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Greetings,

What a strange time it has been for all of us this spring as the global community dealt with the COVID-19 pandemic. In response though, we saw people, many novices, turning to nature and gardening for solace, activity, or both. Garden centers, deemed essential businesses, were busy with customers wanting to purchase vegetables and other plants to enhance their surroundings, improve their health, or share an experience with their children.

All three UT Gardens sites remained open during the crisis to provide a place of respite, relaxation, and rejuvenation for visitors while still following Centers for Disease Control and Prevention guidelines on social distancing. In Knoxville, we received many comments from guests who discovered the Gardens for the first time and were so impressed with and appreciative of the resource they found. In addition, all three sites initiated special outreach through social media platforms to bring the Gardens and horticultural information to those sequestered at home. It was inspiring to see this creativity in extraordinary times.

This current Cultivate issue focuses on pollinators. Several articles focus on choice plants that are pollinator friendly, Frank Hale discusses protecting pollinators, and Holly Jones writes about UT Gardens participating in national efforts that are raising pollinator awareness. It is our responsibility and joy as gardeners to do our part in enhancing the environment that encourages pollinator populations. There is also a wonderful article about the legacy of Hidden Valley Nursery, the source of many plant introductions so admired in the Jackson and Knoxville Gardens.

Yes, it has been an unprecedented year so far. Nature has taught us that she is resilient and so are we. I want to thank you, our UT Gardens enthusiasts, for your continued support as all our sites have taken hits financially through the cancelation of various fundraising events and educational programming. Whether it is through your new or renewed membership, your purchase at an online plant sale, a gift, or your time as a volunteer, your support is so needed and appreciated in times likes these.

Together we grow!
IN SEASON

**Fringetree**

Alex Smith, Horticulture Manager, UT Gardens, Knoxville

With the arrival of spring comes the familiar blooms of saucer magnolia and flowering dogwood, both signaling warmer weather. While these trees continue to be staples in the landscape, our underutilized native fringetree, *Chionanthus virginicus*, is deserving of a spot in the garden. Plantsman Michael Dirr writes of these beauties in the *Manual of Woody Landscape Plants* that he “would like to make a case for this as the national shrub for even dogwood does not carry itself with such refinement, dignity and class when in flower.”

Fringetree is indeed enchanting. Its fragrant, white feathery flowers blossom in mid- to late spring, with handsome dark green summer foliage turning to hues of yellow in fall. Hardy from zones 3 to 9, straight species specimens are found in nurseries and can be male or female. Female trees produce clusters of dark bluish fruits in summer that are a great source of food for birds and wildlife. Cultivated varieties, including ‘Prodigy’, ‘Emerald Knight’, and ‘White Knight’, tend to be male and have a more floriferous display than females.

In its native habitat, fringetree can be found growing along stream banks and boggy areas as an understory plant. It is adaptable to a wide range of soils. Slow growing fringetree usually takes the form of a large shrub or small tree and can reach up to 30 feet in height when mature. Take note, fringetree is susceptible to emerald ash borer. New research has found it more resilient than the ash tree, and observations are that some trees can recover from infestations without the use of pesticides.

At the UT Gardens, Knoxville, *C. virginicus* ‘Prodigy’ grows in median beds throughout the parking lot across from the main entrance. At the UT Gardens, Jackson, a stunning mature straight species is located near the woodshop and ‘Emerald Knight’ is near the entrance door. Be sure to check out this underutilized tree on your next visit.
Southern charm overflows at Lewis Ginter Botanical Garden (LGBG) in Richmond, Virginia, and so do butterflies, bees, bugs, and blossoms, oh my!

My visit began with a walk down the garden’s main path. A rainbow of flowers, each a part of a group of pollinator plantings, greeted me. This vibrant display of color was absolutely bursting at the seams with plants. There was an amazing variety of examples, which included annuals, perennials, and native plants. Did you know that as much as these blooms are attractive to our eyes, they also help to attract useful pollinators to LGBG?

The garden’s designs and coloration are meant to draw in butterflies, hummingbirds, bees, and other important pollinators with bold colors, interesting textural contrast, and plants that are heavy, long-season bloomers. Like them or not, bees and their flying-bug brethren are key to the survival of three-quarters of the world’s plants. At LGBG the plantings are in brilliant masses, wonderful and full of color, with the visual impact captivating not only passing visitors, but the pollinators that fly overhead. I was told that these layouts were designed with the knowledge that pollinators view the world differently than human eyes. Because bees can’t see red, they prefer violets, as well as yellows and blues. As for their favorite shades, butterflies especially love yellows, oranges, reds, and pinks, while hummingbirds prefer blues and reds. As you walk through the gardens, you’ll see these colors scattered like kaleidoscopes throughout.

When you finish walking through the outdoor gardens, visit LGBG’s stunning classical domed conservatory. Referred to as the “Jewel of the Garden,” it houses an orchid collection as well as an annual butterfly exhibit (May–October). The conservatory houses exotic and unusual plants from around the world and features beautiful seasonal displays. It can also boast that it’s the only one of its kind in the mid-Atlantic.

With something for all ages and interests you’ll delight in the opportunity to wander through more than a dozen themed gardens including a Rose Garden, an Asian Valley, Woodland Paths, a Cherry Tree Walk, and a Children’s Garden with an enormous interactive tree house. Pathways will draw you to parts of the garden that will charm you around every turn.

LGBG has more than 50 acres of absolute beauty and is located on property that was at one time Powhatan Indian hunting grounds and owned by Patrick Henry. If you’re interested in history, you’re sure to enjoy the garden’s unique story. Before you end your day there, enjoy one of the two restaurants, The Garden Café or the Robins Tea House, both offer stunning settings and a menu inspired by the season’s freshest flavors and ingredients.

Best of all, there’s not a month that goes by that there’s not something in bloom at LGBG. Check their website before your visit, so you’ll know what to be on the lookout for on your garden adventure!
Celosia is an often-overlooked, pollinator-friendly plant enjoyed by honey bees and a vast assortment of native bees and beneficial wasps. Thriving in the summer heat and humidity and tolerating drought, Celosia is simple to grow. This annual is pest-free and provides months of easy-to-care-for color in the garden. Celosia also can easily be brought indoors as long-lasting cut flowers, performing well either fresh or dried.

When choosing Celosia for your garden, be sure to read the description, as cultivars can range from 6 inches to 6 feet tall. The compact forms look good in the cell-pack; however, once placed in the landscape, they tend to be short-lived. Look for cultivars that grow 10 inches or taller for longer enjoyment. Celosia look great combined with sun loving plants like ornamental peppers, lantana, purple fountain grass, and zinnias.

Celosia come in three main types based on flower shape: wheat, plume, and crested. Wheat type Celosia flowers are narrow spikes that expand throughout the summer. The emerging flowers develop at the tip and are the most colorful. As the older flowers on each spike age, their color fades giving the flower heads an attractive two-tone appearance. Plume shaped flower heads are distinguished by upright, feathery pyramids reminiscent of spires on a gothic cathedral. Crested shaped Celosia form a wavy mound on top of a fan shape. This form is frequently referred to as cockscomb, as it resembles a rooster’s comb. My favorite cultivars just happen to be one of each form, and all three are All-America Selection (AAS) Winners.

Best of the Best
‘Asian Garden’ is the newest Celosia to win an AAS award (2017). This wheat type Celosia produces fiery fuchsia flowers that age to light pink. Flower spikes can reach more than 9 inches long by summer’s end. These well-branched plants have a bushy form reaching 30-40 inches tall and 18 inches wide, and they produce a profusion of flowers until a killing freeze. Even after the plant has died, it remains attractive for several more weeks in the garden. I recommend planting them 14-18 inches apart in groups of five or more. While the flowers themselves are spiky, the overall effect is billowy. The plant’s long stems and floral spikes make an excellent addition to any cut or dried arrangement. I have grown at least fifty different Celosia cultivars and I have never seen one attract as many bees and beneficial wasps as ‘Asian Garden’. It is a pollinator magnet!

After winning the prestigious All-America Selection award more than fifteen years ago, the ‘Fresh Look’ series of plume type Celosia is still a staple at UT Gardens, Jackson. The series is so named because it has the appearance of a fresh bouquet all summer. The flowers do not brown as they age, and new foliage and flowers grow over the old blooms on strong lateral branches, eliminating the need for deadheading. Robust plants with light green foliage produce feathery plumes in abundance on plants that are 12-18 inches tall and wide. The plumes range from 3 to 6 inches tall and 2 to 4 inches wide with the central plume often growing larger than the rest. Overall, they have a neat and tidy appearance. The four colors in the ‘Fresh Look’ series—red, yellow, orange, and gold—work well woven into the garden beds as a living tapestry providing a soft, layered texture. ‘Fresh Look’ is a favorite for fresh cut floral arrangements, especially late in the season when other flowers are looking tired. Every year you will find at least one of the series growing in the UT Gardens, Jackson, and some years all four.

A 1997 AAS Winner, ‘Prestige Scarlet’ produces numerous 2.5- to 3.5-inch crested heads scattered about on well-branched plants. The flower heads are scarlet, velvet-like mounds set amid beds of lush, green foliage. Plants grow 12-18 inches tall and wide and look great planted in groups of five or more when planted about 12 inches apart. ‘Prestige Scarlet’ has relatively short flower stems but still works well in small fresh or dried arrangements.

Where to Start
Celosia are easy to grow from seed and readily available from catalogs. Sow seed indoors six weeks before the last anticipated frost. Lightly cover the seed and expect germination to occur around ten days. Be sure to provide supplemental light to prevent the seedlings from becoming leggy. Outdoors, seed can be started in pots after the danger of frost has passed or direct sow. Celosia enjoy full sun and perform well in fair to good garden soil as long as there is adequate drainage. Some cultivars reseed readily but are easily pulled up where not desired. The Celosia cultivars discussed, as well as others, are perfect carefree color for busy gardeners.
TOP: Celosia ‘Asian Garden’

LEFT: Celosia ‘Fresh Look Gold’
1. The 2019 Color Garden was spectacular all season. Sponsored by Proven Winners, the garden was arranged in blocks of color demonstrating the wide variety of flower and foliage color available. The yellow section is with Lantana Luscious Lemonade in the foreground.

2. Adopt-A-Spot volunteers Andrea McGinn (left) and Cori Holmes (right) hard at it deadheading baptisia.

3. As part of our Organic Edible Garden Series students learned to extend the harvest season using floating row covers.

4. Left to right, Vicki Smith, Pat Collins, and Roseanne Smith maintain social distance while renovating the old HGTV Garden into our exciting new Monarch Waystation Garden.

5. What an outstanding display of creative genius we had with our summer-long Art in the Gardens Wings of Wonder display! Staff lined the artwork up one final time for our live auction. Artists donated their time, talent, and the pieces with all proceeds benefiting the Knoxville Garden.

6. Mallards often mate for life. We have seen this couple return for the past several years to our wetland garden, a sure sign that spring has arrived.

7. It is always good to see students utilizing the UT Gardens for a study break. These two students found our Great Lawn to be the perfect spot for an afternoon picnic.

8. Belle the Princess enjoys learning about seeds by doing a seed mosaic craft at our Bewitching Beasts event. Local food allergy nonprofits and physicians sponsor this food-free Halloween event.
1. The UT Gardens, Jackson, trials nearly 200 varieties of ornamentals, vegetables, and herbs. Here, Carson Brown collects data on one of our 2019 Proven Performers, Suncredible—a dwarf sunflower that produces a profusion of bright blooms all summer.

2. Jason Reeves recently received the Director’s Award for Outstanding Professional Service, given to exceptional UT AgResearch employees. Reeves is pictured here with Bob Hayes, director of the West Tennessee AgResearch and Education Center, who described Reeves as the “heart and soul” of the center’s ornamental horticulture program.

3. What a view! Even in the heat of summer, the UT Gardens, Jackson, provides lush garden scenery.

4. Thanks to Madison County Master Gardeners, the UT Gardens, Jackson, has a beautifully updated sign welcoming guests as they arrive.

5. Last year nearly two dozen pots flanked the walkway of the West Tennessee AgResearch and Education Center creating a colorful and inviting entrance while providing visitors with unique container gardening ideas.
1. Young visitors spot a Black Swallowtail caterpillar while exploring in the KinderGarden, a designated Nature Explore Outdoor Classroom.

2. Caterpillars and butterflies are found in abundance at UT Gardens, Crossville. This caterpillar was predictably found on Asclepias, or butterfly weed, in the native plant garden. The chrysalis was a rare find in the KinderGarden. The adult monarch was spotted on a Buddleia, or butterfly bush, in the butterfly garden.

3. I’m not sure which shines more in this photo, master’s student Amani Khalil or Helianthus occidentalis! She and research specialist Sara Collins collected insects for pollinator health research lead by Laura Russo, assistant professor in the Department of Entomology and Plant Pathology. Eight plots are in various locations at the Plateau AgResearch and Education Center, and 905 of the 1,652 pollinators collected across all research sites were collected here.
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.
Pollinator insects (bees, wasps, ants, beetles, flies, midges, mosquitoes, moths, butterflies, skippers) are essential to the production of most fruit and vegetable crops and to many other flowering plants. What steps can we take to attract and protect pollinators and other beneficial insects and mites (predators or parasitoids) in the landscape?

First plant a variety of flowering plants (flowers, flowers everywhere) to serve as pollen and nectar sources for these insects. Not all flowering plants bloom at the same time of the year. Thus, use many different types of plants in the landscape so that there are plants blooming from early spring through the fall. Consider planting groups of the same plant instead of just one. This strategy will make it easier for the insects to find substantial sources of pollen and nectar in discrete plantings throughout the growing season.

Once we have the insects in our landscapes, we need to take good care of them. Always be judicious in the use of insecticides or miticides and never spray blooming plants. If an insecticide spray application is warranted, only apply when the air is still to minimize spray drift. If spraying a tree or shrub with flowering plants growing beneath or nearby, cover them with an opaque tarp until any drift has settled and dried. If turfgrass needs to be sprayed for white grubs, cutworms, armyworms etc., be sure to mow first to clip off the flowers of any broadleaf weeds. This will keep the pollinators from venturing into the spray zone during and after applications for at least a day or two. These simple practices will go a long way in protecting pollinators and other beneficials.

There are differences in insecticides concerning their toxicity to non-target insects and mites. Bt (Bacillus thuringiensis) kurstaki or Bt aizawai insecticides are only toxic to lepidopteran caterpillars. Thus, pollinators and other insects are not harmed when these insecticides are used. Conversely, the widely used synthetic pyrethroid class of insecticides are toxic to most types of insects (broad-spectrum) and they have a relatively long activity or residual on sprayed plants. Thus, the use of pyrethroids and other broad-spectrum insecticides should be used sparingly in the landscape.

There is some concern with using a class of insecticides called the neonicotinoids on flowering plants. The insecticide moves systemically into the plant through the roots, stems/trunks or leaves. Even when used prior to bloom according to the insecticide label, minute but still significant residues of some of these neonicotinoids can end up in the nectar or pollen. Thus, it is often prudent to limit the use of neonicotinoids to one or only a few plants in the landscape. Also, the exposure of pollinators to neonicotinoids can be reduced by waiting to spray until after bloom. If a neonicotinoid is used for turfgrass insect control and flowering plant beds are adjacent to the lawn, leave a 2- to 3-foot band of untreated turfgrass adjacent to the plant beds.

Providing a beautiful landscape that will attract, protect, and support pollinators and other beneficial insects and mites is a worthy goal. For more information, see UT Extension publication W 855 Initiating Pollinator Stewardship in the Nursery, Landscape and Garden Center at extension.tennessee.edu/publications/Documents/W855.pdf.
Joan Worley, Tennessee Extension Master Gardener, Blount County

BOOK REVIEW

Seeds, Stories, and Soul

In 2017 PBS aired a documentary film, Deeply Rooted: John Coykendall’s Journey to Save Our Seeds and Stories. John, a noted seed finder and saver, has been making notes and sketches about human and agricultural goings-on in Louisiana’s Washington Parish since 1973, and the journey in the title is both literal and figurative. His home is in Knoxville; his work is in the garden at Blackberry Farm in Walland. But every fall, he heads to his home away from home in Washington Parish. When I saw the documentary, with illustrations from his journals, more than 100 of them, I thought surely he’d make a book of his notes and drawings. Well, he has, and then some.

Preserving Our Roots: My Journey to Save Seeds and Stories by John Coykendall with Christina Melton (Baton Rouge: Louisiana State University Press, 2019) is a one-off, not unlike its author. John’s undergraduate and graduate education was in art, and Preserving is full of his art. It also embraces agriculture, history, memoir, seed saving and preservation, philosophy, lore and language, sociology, farm culture, and good country cooking—with lots of recipes. Along with heirloom seed, all these years John has been collecting folk ways and wisdom, chiefly from older farmers in the parish, and writing them down, on the spot, exactly as he hears them.

The first part of the book, “Seasons of Life,” is John’s philosophy, the whys and wherefores of his life’s work in seed saving. “Seeds represent an unbroken chain of our collective heritage and traditions . . . a gift our forebears have handed down to us.” His reflections flow through the chapters that follow, based on the seasons of the year. He writes with admiration about the people and the way of life, about the Unknown Pea, sunsets, green crab apples, Ruthie Mae Graves’s recipe for cornbread, mules, butter beans, and more. And it all hangs together, seamlessly.

Sarah Hackenberg’s excellent color photographs of life in the parish—people, food, seeds, and close-ups of John’s journal pages—are on almost every page. The journal entries make beautiful collages on the end pages, too. Photos, book design, and color make this book a beauty. John’s evocative text and the quoted remarks of the old farmers were the heart of the story for me, though.

“Back in them years all the land was in cotton an corn. You didn’t see fields all growed up like they are today, them fields was yor livin, you did’n have no other way ah makin it. When you made a dollar, that dollar was hard come by, an they wadn many dollars’t be made.”

“If you didn’t shoot it out of the tree, fish it out of the river, or dig it out of the ground, you didn’t have it.”

“Yesterday’s gone and tomorrow’s not here yet. All I can handle is today, right now. If it’s something you can change, do it. If you can’t, walk off and let it be.”

Seeds and all, it’s the rural South, what’s left of it. John Coykendall found a remnant of it to treasure and to hold what he could of it in his journals. Yes, peas and beans are there, but in essence, Preserving Our Roots is a beautiful homage to an earlier time, a time of simple virtues, hard work, and neighborly sharing.
Horticultural Therapy

Derrick Stowell, UT Gardens Educator, Knoxville
P.J. Snodgrass, Horticultural Therapy Education Assistant, Knoxville

Ever have an experience in life where many, seemingly distant concepts, just come together? A synergy is formed that is much more powerful than the sum of the parts. The Horticultural Therapy Program at the UT Gardens is a wonderful example of many elements combining to create a dynamic synergy that benefits students, staff, and program participants.

Horticultural therapy uses plants, soil, seeds, and learning to provide an enriching experience for those who participate. Plants have the ability to heal and bring people together. The UT Gardens Horticultural Therapy Program uses plants to not only improve health and well-being in the community, but also uses plants and gardening activities to give UT students internships and real-world experience. Since 2012, the UT Gardens Education Program has provided twenty-one practicum and internship opportunities for students from majors in plant sciences to child and family studies. This connection helps to strengthen the collaboration with the UT Institute of Agriculture (UTIA) and the UT Knoxville, campus. One important collaboration is between the UT Gardens and the Department of Kinesiology, Recreation and Sports Studies on the Knoxville campus.

The Horticultural Therapy Program currently serves sixteen facilities in the Knoxville area. The program involves UT Gardens’ staff and students visiting assisted living, memory care, and senior living facilities twice monthly to provide a horticultural experience that can reduce blood pressure, improve mood, enhance social interactions, and refine motor skills. At the same time, the participants learn about gardening and plant care or start vegetables for a garden in their own facility. These are important parts of the elements of the resulting program.

Another important element of the Horticultural Therapy Program is students. So far, the program has given nine therapeutic recreation students hands-on, practical experiences in planning and implementing therapeutic garden programs. These efforts align closely with announcement of the reunification of UTIA and UT Knoxville last year. Internships also give Derrick Stowell, education and Horticultural Therapy Program administrator, an opportunity to share what he has learned as a professional and help train the next generation of therapeutic recreation professionals.

“Throughout my time interning at UT gardens, I have loved experiencing the positive outcomes that horticulture therapy provides to individuals residing in assisted living and memory care facilities,” said Hanna McClain, a spring 2020 therapeutic recreation intern.

Nabreyah Howard, also a spring 2020 therapeutic recreation intern, added, “Recreational therapy includes improving lives one activity at a time and that’s exactly what I feel like we get the chance to do at UT Gardens.” Hanna and Nabreyah have worked with a vocational student from Tennessee School for the Deaf as well as in the other facilities mentioned.

Synergy is the “the interaction or cooperation of two or more organizations, substances, or other agents to produce a combined effect greater than the sum of their separate effects.” (Oxford Dictionary, 2020). In the case of the Horticultural Therapy Program at UT Gardens, synergy was created with the combined efforts of Derrick Stowell and his qualifications; inclusion of students from the Department of Kinesiology, Recreation and Sports Studies; the therapeutic benefits of gardening; and the desire of employees at senior facilities to provide beneficial activities for their residents. In this situation, everyone involved is enriched by the experience.

Future goals for the internship program are to increase funds to support paid internships for students who want to gain practical experience with our therapeutic gardening programs.
TOP PERFORMERS:

Angelonia ‘Serenita White’ (PanAmerican Seed)
Calibrachoa Superbells Dreamsicle (Proven Winners)
Jalapeño ‘Emerald Fire’ (All American Selection)
Cuphea ‘Honeybells’ (Ball FloraPlant)
Evolvulus Blue My Mind (Proven Winners)
Helianthus Suncredible Yellow (Proven Winners)
New Guinea Impatiens Bounce and Big Bounce series (Selecta)
Petunia Supertunia Sharon (Proven Winners)
Portulaca Mojave Red Improved (Proven Winners)
Nemesia Aromance Pink (Proven Winners)
Coleus FlameThrower Salsa Verde (Ball FloraPlant)
CONSUMER FAVORITES:
Calibrachoa Superbells Double Amber (Proven Winners)
Sweet Pepper ‘Just Sweet’ (All American Selection)
Gaillardia Heat it Up Yellow (Proven Winners)
Lantana Luscious Goldengate (Proven Winners)
Tomato ‘Artemis’ (PanAmerican Seed)
Basil ‘Everleaf Emerald Towers’ (PanAmerican Seed)
Geranium Galaxy Pink (Ball FloraPlant)
Salvia interspecific ‘Big Blue’ (PanAmerican Seed)
Coleus ColorBlaze Wicked Witch (Proven Winners)
Zinnia Zesty series (Ball Ingenuity)

BEST IN SHOW:
Calibrachoa Superbells Blackcurrant Punch (Proven Winners)
Pepper ‘Mad Hatter’ (All American Selection)
Gaillardia Heat it Up Red (Proven Winners)
Pentas Sunstar Lavender (Proven Winners)
Salvia farinacea Unplugged So Blue (Proven Winners)
Scaevola Whirlwind Blue Improved (Proven Winners)
Sweet Potato Vine Sweet Caroline Red Hawk (Proven Winners)
Coleus FlameThrower Salsa Serrano (Ball FloraPlant)
Marigold ‘Big Duck Gold’ (All American Selection)
Zinnia ‘Holi Scarlet’ (All American Selection)
Petunia ‘Tidal Wave Red’ (All American Selection)
Crossville

Shalena Durkot, Garden Coordinator and Horticulturist

For most of her life, Susan Hufford’s passion centered on horses and equestrian pursuits. Five years ago, she moved from her farm just north of Cincinnati, Ohio, to a neighborhood on the Cumberland Plateau. Missing farm life, she decided to take on a secondary interest in landscaping and gardening. Susan discovered classes in the Gardens at the Plateau AgResearch and Education Center, and from there, the Tennessee Extension Master Gardener training program. She graduated as part of the 2018 class and quickly took interest in working in the Gardens. Susan has volunteered to learn proper gardening practices and plant identification. She was one of the first to sign up for the Adopt-a-Spot program and maintains the perennial garden pictured here. It is centrally located, well utilized during school field trips, and one of the best kept, thanks to her dedication. Susan is self-motivated and often volunteers to help with other areas in the Gardens. She recently joined our Umbrella Committee, supporting communication between the AgResearch Center and Master Gardeners. We are lucky to have a dedicated volunteer like Susan and pleased she has found her place “back working on the farm.”
In February, a record number of more than 100 volunteers attended our annual Volunteer Celebration and Spring Kickoff. The event was a recognition of their 2019 efforts, which resulted in over 5,400 hours logged, an increase of more than 60 percent compared to the previous year.

Volunteers heard from Director Emerita Sue Hamilton about how the Gardens were impacted by volunteers during her career and how excited she is to transition from faculty to volunteer.

Interim director James Newburn announced exciting staff realignments. Alice Kimbrell, long-time student worker and creator of the Adopt-a-Spot Program, is now volunteer coordinator. Beth Willis, who was previously in the position, received a standing ovation for her twelve years administering the program. Beth will continue managing Gardens membership, e-newsletter, and website.

Each year at this event the Gardens awards three volunteers who have shown exemplary service. Volunteer of the Year award was given to Vickie Smith, Adopt-a-Spot Volunteer of the Year award to Maggie Karnis, and Distinguished Volunteer to Michelle Reimert, pictured here with Beth Willis at the luncheon.

We thank all of our volunteers for their continued support of the UT Gardens. Without them, we would not be where we are today.

When asked why he does it, Barnhill touts the many benefits of volunteering—being outdoors, learning about plants, and making many new friends with a shared love of gardening. It makes weeding around the cactus all worthwhile!
A dark drawer at my house contains explosive material. The explosion will occur this summer, in slow motion and in a range of hot colors. It is one I have witnessed for many summers, and it begins in a number of paper envelopes that bear scribbled names and a date. A few of the names are cosmos, gloriosa daisy, and Lemon Queen sunflower. Scattered among the home packaged seeds are a few new purchases in professional sleeves, but usually even these are trusted old favorites that promise a new tint or growth habit.

I learned the hard way that many plants are very difficult to grow from seed, so I don’t try those anymore. I’ll let someone else figure out the tricks to get them to germinate, and be happy to pay the grower for the trouble!

Failing with so many over the years helped me glean out several that are truly easy—some so easy that I don’t have to re-plant them at all, as they often reseed on their own. Still, I save a good number as insurance, and to spread the joy to new sites, or to give to friends and family.

While they could be started in a flat and transplanted into the garden after they are up, I prefer to sow these where I want them to grow. When started in ground, they really take off and rarely require any watering for establishing, while transplants require more early attention. The downside is that in-ground germination is sometimes unpredictably erratic or spotty, so I plant more than I need and thin them out once past the cotyledon stage.

It might seem best to get the soil beautifully prepared and evenly moist for best germination, but again and again, reseeding volunteers have demonstrated their preferences for rough dry places, in those spots where mulch has broken into small pieces, or in the gravel of my walkways and patios. In fact, these gravelly spots are by far the most populated. The scientist in me wonders why I don’t find as many in the “better” soil. Is it too much moisture? Do the germinating seeds fall victim to organisms in that richer soil, or is it that the gravel hides the seeds from birds that might eat them? Maybe it is as simple as differences in pH. This love for gravel works to my advantage around the distant mailbox far from any water source.

Any cosmos is a good candidate but over the years, I’ve come to prefer *Cosmos sulphureus* over *C. bipinnata*. My fondness for pink flowers had me favoring the latter originally, but the sturdier growth habit of the former has since changed my mind. I still like the pink and white, even reddish offerings of bipinnata but they often slump to the ground, or lean onto neighboring plants. The sunny yellows and brilliant orange hues of the sulfur cosmos arch from plants that stand their ground, creating an effect that always make me think of the word spangle. This habit causes them to dance in any breeze on the long narrow stems. Both make good candidates for use as cut flowers. They are reliable reseeders in my garden.

Birds prove that sunflowers are easy. Huge plants launch from the soil under my feeders and in the surrounding beds where careless birds have dropped the seed. I usually leave them in place to enjoy the pollinators crawling across the broad flower faces and to watch the finches land atop to pluck the ripening seeds. The big bloomed forms aren’t my favorites for cutting though, as the enormous size will topple an ordinary vase. Branching forms offer numerous bold but smaller flowers per plant and over a longer period of time. ‘Lemon Queen’ is a favorite, offering a pale yellow tone that combines beautifully with other flower colors, where a golden mustard tone would clash.

Gloriosa daisy *Rudbeckia hirta* is another great cut flower easily grown from seed. This plant is sometimes advertised as perennial, which in our region is not true, though some other species of Rudbeckia surely are. I can see why there might be confusion, as gloriosa daisies often reseed where they are planted. The bloom season is not as prolonged as the cosmos, but the individual flowers are extraordinarily striking. ‘Indian Summer’ was the first cultivar I fell for, but I’ll plead the case for ‘Prairie Sun’, and ‘Autumn Colors’. After all, they can be enjoyed for the price of a pack of seeds!

Plant these bountiful blooms for your own pleasure and for the great benefit they offer to our pollinators. Scratch up a spot of loose soil, lightly rake them in and walk away. If you don’t succeed it might be because you tried to pamper them.
The Campus Buzz

Holly Jones, Horticulturist and Garden Educator, UT Gardens Knoxville

We gardeners know that pollinators are important for food production. Most of the world’s food crops rely on animal pollination to produce fruits, grains, and seeds. But have you considered the fact that almost all wild plants rely on pollinators to reproduce as well? These are the plants that produce the oxygen we require, help regulate the water cycle, stabilize our climate, supply medicinal compounds, and provide habitat for wildlife and raw materials for industry. Simply put, humans need healthy and diverse ecosystems to survive and thrive on this planet and healthy ecosystems require the presence of pollinating animals like bees, wasps, butterflies, birds, beetles, and small mammals. Many of these species are in decline because of human activities such as habitat destruction and alteration, introduction of exotic invasive species, and misuse of pesticides.

While we humans have created these problems, we also have the power to create solutions. One of the most effective things we can do is to plant gardens filled with predominately native pollen and nectar producing plants. How great is that? We can help by growing flowers! From large-scale organizations like the Pollinator Partnership (pollinator.org) to individual efforts by home gardeners, people are beginning to take responsibility.

At the UT Gardens, Knoxville, we are taking part in several pollinator conservation initiatives. In early 2019 we began working with a campus committee to establish UT Knoxville as an official member of the Bee Campus USA program. Jennifer Tsuruda, assistant professor in the Department of Entomology and Plant Pathology and honeybee specialist for UT Extension, chairs the committee, which is a joint effort of the UT Institute of Agriculture and UT Knoxville. The committee is made up of faculty, staff, and students and includes representatives from UT Facilities Services, the Office of Sustainability, the Department of Forestry, Wildlife and Fisheries, the UT Gardens, the School of Landscape Architecture and the Tennessee Extension Master Gardeners of Knox County. As a member of the Bee Campus USA program, we are joining nearly 100 educational institutions across the country with the shared goals of advocating for pollinator health, creating and maintaining functional pollinator habitats on our campuses and providing community education. Bee Campus USA is an initiative of the Xerces Society (xerces.org) which is a nonprofit invertebrate conservation group.

Bees, which are considered one of the most effective group of pollinators, have been hit especially hard by environmental pressures and disease. Imported European honey bees, which we all know and love, are affected in great numbers by colony collapse disorder. Likewise, seven species of native bumblebees are now on the endangered species list. Our modern agricultural system relies heavily on managed honey bees as well as wild native bees. Effective conservation efforts are best guided by solid research findings. A relevant question to ask is, which plants are best for bees? With 4,000 native bee species in the US, many of which have specialized relationships with plants, scientists have their work cut out for them to answer this question. Laura Russo, assistant professor in the Department of Entomology and Plant Pathology, is currently studying the relationship between pollinator health and nutrition with native flower plots replicated at four sites across the state—including plots at the UT Gardens in Knoxville and Crossville as well as the UT Arboretum in Oak Ridge.

According to Russo, the preliminary data from 2019 shows a total of forty-four insect families in six scientific orders visited the research plants. Seventy-five percent of the total insects were native wild bees. Each plot has a different combination of plants, and the next phase of the research will look at the nutritional profiles of the nectar and pollen and how that may affect pollinator preference. Keep an eye out for these plots as you visit the Gardens for a chance to see research in action.

UT Knoxville is also excited about the upcoming installation of a new butterfly garden. The 3,400-square-foot Monarch Waystation was inspired by our participation in the Bee Campus USA program and designed in accordance with MonarchWatch.org, which seeks to preserve threatened monarch butterfly populations. Funded by the UT Student Green Fee and managed by UT Gardens horticulturist and volunteer coordinator Alice Kimbrell, this garden will feature regionally native milkweed plants required by young monarch caterpillars as well as abundant nectar and pollen sources for adults. By including a wide variety of mostly native perennials, grasses, trees, and shrubs, the garden will be an attractive resource not only for monarchs but also for many other pollinators. We look forward to sharing the space with humans as well.
TENNESSEE

Gardening Legends

Harald and Alex Neubauer

Plant Propagators and Nurserymen

Alex Neubauer says he sees a lot of promise in new hybrid redbud cultivars from Denny Werner of North Carolina State University. ‘Pink Pom Poms’ is one of the eye-catching introductions.

With an exotic animal collection, world travels, and friendships with the likes of Martha Stewart, nurseryman Don Shadow of Winchester, Tennessee, catches a lot of attention. And when it comes to his introductions of new and novel plant material, the attention is definitely well deserved.

What the plant-loving public may not know is ten minutes down the road from Shadow is another nursery that’s also acclaimed in the industry. Hidden Hollow Nursery in Belvidere, Tennessee, is a specialty bareroot liner operation whose reputation resides on the stellar quality of the woody ornamentals it produces for the wholesale market. Another cornerstone of its reputation is propagating and growing new plant material.

Harald Neubauer founded Hidden Hollow in 1983. Over the years, he became known for his ability to coax even the orneriest plant material to propagate. Amazing to many, Neubauer propagated the plants in the field rather than in controlled indoor conditions.

His success led plant collectors to ship scion wood to Hidden Hollow in the belief that if Harald couldn’t propagate it, no one could. Indeed, the famed horticulturist Michael Dirr once remarked that Harald could put roots on a telephone pole.

Harald’s expertise in propagation, which includes the technique of introducing the bud of a desired plant into the bark of an understock, saved many a fragile find. Through drip irrigation, attention to detail, and savvy, a bud at Hidden Hollow has been known to grow into an 8-foot specimen across one growing season—an achievement that impresses even industry insiders.

Although Harald has officially retired, he still can be found working in the fields on most days. Son Alex and wife Amy now operate the family nursery and carry on its traditions. Today Hidden Hollow produces more than 200 cultivars of woody ornamentals on 20 acres. The nursery buds and grafts nearly 100,000 plants each year. Approximately 200,000 plants are growing at any one time. The bulk of production is based around Cercis canadensis, Cornus florida, and Cornus kousa. Others include species such as Chionanthus, Gingko, Hamamelis, Magnolia, and Taxodium. The nursery annually produces approximately 5,000 budded Nyssa sylvatica in 2- and 3-gallon containers. Hidden Hollow has introduced and co-introduced several noteworthy cultivars, including Liriodendron ‘Little Volunteer’, Magnolia virginiana Green Mile, and Green Gable Tupelo.

“We are also excitedly building stock of a new bold, red-flowering, powdery mildew resistant release from UT’s dogwood team named ‘Erica’s Appalachian Sunrise.’ This will join the other four in UT’s Appalachian series,” Alex says.

Hidden Hollow continues to deliver on its priority to be a consistent supplier of quality, dependable new plants. “Amy and I are proud to be involved in such a great industry and grateful to interact with such a diverse group of people across the nation.”
The eye-popping, multi-colored foliage of Flame Thrower, and the bright yellow weeping Golden Falls are two others and are among second wave of Werner introductions that hit the wholesale market just this spring. Alex is propagating and testing more unnamed redbuds with unique foliage, architecture, and stature that Werner will release in the next few years.
The late Angela Mullikin was a long-time member of the Memphis Herb Society. The petite Italian American was known for her wonderful cooking and several of her recipes are featured in the herbal cookbooks the society has published. While her recipe for fresh tomato pasta sauce is not among those, it’s one that is cherished by my family. More a technique than a recipe, the pasta sauce allows you to capture the taste of homegrown tomatoes and basil at the peak of summer, then freeze to enjoy long after summer produce is gone.

TIPS

Garlic is an important ingredient, although you could prepare the sauce without it. If you’ve never grown garlic, it’s one of the easier vegetables to cultivate. Plant the individual cloves in loose, well-drained soil in late October through November. This timing will allow for the 150 to 200 days required by most garlic varieties to mature to full size heads in late May to early June of the following year. Both hardneck and softneck varieties can be grown in most parts of Tennessee. The main differences between the two are flavor intensities and the edible spring flower buds known as scapes which only appear on hardneck varieties.

A chef’s slicing technique called chiffonade is popular for mincing leafy herbs and other greens. Stack the leaves, then roll them into a tight cylinder like a cigar. Use a sharp knife to slice across the roll, cutting the leaves into thin ribbons.

FRESH TOMATO PASTA SAUCE

6 large vine-ripened tomatoes, or 10 medium size or their equivalent

¼ cup olive oil

5 large cloves garlic, peeled

½ cup basil leaves, rinsed, dried, and sliced thin

Freezer containers (We use 9-ounce containers.)

When ready to use: Canned tomato sauce

Bring a large pan of water to a boil. Drop in whole tomatoes. When their peels crack, remove the tomatoes to a sink of cold water. Slip the peels, cut out cores, and squeeze out the seeds and juice. Coarsely chop the tomatoes and set aside.

Peel the garlic and slice thinly or mince with a garlic press. Rinse basil leaves and pat them dry. Then chiffonade into thin ribbons. Set aside.

Place oil in a Dutch oven or large pot over medium high heat. When the oil is hot, add garlic and simmer only until fragrant. Do not let garlic brown. Quickly add the chopped tomatoes and bring to a boil. Remove from heat and cool for several minutes. Stir in the basil. Continue cooling until about lukewarm. Pour the sauce into small containers and freeze.

When ready to use, remove from freezer and put the frozen sauce into a pot with an equal amount of tomato sauce. Place over medium heat. Once simmering, stir occasionally to help thaw the frozen sauce. Meanwhile heat a pot of water for the pasta. By the time the pasta is done, the sauce should be piping hot. If your freezer cartons are significantly larger than nine ounces, you may want to give the sauce a head start over the pasta. Season to taste with black pepper and grated cheese.
With slightly overcast blue skies, temperatures hovering just above 60, and a rainbow of blooms, Friday, April 24, 2020, is a perfect spring day.

Alice Kimbrell, volunteer coordinator, stands in the middle of the nearly deserted UT Gardens, Knoxville. She holds a camera and talks directly into the lens. “Hey everybody! Alice here, and today I’m going to be talking about our Iris collection for our Friday Field Trip.”

Across the state—but also simply a new browser page away—UT Gardens, Jackson, staff share a free lecture on annuals for Tennessee landscapes, while the UT Gardens, Crossville, staff keep a steady stream of links to resources on their Facebook page.

Normally, field trips to the gardens aren’t filtered through a screen. Normally, a class on annuals involves pots and seeds and an instructor close enough to walk over and help.

Normally.

It’s a word we’ve heard a lot recently. A return to normalcy, a new normal, rejecting what was normal. Normally, the three UT Gardens locations rely on summer camp tuitions; ticket sales for garden classes; and fees from schools or nursing residences, rentals, plant sales, and other special events. Donations and state dollars are large slices of the budget pie, but funds raised through these activities purchase fertilizer or subsidize the cost of a lawn mower.

During the COVID-19 global pandemic the world is adjusting to find that new normal.

For the Gardens staff, that means finding innovative ways to keep accessible the beauty and educational opportunities across the state. It’s why Kimbrell strolled through the Knoxville location’s iris collection with a camera in hand and why Jackson and Crossville locations are ramping up accessible digital content. Even many of the summer camps have transitioned to online, as well as gardening classes and other programming.

“Outdoor spaces are even more important with the transition to the new normal,” says Tom Looney, director of advancement. “We have made strides in making the resources of the Gardens available during this time, and the community continues to visit the Gardens at all three locations. However, we cannot make this possible without the support of our donors.”

With the annual UT Gardens Gala cancelled for this year and other fundraising and revenue opportunities diverted, direct donations to your local Gardens location is vital to its success.

“Since we have had to cancel UT Gardens and outside events as well as educational programming, our revenue streams have taken a significant hit,” says James Newburn, interim director of the UT Gardens, Knoxville. “That is why we are now more than ever dependent on new and renewed memberships and donations.”

If you would like to support the ongoing mission of making teaching, research, and outreach available to the citizens of Tennessee, visit together.tennessee.edu/utgardens to directly support your local UT Gardens location.

To directly support your local UT Gardens location visit together.tennessee.edu/utgardens
Late in January 2020, headlines across New Zealand and a few other countries read “Swiss Cheese Plant Sells for $5,000 ($3,200 US).” Journalists were quick to report on the price paid for a houseplant. The plant, *Monstera deliciosa* ‘Albo Variegata’ a variegated version of a relatively common houseplant was sold online after 182 bids.

Although *Aloe vera* often trends towards the top of the most googled houseplants every year, *Monstera deliciosa*, a plant grown primarily for its unique foliage, has easily become the houseplant of the year. Native from Mexico south to Panama, monstera, or Swiss cheese plant, has captured the imagination of a new set of gardeners.

If you keep up on social media networks like Instagram you can search #monstera and see more than 1 million photos; search #swisscheeseplant and you will get another 37,000 posts. Search other hashtags like #plantofinstagram or #plantstagram and you will see photo after photo of monstera. And by the way, if you were wondering, #monsteramonday is also a thing you can post about.

Younger gardeners across the country have gotten the plant collecting bug and houseplants seem to be their obsession. This all makes sense as many younger people, particularly in cities, are apartment dwellers. Millennials (born between 1981 and 1996) seem to be leading the way in the new resurgences of houseplant popularity. A characteristic of the generation seems to be health and wellness—and many of them are finding wellness in the restorative properties of plants.

**How to Care for a Monstera**

Place indoors in indirect sunlight. Water when the top 1 inch of soil becomes dry. When watering, move to a sink, bathtub, or even outside in the shade on a warm day. Water until it starts to drain from the bottom of your pot. When you return plant to its original spot, make sure water does not sit in its saucer—this can cause root-rot. During winter months you can reduce watering as your plant is not growing as quickly. Fertilize your plant once a month between spring and summer following label directions for the fertilizer you are using. Larger leaves can collect dust and should be wiped with a damp cloth periodically.
Monstera deliciosa genus is derived from the Latin word for “monstrous” or “abnormal” and refers to the large leaves with natural holes and large plant size. The specific epithet (second part of the scientific name) deliciosa means “delicious” referring to the edible fruit which has been described as tasting like a combination of a banana and a pineapple.
This year, the UT Gardens, Jackson, will be adding some excitement to autumn. The annual gardening extravaganza Summer Celebration is changing seasons this year and will be held as Fall Celebration. And though the Fall Gardeners’ Festival at the UT Gardens, Crossville, has been rescheduled for August 31, 2021, the staff plans to host several smaller classes with limited registration this fall as guidelines allow. Check out plateau.tennessee.edu or Facebook at UT Gardens: Crossville, The Plateau Discovery Gardens for class schedules, registration, and recorded presentations. The UT Gardens, Knoxville, undoubtedly will round out the Eastern side of the state with events, too. Check out the events calendar at utia.tennessee.edu/gardens.