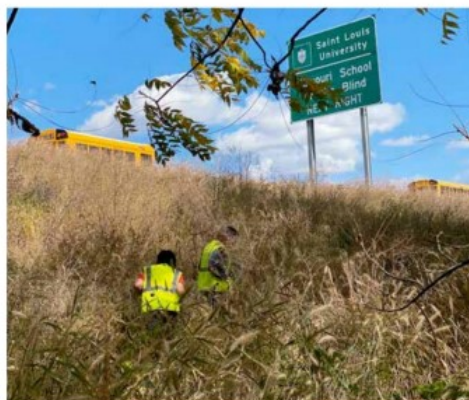


# Planting Seeds:

## The Green House Venture Introduces Grade Schoolers to Urban Ecology and Growing text and photos provided by Green House Venture

*We seek to educate, excite, and equip an inclusive population of elementary students to pursue a sustainable world through hands-on experiences in bio-science and urban agriculture.*

Tom Purcell, President, Green House Venture



Students walk on the Embankment Greenway in search of seeds dispersed in a variety of ways.

In the heart of St. Louis's Shaw neighborhood, a stretch of highway embankment along Interstate 44 has been transformed into an innovative laboratory where hundreds of elementary-school students learn about ecology and sustainable growing, working alongside scientists seeking ways to convert roadsides into pollinator-friendly habitats.

Called the Embankment Greenway, this 3.7-acre 'classroom by the highway' is part of the campus of the Green House Venture, a non-profit STEM education initiative that teaches science, growing, and nutrition to students in grades 4-6 at nearby neighborhood schools. According to Donald Stump, the Curriculum Director, "The Greenway provides a fascinating place where children can start seeds, carry out experiments, and explore subjects from soil composition and plant chemistry to ecology and the great cycles of nature."

At the heart of the Embankment is a Terrace Garden where students are learning to cultivate edible plants for food. Surrounding it is a restored expanse of native Missouri prairie that serves as the Venture's Pollinator Recovery Habitat. There, the Bee Laboratory of St. Louis University is conducting a first-in-the-nation study of ways to reverse the decline of native pollinator populations in the Midwest by focusing on repopulating roadsides with native bees and flowering plants. The study is being undertaken in response to Federal highway legislation calling on states to follow pollinator-friendly practices in managing roadside vegetation.



Scott Woodbury, a volunteer instructor, teaches students about pollinators and the plants that attract them along the embankment.

Venture educators have developed two types of special equipment called Discovery Stations to introduce young students to bio-science and urban agriculture in fresh ways. One is a computer-assisted growing chamber capable of controlling the color, duration and frequency of lighting; the watering cycle; the flow of air; and the injection of precise doses of nutrients at specified times in an eight-week growing cycle.



Students harvest vegetables they planted in the Terrace Garden and package them to take home.



A teacher guides budding scientists in measuring the growth of plants raised in the Computerized Growing Chamber.

Located in the hallways of participating schools, the chambers allow not only the children conducting the experiments but also those passing by to watch plants grow and to learn from signage the implications of what is going on in the chamber. In that way,



Students rub lavender plants in the Herb Garden to help determine the type of herb.

many learn and gain first-hand experience what it is to be a scientist.

The other main kind of equipment employed by the Venture is the cold frame. To extend the growing season, students try out various designs, practicing their building skills and analyzing the effects of special features such as a double-paned plastic shell, a reflective back, compost heaters, or a thermal ballast. These

'little greenhouses' are equipped with Bluetooth hygrometers and thermometers to broadcast data to staff, teachers, family members, and anyone else in range.

The students have several Spring planting activities underway. Having already sprouted various edible species in growing chambers, they will soon be transplanting them into cold frames and gathering data on conditions inside. As the danger of frost passes, the children will seed the remaining areas of the terrace, experimenting with worm towers to turn compost into fertilizer. A scientist from the Danforth Science Center will lead sixth-graders in a citizen-scientist research project to identify mutant strains of corn that are promising for harsh environments.

Finally, in May, classes will take field trips to the Pollinator Habitat to study the more than thirty species of wildflowers involved in the bee study. Visits will include side-lessons on seed dispersal and the herbs and native Missouri plants being cultivated in the Terrace Garden by the Wild Ones and the Missouri Master Gardeners. Experience with indigenous and African American crops will also be available in terraces planted by Harris Stowe State University and a collaborative of the St. Louis Zoo and the Coahoma Nation.

Across from the Embankment at Lawrence and De Touhy is the site of the Venture's long-planned Education Center. A 9,000 square foot, state-of-the-art indoor and outdoor facility, it is designed as a hub for hands-on experiences in bio-science and urban agriculture. Included will be an aquaponic greenhouse, a trellis and green-wall courtyard, and a soilless rooftop growing area. It will also feature advanced technology to allow programming to be streamed to schools around the region and beyond. Fundraising to build the \$4.7 million facility is now in its public phase.

Volunteers interested in assisting the Venture in its many planning, teaching, growing, administrative, and building activities are encouraged to contact Donald Stump (at [stump@slu.edu](mailto:stump@slu.edu)). Donations to support the Venture's work and build the Education Center can be made at [www.greenhousetl.org/growing-forward/](http://www.greenhousetl.org/growing-forward/).

## NEED A SPEAKER?



Master Gardener Speakers Bureau volunteers are available to speak to garden clubs, church, civic and other groups.

Choose from 46 programs, including A Dark Side to Winter Damage, Backyard Composting, Soil Preparation, Daylilies, Orchids, and more.

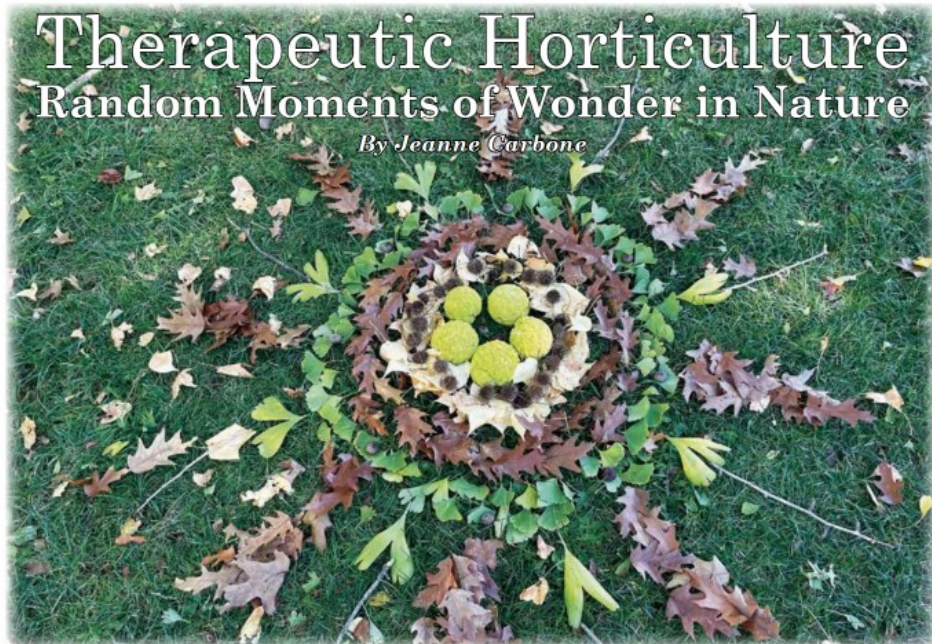
Explore the complete list of topics at [www.stlmg.org](http://www.stlmg.org). Look for the Speakers Bureau tab in the top margin.

(A \$50 fee funds Master Gardener programming in our community.)



# Therapeutic Horticulture Random Moments of Wonder in Nature

By Jeanne Carbone



Nature provides us with the opportunity to experience wonder anytime, any place, any season. As much as we lament the cold and sometimes dreariness of winter, it is a season which brings its own manner of wonder. Paying particular attention to the shape and form of trees before leaves appear brings an appreciation of their strength and immensity. Exploring the detritus at your feet can provide an awareness of what nature leaves behind. The Therapeutic Horticulture team of the Missouri Botanical Garden offers opportunities and suggestions for how to use this awareness to connect more deeply with nature.

Therapeutic Horticulture at Large is the newest endeavor of the team to engage with visitors to the Garden and help foster that sense of wonder. Beginning in the fall of last year, we offered the public the chance to contribute to a nature mandala, provided opportunities for multi-sensory exploration of natural found objects, and to weave the colors of winter into a community tapestry. These experiences were designed to encourage that radical amazement children share every time they find something new on the ground; can't you just hear the "Look at this!!!" Creating art in nature, with your only tools being what is under your feet, means looking at a leaf or an acorn or an osage orange as just the tool you need to make the art piece perfect. Anyone can have these same experiences anywhere in nature. Visit your local park, Forest Park, your backyard and slow down, pay attention to the details in what is all around and surprise yourself with an artistic creation to leave for others. Or take the time to use each of your senses to connect with a leaf or the bark of a

tree. What did you notice that you never noticed before?

TH at Large will continue at the Garden at random times but most often on Wednesday mornings, when admission is free to City and County residents. If you are on grounds, seek us out and find out how we can help you experience wonder.

Well-being Week, a special effort of the Therapeutic Horticulture team, will take place the week of March 18<sup>th</sup>. Engaging activities will be available, as well as suggestions to deepen your connection with nature as you walk the Garden. Hope to see you then.



*Jeanne Carbone is the Supervisor of Therapeutic Horticulture at the Missouri Botanical Garden. She has a Master's degree in Education with an emphasis on Outdoor Education, and holds a certificate in Horticulture Therapy from Chicago Botanic Garden. She has been involved in this work for 10 years.*



The Gateway Gardener™ MARCH 2024

## DIG THIS! GATEWAY GARDENERS AND BUSINESSES IN THE NEWS

### IN MEMORIAM



Ann Case

The gardening world lost an avid enthusiast and supporter during our long Winter publishing hiatus. **Ann Case** passed away on November 2<sup>nd</sup>, 2023. She was a community volunteer, especially with the **Missouri Botanical Garden**, where she donated her time and experience for over 50 years. She was an avid gardener and conservationist. She also served on boards of **The Missouri Chapter of the Nature Conservancy** as Treasurer; **Ladue Garden Club** and made an Honorary Member in 2020; **Webster Groves Men's Garden Club**, as first woman President; **The St. Louis Herb Society**, as Treasurer, then Membership Chairman, and assisted with editing of three books published by the Herb Society, finally being made an Honorary Member; Members' Board of **Missouri Botanical Garden** where she was honored by having a daylily *Hemerocallis* "Ann Case" named for her; **St. Louis Master Gardeners**; **Junior League of St. Louis**; **Landmarks Association**; **The Woman's Exchange of St. Louis** and the **Friends Committee of the Donald Danforth Plant Science Center**.

"Ann Case became a master gardener in 1988," wrote **Holly Records, Master Gardener Coordinator**, in a note to Master Gardeners, "and she was truly one of the best. Ann volunteered with the Horticulture Answer Service, at the Plant Doctor desk, served on the MBG Member's Board, was a member of the Master Gardener AC, and a Garden Docent. Ann loved nature with the possible exception of squirrels. Anyone who knew Ann had probably heard about her battles with the squirrels in her backyard. I will think of Ann every time I see a squirrel. Ann really was a Master gardener."

### NEW BOARD MEMBER FOR GREEN HOUSE VENTURE

The **Green House Venture** recently announced that **Kurt Keister** has joined its board of directors. Keister is a professional landscape designer and project manager with **Garden Oasis Landscaping** in St. Louis, where he has planned, designed, and managed the development of a wide variety of residential landscape and hardscape projects for the past 13 years. He also teaches Hardscaping at the **Missouri Botanical Garden** and is a volunteer in their Senior Outreach Program.

Keister holds a Master Gardener Certification from the University of Missouri-Extension and the Missouri Botanical Garden.



Kurt Keister

"We are fortunate to have someone with Kurt's impressive credentials join our board and help us continue to grow our plant-based STEM educational programs for urban elementary school students," said **Tom Purcell, President of Green House Venture**. "His extensive knowledge of plant species, climate, soil, and sun exposure will be particularly helpful as we study a variety of food crops at our outdoor Embankment Greenway educational laboratory and address critical challenges facing urban communities and disadvantaged youth, including poor nutrition and dietetics."

Keister earned a BA in Communications & Marketing at the University of Missouri – Kansas City.

See page 18 to learn more about the Green House Venture, or visit [www.greenhousestl.org](http://www.greenhousestl.org) or send an email to [craig@workman-company.com](mailto:craig@workman-company.com).

### NEW LOCATION FOR MU EXTENSION OFFICE

The **St. Louis County University of Missouri Extension** office has moved from its previous location in Kirkwood to its new home at 9667 Page Ave., 63132. This is the location to take your soil samples and is also home to Master Gardeners answering questions via the St. Louis Garden Hotline or to walk-in visitors with garden questions. Hours at the office are 9am-4pm M-F. You can phone 314-400-2115 or email [stlouisco@missouri.edu](mailto:stlouisco@missouri.edu). Master Gardeners answer Hotline questions at 314-400-7657 between 9:30am-2:30pm M-F, or you can email anytime to [stlgardenhotline@gmail.com](mailto:stlgardenhotline@gmail.com). Look for more information on the services of the Extension office and an upcoming Open House in a future issue, or visit the Extension website at [extension.missouri.edu/stlouis](http://extension.missouri.edu/stlouis).

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