*), arrowhead vine (*Syngonium podophyllum*), and Chinese evergreen (*Aglaonema sp.*).

The benefits reported included were: lower blood pressure, increased reaction time and attentiveness, improved productivity, lower levels of anxiety, and improved well-being.

Research also says that leafy green plants are the most effective mood enhancers. Ficus trees (*Ficus benjamina*), spider plants (*Chlorophytum comosum*), snake plants (*Sansevieria*), African violets (*Saintpaulia*), are just a few. But unless you grew up in a desert area and love cacti, they should not be considered as they do not produce the same beneficial effects.

So, what can a plant do and are there drawbacks? The table on the right lists several common houseplants, what they can do for your indoor space, and a note about toxicity. Although plants are useful and beneficial, some when ingested by humans or pets can cause negative reactions.

Just as you plan your outdoor garden, finding the right spot for your indoor plant is essential. Some plants, like ferns, will need lower light and higher moisture levels. Having just one or two plants in your workspace or home can deliver benefits. One recommendation is to have an 8-inch diameter pot for every 129 square feet of space to reduce fatigue and stress. To purify your air, you could use 15-18 plants in 6- to 8-inch pots. (Bioadvanced, 2020). However, take care not to have so many that they look cluttered. That could add stress!

The bottom line is that having plants and flowers in your home or workspace can improve your mental and physical health and is most likely an inexpensive investment in your future!
<table>
<thead>
<tr>
<th>Plant Name</th>
<th>Specific Epithet</th>
<th>Use Indoors</th>
<th>Toxicity to humans</th>
<th>Toxicity to pets</th>
</tr>
</thead>
<tbody>
<tr>
<td>Spider Plant</td>
<td><em>Chlorophytum comosum</em></td>
<td>Purifies air rapidly; removes formaldehyde</td>
<td>None</td>
<td>Keep away from cats as it can cause upset stomach</td>
</tr>
<tr>
<td>Dragon Tree</td>
<td><em>Dracaena marginata</em></td>
<td>Purifies air; removes formaldehyde, benzene, toluene, and xylene</td>
<td>None</td>
<td>Keep away from cats</td>
</tr>
<tr>
<td>Gerbera Daisy</td>
<td><em>Gerbera jamesonii</em></td>
<td>Releases oxygen at night; purifies air by removing benzene and trichloroethylene</td>
<td>None</td>
<td>None</td>
</tr>
<tr>
<td>English Ivy</td>
<td><em>Hedera helix</em></td>
<td>Removes benzene from air</td>
<td>Vomiting, breathing issues, convulsions, coma</td>
<td>Dogs and cats will experience stomach pain and vomiting due to saponins</td>
</tr>
<tr>
<td>Boston Fern</td>
<td><em>Nepropleis exaltata</em></td>
<td>Humidifies air</td>
<td>None</td>
<td>None</td>
</tr>
<tr>
<td></td>
<td><em>'Bostoniensis'</em></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Philodendron</td>
<td><em>Philodendron</em></td>
<td>Purifies air; removes formaldehyde</td>
<td>Oral irritation, intense burning and irritation of the mouth, lips, tongue, excessive drooling, vomiting, difficulty in swallowing</td>
<td>High—Not recommend for homes with cats</td>
</tr>
<tr>
<td>Snake Plant</td>
<td><em>Sansevieria trifasciata</em></td>
<td>Purifies air.</td>
<td>Mildly toxic if consumed</td>
<td>Can cause moderate illness if ingested</td>
</tr>
<tr>
<td>Peace Lily</td>
<td><em>Spathiphylum</em></td>
<td>Removes mold from air</td>
<td>Swelling of lips, tongue, throat</td>
<td>High</td>
</tr>
</tbody>
</table>
Memphian Paul Little of Little Hill Nursery sees ideas sooner than most people. He developed a passion for Sedum some thirty years ago when these easy-care plants were not widely utilized in landscapes in the Mid-South. He proceeded to change that by getting the word out about these gems and offering plants for purchase at area gardening events and at his nursery. Next, recognizing sedum’s excellent potential for green roofs, also relatively unknown in the 2000’s, he developed his own rooftop planting blocks of sedum and other succulent ground covers for that purpose - putting them on the market a good decade before they became commonly available elsewhere.

Little earned his moniker as the Johnny Apple-Sedum of the Mid-South for educating generations of West Tennesseans about sedums, about succulent ground covers, and about roof gardens. His first presentation was some twenty-four years ago to a group of Master Gardeners. “Somehow they really enjoyed it and so did I.” From there he was off on a talk circuit that ultimately included about every garden club in the region, as well as the Memphis Botanic Garden, Dixon Gallery and Gardens, and the Lichterman Nature Center.

Little’s wholesale nursery, Little Hill Nursery, gained acclaim for a set of twelve to fifteen Southern Select Sedums. These are selections Little made through extensive evaluation to identify sedum that thrive in our region, despite challenging heat, cold, or humidity that cause other sedum to fail.

One of Little’s selections is ‘K’s Little Joy.’ The others are species well-suited for a variety of planting needs. Among those, Phedimus takesimense is sold in the Memphis area under the name Carol’s Favorite in honor of UT ornamental horticulture specialist Carol Reese. Reese was smitten when the plant was trialed at the UT Gardens, Jackson, and promotes it for the dense, frilly foliage and its adaptability for use as a ground cover or even as an element in container combos. You can find a full list of Little’s selections at his nursery’s website, southernselectsedum.com.

With some 400 species, sedum are found throughout the northern hemisphere, and some grow beyond it. Their structures, foliage, flowers, and popularity with pollinators make them good plants to have. They can be carefree, too, if you provide their chief requirement. “That’s drainage, drainage, drainage,” Little says. He recommends amending soil with PermaTill or other soil conditioners that improve drainage. Shredded pine bark also will work, but Little advises against Perlite. He finds it compacts too quickly. Even Tennessee red clay is hospitable for sedum, after the soil is amended.

Little is now 82. His nursery continues thanks to “dirt friends” who chip in when help is needed. One is his unpaid partner, Bill Ferrell. A jeweler with great plant instincts, Ferrell introduced dwarf conifers and tropical succulents to the nursery, and all are prized.

“Every morning I get out and look at the plants. It’s what I do,” Little says. As for his career as a nurseryman and plant evangelist, he says, “I have had a good time every step of the way.”
ABOVE: Paul Little spotted the potential of a little sedum growing in shade in his wife Kay’s fairy garden. After fifteen years of working with it, he introduced ‘K’s Little Joy’ to the plant world. The selection is much like a miniature version of the popular ‘Autumn Joy.’ Its big plus is that its compact form is less prone than ‘Autumn Joy’ to flop over in the fall from the weight of its blooms.
Holly Jones, Helping Hands Kitchen Garden, UT Gardens, Knoxville, and Margeaux Emery, UTIA Marketing and Communications discuss the many delectable uses of sage.

Holly: When I think about culinary herbs, sage (Salvia officinalis) is one of the first ones to come to mind. No respectable herb garden is complete without a sage plant or two. I have a gorgeous specimen of Salvia ‘Berggarten’ in my own garden which I admire for its large rounded gray-green leaves and distinctive sweet earthy aroma. But truth be told, I haven’t always been comfortable incorporating it into my cooking. I throw parsley and basil around like they are salt and pepper, yet I have been a little intimidated by the strength and complexity of sage. It’s safe and expected in a holiday stuffing, but what else can you do with it? As it turns out, you can do quite a lot.

Margeaux: My mother loved sage and would make cornbread sage dressing for the holidays. I grow a ‘Berggarten’ by my back steps, just as she did, in her memory. But until I came across an Italian pasta recipe—you fry fresh sage leaves in butter until crisp, which creates a heavenly brown butter sauce—I, too, didn’t have many uses for the herb.

Holly: A few years ago, I was introduced to the concept of the sage cocktail. Those complex flavors that include notes of citrus, eucalyptus, and pine combine beautifully with the botanical elements of gin, fresh lemon and sparkling water. And if you’re not in the mood for an alcoholic beverage, I’ve found you can skip the gin and experience the refreshing pleasure of a sage-based mocktail. Hence the Lemon Sage Sparkler was born!

Margeaux: Delish. The taste is so unexpected!

### LEMON SAGE SPARKLER

4 ounces fresh squeezed lemon juice

4 ounces sage syrup (see recipe below)

16 ounces sparkling water

Pour lemon juice and sage syrup into a cocktail shaker with ice. Shake vigorously. Pour into larger container and then add sparkling water. Pour over ice. Makes four 6-ounce servings.

#### SAGE SIMPLE SYRUP

2 cups water

2 cups sugar

10 to 12 large sage leaves

Add water to a medium saucepan over high heat. Bring to a boil. Add sugar and stir until dissolved. Add sage leaves and continue to boil for 60 seconds. Remove from heat and steep for 30 minutes. Strain sage leaves out and store in a clean glass jar. The syrup will last for 6 months if refrigerated.

Note: The syrup can be made with less sugar but it will have a shorter shelf life.
I am a true believer that if people remember Harrison, he isn’t really gone.

Pang passed away suddenly December 30, 2018, at age 34. 2019 would have marked the couple’s ten-year anniversary, a moment they had planned to honor by renewing vows under that same UT Gardens gable.

“The UT Gardens is where our dream began and had so many great memories,” says Rui. “So having a bench there to tell our story means a lot to me and to Harrison’s family.”

Rui chose to still mark their ten-year anniversary in the UT Gardens. For her, the memorial bench serves as a reminder of the romantic love she and her late husband shared. However, it also is a reminder she wants to share with her larger Volunteer family.

“I want this place not only for me but for everyone who has come to know us to be able to come by, relax, have a cup of coffee, lunch, sit down on the bench, and remember all the great times we had together,” says Rui.

The tributes and memorials program at the UT Gardens allows family and friends to honor a living person or commemorate lives lost by purchasing a bench, tree, or placing a name on the donor wall. These funds support the growth and development of the Gardens, which has served as a place of solace and respite for so many.

In addition to the memorial bench, which supports the mission of the UT Gardens, Rui created the Harrison Pang and Rachel Rui International Excellence Endowment to support UT’s global engagement efforts.

“Harrison had a very giving heart,” says Rui. “UT welcomed us with open arms and we always knew that we want to leave our legacy through the University and help support the education of our next generation of global leaders.”

For more information about the UT Gardens tributes and memorials program, contact Tom Looney at tom.looney@tennessee.edu or James Newburn at jnewburn@tennessee.edu.

To learn more about the UT Gardens, Knoxville, Tributes and Memorials program, visit tiny.utk.edu/memorials
New Perennial Movement Basics

Andy Pulte, UT Gardens, Knoxville

There is a movement afoot that some have dubbed the “New Perennial Movement.” The heart of this planting style seeks to create a flower forward, fantasy version of the North American prairie. A primary goal of these plantings is to be functional and maintainable while providing ecosystem services. That is, they are not just beautiful, but they also serve the greater environmental good.

Roots of a Movement

Sometime near the beginning of the Victorian Era (1840s) in Europe “bedding” or “carpet bedding” became popular with gardeners. This style is basically the formation of geometric patterns out of annual plants. New, never before seen plants had become available and the well-to-do Victorian Era gardener showed them off en masse.

In the broader scheme of things, this craze didn’t last long in Europe. You can still see it, but it by no means the focus of most large estate gardens. After the American Civil War, the trend moved to the US with Victorian architecture. The thing is, it never left. The aspirations of long uninterrupted explosions of annual color, where every plant stays in its own dedicated space seems to be one of the hallmarks of American gardening. You know you’re in a “fancy” place when the sign out front is adorned with the latest annuals in straight lines in complementary colors.

I believe there is a place for the carpet bedding style of gardening. Color, nonstop flowering, maybe a little garishness, perhaps this is a gateway to get people interested in gardening. However, the new perennial movement steps away from this convention.

A Left Turn in Garden Style

The “New Perennial Movement” of today has its roots across the pond starting in the 1870s with two main individuals. William Robinson (a native of Ireland) and Gertrude Jekyll (a native of Great Britain). Robinson used terms like “naturalistic plantings” and encouraged a balance in the garden—advocating for actively managed landscapes that took cues from nature. Jekyll subsequently pioneered a naturalistic, cottage-garden style that mingled ideas of wildness, formality, and structure. Through their books and articles an idea emerged that gardens could have wild character and simultaneously have a managed aesthetic.

Next, Karl Forester (1874–1970) pioneered a “New German Garden Style” that was very ornamental grass forward and focused on four season interest. He in turn influenced Wolfgang Oehme (1930–2011) and James van Sweden’s (1935–2013) “New American Garden Style” which relied primarily on flowering herbaceous perennials and taking cues from nature.

The Oudolf Effect

Of course, the above outlined individuals were not the only ones embracing such concepts. Legendary Dutch gardener Mien Ruys (1904–1999) well known for garden design that mixed undemanding wildness with straight lines and formality, undoubtedly influenced many gardeners. One such gardener is Piet Oudolf, currently the most well-known designer in what has been called the “Dutch Wave” and now the “New Perennial Movement.” Oudolf’s work has spread beyond the Netherlands to high impact designs in the creation of the High Line in New York City and the Lurie Garden in Chicago, among others. These designs specifically have opened wide the door for exploration of the value of more naturalistic plantings. And more importantly, that these plantings can occur in urban settings.

This Can Be Done on a Small Scale

The main thing I can say about all of the gardeners mentioned in this article is each experimented in the garden. They all learned the individual merits of plants through observation over decades of gardening. If this style appeals to you, perhaps start by thinking about different plant types, and how they could potentially work in concert. This gardening style both celebrates plants as individuals as well as shines a spotlight on how they harmonize.
**TOP:** Piet Oudolf designed Lurie Garden in Chicago

**RIGHT:** Classic carpet bedding style with annuals

**BELOW:** Chicago Botanic Garden
LAST LOOK

A Place For All Seasons

The UT Gardens in Knoxville, Jackson, and Crossville feature plantings with year-round interest that hold their own during the cold, sometimes dreary winter months. The plants pictured here in the Jackson Gardens are showstoppers during the months of December, January, and February. Be sure to visit your nearest UT Gardens site to see more examples of colorful, cold-loving, plantings that bring out the beauty of winter.
'Winter Red' winterberry

'Jelena' witchhazel

'Color Guard' yucca