

IN THE

Garden

Quarterly – Spring 2021



Tulsa Garden Center
at Woodward Park

Paper Hats for Dung Beetles

By Laura Chalus, CEO, Tulsa Garden Center at Woodward Park

With a fresh pile of dung in place, researchers at a field site on the edge of the Kalahari sat back to wait for moonrise. This was the time of day when dung beetles began to emerge and search for their unseemly meals. The beetles would scurry around as fast as possible to reach their prize, roll it into a ball, and get away before rival beetles would try to rob them. But something happened that the researchers had not expected.

Testing a hypothesis that dung beetles were using the light of the moon to navigate expeditiously in a straight line back to their little beetle houses, the researchers were caught off guard as the energetic scarabs began to flock to the poo pile before the moon had even come out.

Upon realizing that these tricky bugs might have just blown their whole theory out of the water, the researchers looked up. What they

saw in that immensely black sky, washed with an infinite number of twinkling stars, was the unmistakable light of the milky way. Could it be? Were the beetles really using the milky way to effectively navigate back to their beetle abodes?

Enter the paper hats. Researchers outfitted the beetles with tiny paper hats to see if that changed how the beetles hot footed it back home along such a linear path.



Dung beetle gathering its dinner.



Tulsa Garden Center
at Woodward Park

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And lo and behold, it did. The dung beetles could no longer successfully navigate in a straight line but instead staggered around like they'd all had one too many. I'd also suspect there was a lot of poo pirates that evening as the beetles ran around helter-skelter without the use of their built-in GPS.

Science can be fascinating, while also truly bizarro, but the key to new discoveries seems to lie in our ability to adapt and overcome. Sometimes we have to resign ourselves, albeit begrudgingly, to making adjustments and modifications along the way, lest we find ourselves stumbling into a giant pile of....well, you know.



Poo pirates in action.

Spring Newsletter – March, April, May 2021

Tulsa Garden Center at Woodward Park
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SPRINGFEST *To-Go!*

Friday, April 9th, 9:00am-4:00pm
Saturday, April 10th, 9:00am-3:00pm

Come kick off the spring gardening season in Woodward Park once again with the continuation of **SpringFest To-Go!**

Shop dozens of vendors selling a wide variety of plants, garden art, and more, and talk with expert horticulturalists to solve all your gardening questions.

SpringFest To-Go will be an outdoor-only event with masks required, social distancing encouraged, and sanitation stations available to keep our vendors and guests safe.

tulsagardencenter.org/springfest

Garden World

By Barry Fugatt, Director of Horticulture, the Tulsa Garden Center and Linnaeus Teaching Garden

Safely slumbering beneath a thick blanket of Hershey-brown pine straw in my garden, dormant perennials patiently wait for nature's signal to spring back to life.

Nothing stirring, I thought as I recently peered through frost covered dining room windows at a perennial border that surrounds my back patio. Within a few short weeks, however, that will all change.

Patches of pine straw will magically begin to rise on the shoulders of awakening perennials seeking light. Colorful hostas will be among the first to send up light-hungry new sprouts. Astilbes, ferns, and coral bells will quickly follow. Weeks later the rustic brown mulch will completely disappear under a lush covering of green, gold, and red perennial foliage. And best-of-all, one of our worst winters ever will fade from memory.

I'm reminded of an Old Testament verse from the Song of Solomon that celebrates spring: "Flowers spring-up on the earth, the season of singing has come, the cooing of doves is heard in our land."

I've been hugely blessed to observe the seasonal plant cycles of birth, dormancy and re-birth play out in my garden for forty plus years. It's magical! John Denver captured the moment with these famous lyrics: "Sunshine on my shoulders makes me happy; sunshine in my eyes makes me cry; sunshine on the water



looks so lovely; sunshine almost always makes me high." And what a high it is when, like bears coming out of winter hibernation, we gardeners return to our spring gardens to again feel soothing sunlight on our shoulders.

If you are not yet a perennial plant enthusiast, I encourage you to give them a try. But be advised: perennials are addictive, much like potato chips. You can't stop with just one. Here is my short list of "can't fail" perennials.

DAYLILY—Any perennial capable of surviving unattended along a country road or in an abandoned cemetery simply must be front-and-center in my garden. I especially enjoy growing old ever-blooming varieties such as Stella De Oro, Black Eyed Stella, Happy Returns and Morning Dawn. They tend to be inexpensive and faithful performers over many years. I grow fifty plus daylily varieties. Even so, I've only scratched the surface. There are over sixty thousand daylily varieties!

PERENNIAL SALVIAS—I've lost track of all the perennial salvias I've grown over the years. They are as tough as they are beautiful and they come in many vivid flower colors: deep purple, sky blue, red, pink, and white. I'm particularly fond of the blue and purple flowering varieties. They play an important role of toning down hot red and yellow flowering perennials in a mixed border. While scores of new hybrid varieties appear on the nursery scene each spring, one can never go wrong planting the great old treasures: May Night and Blue Hill.

RUDBECKIA—I became an instant fan of Rudbeckias years ago when the variety Goldsturm first appeared. I have a large clump of long-lived Goldsturm Rudbeckias in my garden that has produced masses of bright yellow summer flowers for twenty straight years. And they have achieved this impressive record with very little care from me. Goldsturm blooms consistently throughout



Southwood

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Garden World continued

summer and early fall. It's one of only a few perennials that can match the best annuals for season-long flower production.

ECHINACEA—And of course, one simply must include sun-loving cone flowers (Echinacea) in the garden. Like Rudbeckias, they bring a season-long blessing of flowers and require very little maintenance. The long-stemmed beauties make perfect cut flowers for indoor decorating. And they are irresistible to butterflies, bees, and other pollinators. Hot new varieties hit the market each year

and one can't go wrong planting any of them. That said, I'm especially fond of the old rosy-pink flowering Magnus variety that so faithfully perform in my garden.

HOSTA—Considered by many to be the “Queen” of shade-loving perennial plants. And I take no issue with that. I proudly grow forty-plus varieties in my garden, and I lust for at least that many more. And With endless varieties to select from (well over two thousand) there is a flower color, foliage pattern, and plant size to suit any garden. While I am

reluctant to weigh-in on the “best” varieties, I can - based on first-hand experience - highly recommend the following: Dancing Queen (gorgeous yellow foliage that lasts all summer), August Moon, Empress Wu (can easily grow to six feet in diameter!) Blue Angel, and Sagae.

Barry Fugatt is Director of Horticulture at the Tulsa Garden Center and Linnaeus Teaching Garden. He may be reached by email: bfugatt@tulsagardencenter.org



Barry's Favorites at the Linnaeus Teaching Garden - Rudbeckia var. 'Goldsturm' is, in my mind, the “King of Sun-Loving Perennials.”

Tulsa Perennial Club

Perennials & More
Plant Sale



Saturday
May 1st

9:00am-1:00pm

Tulsa Garden Center, Rose Garden

The Narrow Leaf Sunflower Society

By Meredith Jones, Education and Training Manager, Tulsa Garden Center at Woodward Park

In this small plant community we all occupy, the name Russell Studebaker comes with many connotations: plant genius, cranky, witty, astute, knowledgeable, opinionated, cranky - did I already say that last one? It is a household name, not only at the Tulsa Garden Center, but Tulsa in general.

I was having wine with my Aunt Lois, who is a true plantswoman, and mentioned my friend Russell Studebaker in passing. She interrupted me with, "Oh, I know Russell. Well, I don't technically know him, but I read his articles for years."

When I came onto the scene, all of those articles were unknown to me, in addition to the history. All I knew was the man at "Let's Talk Gardening" on Tuesdays that both knew an insane amount of information about plants but also banged his cane on the table if anyone were to interrupt him. "Who is this person?" I had asked myself, impressed by his knowledge but confused by his etiquette. I didn't know at the time that I would have the true privilege of learning.

Our relationship reminded me of the animal book, "Unlikely Friendships," which shows a parakeet perched on a labrador or a monkey resting its head on a dove. All that to say, it wasn't planned, and given that it blossomed in the age of COVID when I barely saw the people I was already friends with, it wasn't practically likely. And yet, fast friends we became.

This isn't just about our friendship, but also narrow leaf sunflowers, though the two themes can't truly be untangled.

I began to visit his plant estate on 20th Avenue to take photographs for him. It was the Saint Joseph's lily that he was so fond of, and that he wrote about for our Botanic Beet, that got me there the first time. I wandered over from Woodward Park on foot, camera in hand, and did my best to capture the red and white bloom's beauty. He loved sharing his plant knowledge, as anyone who knows him can attest, and I think he recognized that day that he had a captive audience of one who was

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hungry for information. Other photo assignments began to pop up - regal lilies that needed to be captured in the morning light and orienpet lilies that needed to be photographed before the winds took them out. These photography sessions would



usually end with a sit in his sun porch where we talked first about plants and then, eventually, about life.

May held the day that I walked away with my first gifted plant. It was a fairly unimpressive clump of green that he assured me would wow my yard by October: narrow leaf sunflower. I had walked over that day with my camera in my back pack, and I remember the bounce in my step as I carried the green growing in the reused back plastic container back to my office. The bounce in my step could be partially attributed to the free plant - I am guessing most reading can relate to that - but the plant was also a confirmation. I was no longer just his photographer, but also his unlikely friend.

By June, there was a gifted clematis after I had mentioned the plant on my list of one I would like to acquire. It "wasn't his color preference," he claimed, and was mine for the taking. By July, I was no longer Meredith but rather "Grasshopper," like the

Arbor Day 2021

Join us on
Friday April 30th in
one of our favorite
spaces,
the Arboretum at
Woodward Park,
for all things trees!

More details to
come!

Six things you should know when planting a tree.



- 1. Call Before You Dig** - Several days before planting, call the 811 hotline to have underground lines located.
- 2. Handle with Care** - Always lift tree by the root ball. Keeps roots moist until planting.
- 3. Digging a Proper Hole** - Dig 2 to 5 times wider than the diameter of the root ball with sloping sides to allow for proper root growth.
- 4. Planting Depth** - The trunk flare should sit slightly above ground level and the top-most roots should be buried 1 to 2 inches.
- 5. Filling the Hole** - Backfill with native soil unless it's all clay. Tamp in soil gently to fill large air spaces.
- 6. Mulch** - Allow 1 to 2 inch clearance between the trunk and the mulch. Mulch should be 2 to 3 inches deep.

For more tree-planting tips and information,
visit arborday.org.

Source:  **Arbor Day Foundation**
90075201

The Narrow Leaf Sunflower Society continued

neophyte in Karate Kid that didn't know a thing. Of course, Russell was "Master," the all-knowing plantsman, which indeed he was. And he was right about the narrow leaf sunflower. By late October, it was glowing.

Also known as "swamp sunflower," like its name suggests, it doesn't mind hanging out in damp conditions. Knowing this, I planted it in a dip at the end of my gutter drain spout, where it happily grew to over six feet tall. The truth is, he was working on a narrow leaf sunflower article for this very newsletter, so it's only fitting that instead of explaining its admirable qualities, I let him.

*"Grasshopper Meredith,
Yes, you have found me out in my affliction. But wait, and hear this! This plant has NO pest nor disease problems, easily grown, hundreds, and hundreds, and hundreds of SHOWY flowers for many, many weeks, and an insect's cornucopia of sweet nectar and pollen, AND*

NOT TO BE omitted, small seeds for fall and winter birds, and small mamales. I rest my case and my pardon.

"I can remember the first Narrow Leaf Sunflower that I saw in flower, it was at the Mid-South Native Plant Conference in Memphis back in the 80s, and it was grown in a large container. I was so drawn into its radiant glow of beauty and have remained an addict and devotee ever since."

If my one single plant was blooming, this meant that Russell's entire slope would be aglow. He reminded me of this, and implored me to come and capture the sight. By then, I had been inducted into the Sacred Order of the Narrow Leaf Sunflowers, and I had a duty to fulfill!

*"Grasshopper Jones,
Ahh, you must make an Annual Pilgrimage and homage to the Sacred Grove of the Narrow Leaf*

Sunflowers on 20th Street when the altar to the Sunflowers is at their Zenith to keep your membership and be in good standing with the Society. Otherwise, your green thumb will blacken and cause you much grief in your plant endeavors. Master and high priest of Narrow Leaf Sunflower

P.S. you might wish. to take some photos for a potential article in the newsletter?"

Of course, I could not toy around with the threat of a black thumb, but I was also eager to see the sight. On Saturday the 17th of October, I made the sacred pilgrimage, and captured the image shared here. It was a crisp and clear blue fall day, and the "hundreds of SHOWY" flowers had all shown up.

While snapping photos that day I had no idea that he wouldn't be able to finish the article, or live through another bloom cycle. His knowledge was so vast that I think I believed he would be here long enough to share more of it with me, and the rest of us that are infinitely hungry to know more about these plants that, as he put it, "draw us in with their radiant glow."

He had certainly drawn me in with his, and I will be making the proverbial pilgrimage to the Sacred Grove of the Narrow Leaf Sunflowers each October, if only in my mind - to pay my respects to the beloved flower, but also my beloved friend.



The Sacred Grove of the Narrow Leaf Sunflowers, growing in October of 2020, in Russell Stuebaker's front yard.




Curious about mushrooms?

Learn how to inoculate straw with oyster mushrooms from the guys at Earthwise Mycology, and leave with your very own inoculation kit!

They will also demonstrate how to create a mushroom garden bed with King Stropharia.


The class will take place outdoors in Woodward Park, and space is limited.

A detailed illustration of several white oyster mushrooms with gills, growing on a dark brown background. The mushrooms are shown in various stages of growth, with some fully formed and others just budding.

Inoculation Workshop

Saturday March 13th
10:00 AM - 12:00 PM

Member Price : \$40
Non-member : \$45

The logo for Tulsa Garden Center is a circular emblem with a complex, sunburst-like pattern of small, repeating floral or geometric shapes.

Tulsa Garden Center
at Woodward Park

Oklahoma Mycological Society

By Estelle Levetin, President

The Oklahoma Mycological Society (OKMS) was established in the fall of 2019, and got off to a successful start with programs in January and February 2020. Needless to say, during the pandemic, activities came to a halt. OKMS has recently had elections and the new Executive Committee is starting to develop programs for 2021. I would like to take this opportunity to introduce myself and the others officers to the Tulsa Garden Center community.

I am honored to have been elected President of the OKMS. Mycology has been part of my life for more than 50 years. I grew up in Boston and attended Boston State College (now UMass Boston) for my undergraduate degree in Natural Science. I went on to graduate school at the University of Rhode Island in the Botany Department where I initially thought my research might focus on algae. However, I became fascinated with fungi and my doctoral research focused on fungal physiology and nutrition. Although my own research was lab-based, I often went exploring local woodlands for mushrooms along with several other graduate students. In 1972, I moved to Tulsa and began teaching at the University of Tulsa. At TU, I taught courses on fungi as well as plant science courses until my retirement in May 2020. My research took an unexpected turn when I collaborated with the Allergy Clinic of Tulsa to find out what fungal spores were present in the Tulsa atmosphere. I was amazed by the

diversity and abundance of spores in the atmosphere. The study of airborne allergens soon became the major focus of my long-term research program. Over the years, I have also spent time collecting mushrooms and encouraging my students to collect as well. I hope to put my experience to work to help the OKMS grow into a vibrant and active society and to share the wonders of fungi with the others.

Ethan Miller is the new OKMS Vice President. Ethan relates that he has been a student of mycology for over seven years and is looking forward to helping the growth of OKMS. In 2015, Ethan and Joel Myers, his business partner and best friend, started Earthwise Mycology. They

—◆—
*If I spend my entire
life studying them, I
may gain a sliver of
understanding.*
—◆—

have been growing, extracting, and consuming all sorts of fungi ever since. They have also hosted yearly fungal cultivation workshops. Ethan has studied fungal cultivation with Peter McCoy, author of *Radical Mycology*, and is also a student

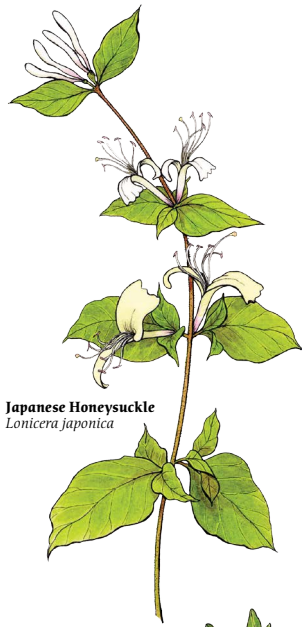


of fungal ecology through the Mycologos.world website. Ethan considers fungi the next great frontier and has said that “If I spend my entire life studying them, I may gain a sliver of understanding.” He feels that understanding the role of fungi and their methods are critical if we are to create a regenerative future for our species. His goals for OKMS include establishing a series of speakers, hosting cultivation workshops, and introducing fungal cultivation in our schools.

Jeff Berryhill was elected OKMS Secretary. Jeff indicates that he is an electrical engineer who is passionate about nature and our environment. He shares that he has always had an interest in the natural world, and his research into the science and practical working knowledge of fungi became more serious in 2014. “I carried my significant other along with me on this journey, and we got inextricably pulled into the fascinating

OKLAHOMA'S DIRTY DOZEN

UNWANTED INVASIVE PLANTS



Japanese Honeysuckle
Lonicera japonica



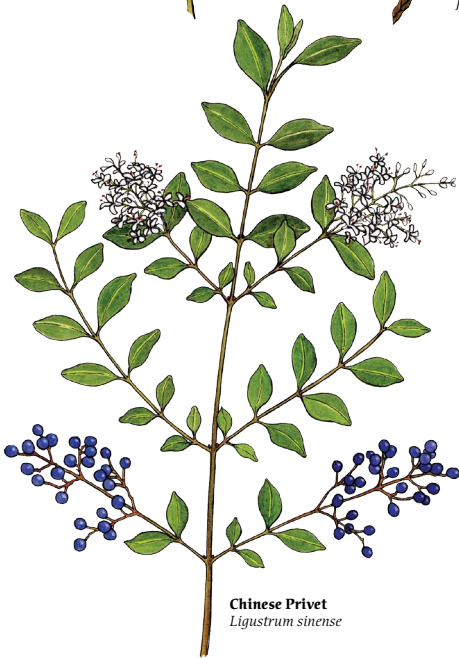
Eastern Redcedar
Juniperus virginiana



Siberian Elm
Ulmus pumila



Musk (Nodding) Thistle
Carduus nutans

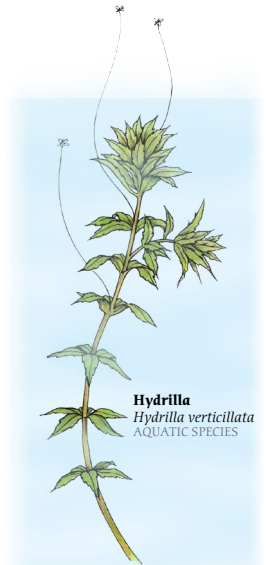


Chinese Privet
Ligustrum sinense



Russian Thistle
Salsola tragus

Sericea Lespedeza
Lespedeza cuneata

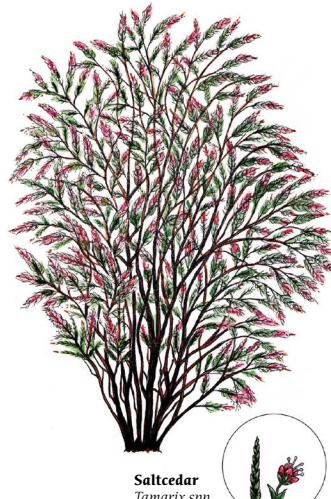


Hydrilla
Hydrilla verticillata
AQUATIC SPECIES

Yellow Bluestem
Bothriochloa ischaemum



Field Brome
Bromus arvensis



Saltcedar
Tamarix spp.



Cheatgrass
Bromus tectorum



Johnsongrass
Sorghum halepense

Oklahoma Mycological Society continued

and marvelous world of fungi. We've come a long way, but realize how amazingly far we still have to go to fully appreciate all the positive benefits these life forms provide." As part of his self-education on the subject, Jeff currently maintains a cold storage species library of viable mycelium which he shares freely with other enthusiasts. They both love hunting for mushrooms and are always up for forays into the forest.

Joel Myers is our OKMS Treasurer.

Joel describes that his interest in mushrooms began over 15 years ago. He has been lucky enough to have worked with fungi in a professional capacity, operating as the laboratory manager at a mushroom farm and research facility in South Carolina called Mushroom Mountain. Joel is also cofounder of the Oklahoma-based Earthwise Mycology and has taught many educational workshops on cultivation, identification, the medicinal and ecological benefits,

and other topics pertaining to fungi. He says that he is passionate about mushrooms and all the ways they have to teach and benefit us. "I'd love to play a part in bringing people together to celebrate fungi in fun and unique ways as well as have the opportunity to assist our local community in learning more about these wonderful organisms."

We all look forward to meeting and greeting many of you at future OKMS programs.



Chlorophyllum molybdites (Green-spored parasol, or false parasol) is a common summer to fall mushroom appearing on lawns throughout the region. These large, attractive mushrooms often grow in complete or partial fairy rings. As the mushroom ages, the gills turn green, and the spore print is olive-green. This species is regarded as poisonous, causing severe vomiting and diarrhea. As a member of OKMS, you can learn to identify the common edible and poisonous fungi in the area.



Benefits of Membership

Reasons why it pays to be a member:

Subscription to the quarterly Tulsa Garden Center E-Newsletter: *In The Garden*.

Free or Discounted Admission to American Horticultural Society Reciprocal Gardens

(ahsgardening.org): FREE admission to Myriad Botanic Garden in OKC, Dallas Arboretum and Botanical Garden, and hundreds more!

Discounts on Tulsa Garden Center Programs and Events: A Tulsa Garden Center member would save nearly \$150 on the Native Plant Certification Program and \$25 a ticket on our gala fundraiser, *The Tasting at Woodward Park*.

Invitations to Special Members-only Events

Free Preferred Parking During *SpringFest to-go* at Woodward Park on April 9th and 10th.

Discounts at Local Nurseries

Become a member or gift one to a friend at:
www.TulsaGardenCenter.org/join

When our Learning Networks need to be transplanted

By Brian Bovaird, Program Director, Outdoor Classroom at Woodward Park



The pandemic transformed, diminished, and figuratively cut-the-roots on a robust collaborative learning network for our student and teacher clients. We had established a confluence of repeat experiences for inspiring students in the classroom, getting hands-on messy in our 45-acre learning campus, to awaken their own potential in our living laboratory of Outdoor Classroom. COVID also redirected many learning opportunities for a deep dive into the cultural and entrepreneurial history of our Black Wall Street and Native American land acknowledgment.

We always set a bold expectation with our youth to be future innovators, entrepreneurs, and change-makers. They expect the same from their Outdoor Classroom mentors and teachers!

We grasped and held tight to our experiential dive into nature-based complex STEM concepts, coupled with a robust exploration of an emerging agribusiness model of aquaponics. To coin a theme from a 1987 leadership best seller, *Thriving on Chaos* by Tom Peters, our challenge in 2020-2021 is to prevent students' best developmental years for critical thinking from being swept away in a fickle, ephemeral, and often hollow virtual world.

*"An environment-based education movement—at all levels of education—will help students realize that school is supposed to be...a portal to the wider world."
(Richard Louv, Last Child in the Woods, 2005)*

We took our Park fishies, plants, Explorer aquaponic systems, and curriculum outbound, originally to teacher's garages, patios and living room in Spring 2020 for virtual learning. "Back to School" relocated them to empty classrooms, to let the fish and plants be the stars behind the teacher's cameras, to engage students to tune in! Aquaponics became their living virtual world as earth sciences and Managing the Nitrogen Cycle came to life in their studies. The goldfish had names before they even arrived. The teachers sowed the seeds the student wanted to see grow. There were cultural themed months of Hispanic (peppers and cilantro), Italian (basil and lettuce) and a little

New Orleans. Social, Emotional Learning (SEL) took the spotlight for uplifting struggling students and keeping them engaged.

"We start each virtual classroom Zoom with a quick check on the fishes, who all have names, and to see what is growing in our aquaponic system. It engages my students."

(5th Grade Virtual Learning Teacher, McAuliffe Elementary, Fall 2020)

We partnered with the North Tulsa Complex, R&G Family Farms, Food on the Move, Community Food Bank of Eastern Oklahoma, and Youth Entrepreneurs (.org) to begin revealing the food-supply chain and business models behind the food they eat. It is a fun mashup of the Design Process (STEM) and Design Thinking (Entrepreneur) modes of critical thinking. These toolsets/mindsets give students hope and helps light a pathway to either grow their own community or explore the world. The mantra for these budding entrepreneurs became "we need to be producers more so than just consumers!"

In the Fall 2020, we activated 7 of our 14 Explorer Aquaponic systems (USDA Grant) in mostly Union Public Schools. The rest were orphaned last March at quarantined schools, or as trained teachers took on new grade level responsibilities. This Spring all

WHAT TO PLANT

12 Monarch Butterfly Plants Suitable Statewide

Visit okiesformonarchs.org for regional plant lists.

For optimum Monarch habitat, plant at least 10 milkweed plants, made up of two or more species, and several annual, biennial, or perennial plants that are in bloom sequentially or continuously during spring, summer and fall.

EARLY BLOOM



BUTTERFLY MILKWEED

Asclepias tuberosa, likes full sun. Blooms in the spring. Grows .75-1' ft. tall. High drought tolerance. Perennial. Host/nectar plant.



GREEN ANTELOPEHORN

Asclepias viridis, likes full sun. Blooms spring to late summer. Grows 1-2' tall. Medium water use. Perennial. Host/nectar plant.



GOLDEN CROWNBEARD

Verbesina encelioides, likes full sun. Blooms spring to early fall. Grows 1-3' tall. Low water use. Annual.

MID BLOOM



EASTERN PURPLE CONEFLOWER

Echinacea purpurea, likes full sun/partial shade. Blooms late spring to early summer. Grows 2-3' tall. Medium water use. Perennial.



INDIAN BLANKET

Gaillardia pulchella, likes full sun. Blooms in the summer. Grows 1-1.5' tall. Medium water use. Annual.



WILD BERGAMOT

Monarda fistulosa, likes full sun/partial shade. Blooms in the summer. Grows 2-4' tall. Medium water use. Perennial.



BASKET-FLOWER

Centaurea americana, likes full sun. Blooms in the summer. Grows 3-4' tall. Medium water use. Perennial.



MAXIMILIAN SUNFLOWER

Helianthus maximiliani, likes full sun. Blooms in the summer. Grows 3-10' tall. Medium water use. Perennial.



BLAZINGSTAR

Liatris punctata, likes full sun. Blooms in the summer. Grows 1-2' tall. Medium water use. Perennial.

LATE BLOOM



AROMATIC ASTER

Symphotrichum oblongifolium, likes full sun. Blooms late summer to fall. Grows 2' tall. Drought tolerant. Perennial.



SHOWY GOLDENROD

Solidago speciosa, likes full sun. Blooms late summer to fall. Grows 2-3' tall. Medium water use. Perennial.



BLUE SAGE

Salvia azurea, likes partial shade. Blooms late summer to fall. Grows 3-6' tall. Medium water use. Perennial.

When our Learning Networks need to be transplanted continued

14 units are active with our virtual, in-person and hybrid lesson plans that meet OAS standards for Science, Math and ELA. Nine of the Explorer systems have been relocated to North Tulsa schools, with two operating at Monroe Middle School.

Earth – Moon – Mars: In our third Senior Design Project for TU Mechanical Engineers, we are developing a 3D-printable small/home-based aquaponic, stackable grow bed model. This will introduce Outdoor Classroom students to CAD design software, reinforces the Design Process, and stir curiosity and imagination for real-world solutions on terraforming planets, while addressing food scarcity in our community and worldwide. Students have participated in

brainstorming Zoom calls with our diverse engineering team. They have held prototype models in their hands, and even made recommendations! The models can be printed at five Tulsa City/County Libraries or in our partnership with FabLab Tulsa.

Why do we care? Our cause remains focused to addressing STEM inequities and mentoring in our underserved neighborhood schools. We also recognize that not every student will desire to be a STEM professional, hence we loop in a Design Thinking mindset for budding entrepreneurs or those who seek to fast-track through an established corporation or non-profit. To our Richard Louv reference, we want students to learn and leverage our natural resources, our Tulsa Parks,

while being a good steward of planet.

Why should you care? Please engage our young pioneers in your passions, share failures, and build upon successes. Our students, and all students, need mentors, listeners, and collaborators along their journeys. Someone who shares the scrapes and bumps that happen outside the virtual world. Students are learning the basics that our fragile ecosystem needs - clean air, clean water, a habitat to thrive and nutrients to live. The latter being a National Academy of Engineer's Grand Challenge (1 of 14) to Manage the Nitrogen Cycle for a sustainable food supply. We need to change communities from the kids up!

– Be a blessing





Tulsa Garden Center
at Woodward Park

2435 S. Peoria
Tulsa, OK 74114-1350

Non-Profit
Organization
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Permit No. 192
Tulsa, OK

Our mission is to provide a variety of horticulture and environmental education opportunities for the community and to serve as horticultural headquarters for the Tulsa area.



The Mansion
at Woodward Park

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