

bulletin

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MISSOURI BOTANICAL GARDEN



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Thank you! Your membership provides critical support for our international and local plant science and conservation work, and Garden memberships contribute 20% of our annual operating funds.

To learn more about the benefits of your membership, visit www.mobot.org/membership, email membership@mobot.org, or call (314) 577-5118.

hours and admission

For hours and admission prices at our three locations, visit www.mobot.org, www.butterflyhouse.org, and www.shawnature.org.

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on the cover

Some plants' winter aspect is just as beautiful as their blooming season. They add wonderful new looks to the garden in the winter (see page 16). Photo by JJ Mueller.

credits

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from the president



With the holiday season in full swing, this is an exciting time to visit the Missouri Botanical Garden, Sophia M. Sachs Butterfly House, and Shaw Nature Reserve. Lots of events, learning opportunities, and exciting new projects are happening all around, so join us this winter!

As the year draws to a close, it is also important to step back and reflect on our successes and lessons learned. We kicked off the year with the exciting news of the new Oertli Family Hardy Plant Nursery and invited the local community to celebrate the great outdoors with the *Meet Me Outdoors in St. Louis* event, which also debuted Edward Jones Hall with the renovated Brookings Exploration Center and the new PlantLab. Thanks to your support, *Garden for the World* campaign projects continue to move forward (see page 14).

This year also featured important plant research and conservation efforts locally and globally. From new discoveries to community-based programs to building capacity—all played a role in continuing our mission. With the adoption of the United Nations' Agenda for Sustainable Development in 2015, the Garden embraced the challenge and responsibility to ensure that plants play an important role. In fact, we were the first botanical institution to endorse the Agenda. We understand that in our work we must integrate the socioeconomic aspects of sustainable development with environmental protection and plant conservation. We will not be successful in conserving the biodiversity that supports us all if we ignore the needs of people. By building capacity, the Garden can have an impact on the lives of many and, consequently, on the environment (see page 10).

Thanks to your support, the Garden continues to be a world leader in plant discovery and conservation. Thanks to you, the Garden, Butterfly House, and Nature Reserve continue to be top destinations for visitors from near and far to connect with plants. We look forward to yet another year of wonderful opportunities to connect with the natural world, and we invite you to join us as we set our eyes on the future of the Garden—*your* Garden—and the world.

Dr. Peter Wyse Jackson, *President*

what's new?



Dr. Wyse Jackson and Lelia Farr, Chair of the Garden's Board of Trustees, at the ceremony.

Garden President Receives Award

On October 12, the Boeing Institute of International Business at Saint Louis University's John Cook School of Business recognized Garden President Dr. Peter Wyse Jackson during its annual Hussmann International Business Awards Ceremony. Dr. Wyse Jackson received the 2016 International Visionary Award, which recognizes an

individual who has substantially contributed to advancing the field of international business. Lelia Farr, Chair of the Garden's Board of Trustees, introduced Dr. Wyse Jackson at the ceremony. "As one of the world's foremost and best-known botanists and plant conservationists, he has played an influential role in reshaping the international botanic garden community over the past three decades," she said.

To view the tribute video that was played at the ceremony, visit www.mobot.org/president.



Celebrating Trees

The Garden, in partnership with the Missouri

Department of Conservation (MDC) and Forest ReLeaf of Missouri, hosted an event on September 12 to celebrate the 40th anniversary of Tree City USA. The program is sponsored by the Arbor Day Foundation and administered in Missouri by the MDC. Currently, there are 88 Tree City USA communities in Missouri. The event served as the MDC's kickoff for its goal to add 40 new communities in the next five years. Attendees representing the municipalities across the state enjoyed an evening with food, drinks, entertainment, and expert-led guided tours highlighting some of the Garden's most remarkable trees.



River birch (*Betula nigra*) was one of the 11 native tree species planted during the event.

Community Plants Trees in Baden Neighborhood

On September 24, the Garden worked in partnership with the Baden neighborhood, located in north St. Louis City, to host a tree-planting day. The event was part of the larger Urban Vitality & Ecology Initiative, a city effort to connect people with nature. More than 60 native trees were planted in Baden's Dickman Park, increasing the park's number of trees—

from 30 to 97—and species diversity—from 14 to 20 species. Event partners included the City of St. Louis, Washington University in St. Louis, Missouri Department of Conservation, Riverview West Florissant Development Corporation, and Forest ReLeaf of Missouri.

Board of Trustees Update

Lisa Trulaske was recently elected as a new member and David Hollo as new Vice Chair.



New Horticulture Supervisor Joins Garden

The Garden welcomed Stacie Martin as North Gardens Supervisor in August. Her previous experience

includes working for the Cincinnati Park System on projects such as reforestation and stormwater management. After attending the 2016 Global Partnership for Plant Conservation international conference at the Garden, Martin knew she wanted to be a part of the Garden's mission. "I'm looking forward to developing our plant list to increase the species at the Garden that are rare or endangered for conservation purposes," she says.

75 years of excellence



Society members have tended to the Victorian-style herb garden behind Tower Grove House since 1964.

St. Louis Herb Society Celebrates Milestone Anniversary

The St. Louis Herb Society celebrated its 75th anniversary in 2016 with three special events and a commemoration of founder Mary E. Baer. The Herb Society has been associated with the Garden since its beginning in 1941, forming a relationship with then Garden Director Dr. Edgar Anderson.

Herb Society members are most often seen caring for the herb garden directly behind Tower Grove House and hosting Herbs and Heirlooms Tuesdays there in the summer. The Victorian-style herb garden has been tended by the Herb Society in this location since 1964.

The generous members of the Herb Society have also provided more than \$260,000 in support to the Garden over the years. Much of their support has been directed to the herb garden and the Herb Garden Legacy Fund. We are proud to have a long-standing partnership with the St. Louis Herb Society and congratulate them on 75 years of excellence.

photos by Tom Incrocci, Dan Brown, and Kat Niehaus



Conservation activities such as prescribed burns will now be recorded through the new web application.

New Tool Tracks Restoration at Shaw Nature Reserve

Shaw Nature Reserve has been restoring natural habitats for decades. Thanks to a new mapping tool launched this summer, all land management activities will be documented, mapped, and tracked. “One of the best parts about the new web app is that we can learn from what we’re doing now and track progress as we

move forward,” says Mike Saxton, Ecological Restoration Specialist at the Nature Reserve. “It really allows us to do our job better.”

The new web app, not available to the public, is the result of the collaboration between Saxton; Dr. Quinn Long, ecologist at the Garden’s Center for Conservation and Sustainable Development; and Horticulture GIS Specialist Kayla Flamm. Beyond its use for staff and volunteers, this tool helps others conducting conservation work at the Nature Reserve, which serves as a living laboratory for many research projects. “It’s an excellent example of good integration of science and technology,” says Deb Frank, Vice President of Sustainability and Shaw Nature Reserve.



Garden for the World Update

Renovation was recently completed on Herring House, the Garden gatehouse constructed in 1895. It had been unused since 2001.

Thanks to a generous gift from the Herring family, the gatehouse features a new roof, updated systems, and two suites for visiting special guests. It retains the historic features of the house while incorporating modern amenities. Work continues on the gardens around Herring House, which will be renamed Lauren’s Secret Garden.

Work to reopen the Samuel and Dena Sachs Museum will begin in February and is expected to be completed by December 2017 (see page 14). For more information on these and other projects, please visit www.mobot.org/fortheworld.

did you know?

Leading Conservation Efforts in Panama

Garden President Dr. Peter Wyse Jackson and members of the Garden's Horticulture team recently traveled to Panama to attend and present at the Caribbean and Central American Botanic Garden Network conference. They also met with their counterparts at Parque Municipal Summit



Plant recorder Alanna Slack in the Santa Fe National Park.

to establish a renewed collaboration that will support the conservation of Panama's flora. The two institutions' long history of collaboration dates back to the late 1920s, when the Garden established a field station in Panama. The Garden completed the *Flora of Panama* in 1981.

Today, Garden researchers are conducting floristic inventories of Panama's Santa Fe National Park and developing a Red List of Threatened Species according to the International Union for the Conservation of Nature (IUCN). Garden horticulturists will collaborate with colleagues at Parque Municipal Summit in collecting, propagating, and protecting species identified as threatened by the research team. "We are looking forward to help increase capacity to support plant conservation using our Living Collections Management System and horticulture techniques," says Andrew Wyatt, Vice President of Horticulture and Living Collections.

Garden Developing Method to Assess the Risk Levels of Plants Added to Collections

The Garden is developing a Weed Risk Assessment (WRA) for botanical gardens thanks to a grant of \$75,435 from the United States Department of Agriculture's Farm Bill. A "weed" may be a species that grows aggressively or is invasive outside its native habitat. "The purpose of this project is not to define what is a weed or an invasive," says Brittany North, Plant Recorder and project coordinator. "The purpose is to reduce the risk of introducing non-native plants of potential invasiveness into the Garden's living collection while still allowing for a diverse collection of species for conservation, research, and display."

The WRA is a multi-question, multi-phase method to determine the risk level for plant accessions at the Garden. "There are many weed risk assessments in many parts of the world, but most of them require extensive literature review and are extremely time-consuming," says Rebecca Sucher, Living Collections Manager. "This database-oriented assessment will be more efficient and is an excellent example of how technology can help."

The Garden has been involved in several invasive plant projects, including a 2001 workshop to discuss possible approaches to reduce the introduction and spread of non-native invasive plants. This workshop's St. Louis Codes of Conduct on Invasive Plant Species are the foundation for the recent risk assessment work.



Dr. Carl Jones Visits the Garden

On October 12, conservation pioneer Dr. Carl Jones gave a presentation at the Garden about the efforts of restoring species and ecosystems in Mauritius. His Garden stop was part of a visit to the United States to receive

the prestigious Indianapolis Prize, considered the "Nobel Prize of conservation." Dr. Jones is Chief Scientist of the Durrell Wildlife Conservation Trust and a founding member of the Mauritian Wildlife Foundation (MWF), where he serves as its Scientific Director. The Garden works closely with MWF to protect Mauritius's rich yet threatened flora. "We're not just saving species, we're rebuilding systems of animals and plants," Dr. Jones says. "And we need the skills from the Missouri Botanical Garden to help us do that."

Recent Grants

\$302,966 Compact Mobile Storage Retrofit, Electrical to Mechanical, Missouri Botanical Garden Herbarium
National Science Foundation

\$148,672 Restoring the 60-acre Whitmire Woodland Natural Area at Shaw Nature Reserve
Institute for Museum and Library Services

What is Conservation Genetics?



Think of the Garden's genetics program as the plant world's equivalent to any of the family genealogy services available today. By studying the genetic composition of an individual, one can understand its relationship to other individuals in the same species, where it came from, how it got there, and how the species is related to others. In plant conservation, this genetic information can help determine whether a species is in fact rare or endangered or just a subpopulation of a widespread species. It can also help assess any genetic threats that jeopardize a species' survival, such as inbreeding or hybridization. It can measure the genetic diversity in a rare species to ensure that conservation efforts are protecting the full range of genetic diversity. Genetics helps guide restoration efforts by providing information about ecology and reproductive biology of plants. Finally, genetic information can help study the ability of a species to adapt in response to climate change. "DNA holds unbiased information," Dr. Christine Edwards says. "All these things are tools that we use to help conserve that species—where it came from and where it's going."



Renowned Ethnobotanist Gives Garden Living Collection of Teosinte Seed

In the spring of 2016, the Garden received a living collection of seeds of a wild ancestor of modern corn called teosinte. It was given to the Garden by Dr. Mary Eubanks, a retired biology professor at Duke University who has worked with corn extensively. "My goal for the collection is that the seed be available for education and research, especially since some of the accessions are no longer available from the USDA [U.S. Department of Agriculture] or CIMMYT [International Maize and Wheat Improvement Center]," she wrote in an email to Andrew Wyatt, Vice President of Horticulture and Living Collections.

The collection allows the Garden to preserve the genetic material that is important to corn research and supports the long-term conservation of crop wild relatives. It now lives in the Garden's Seed Bank at Shaw Nature Reserve, where it is stored long-term in freezers to maintain its viability. "The associated data that came with this collection is very detailed. It has directions to the site exactly where it was collected," says Rebecca Sucher, Living Collections Manager. "It's really important that we know exactly where it came from and what genetic entity it represents."

photos by Megan Engelhardt and Monique Mullen



It's in the DNA

Dr. Christine Edwards,
Conservation
Geneticist

Dr. Christine Edwards joined the Garden's Center for Conservation and Sustainable Development in 2013. Shortly after, the Garden's Plant Conservation Genetics Laboratory opened. Since then, the conservation genetics program has grown to include several graduate students, two lab technicians, and, most recently, a fully endowed conservation genetics doctoral fellow (see page 13).

The program focuses on rare and endangered plant species. Conservation genetics can help ensure that broader conservation efforts are effective and financially responsible. For example, take the species debate in the genus *Conradina*. The first question was whether *C. brevifolia*, found in central Florida, was part of *C. canescens*, a widespread species in that state, or a distinct, federally endangered species. The second question was whether a cluster of populations in Santa Rosa County, Florida, was a subpopulation of *C. canescens* or *C. glabra*, a federally endangered species.

Using the genetic information collected from these species, Dr. Edwards and her team were able to determine that *C. brevifolia* was a unique species and therefore warranted to be listed as federally endangered. The Santa Rosa populations were just a subpopulation of *C. canescens*. "Because time and resources are limited in plant conservation, we need to know more about them in order to make sure we're doing the best job of conserving them," she says.

what can you do?



JUST FOR YOU

Give the Gift of the Garden This Holiday Season

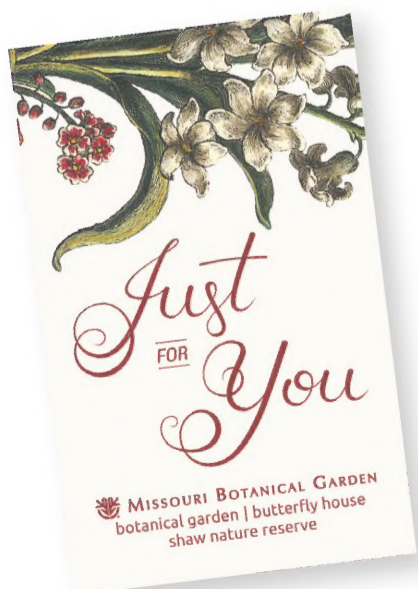
Share the Garden with someone special. A Garden membership makes an excellent gift and provides a full year of great benefits. To give a gift membership, please visit the Membership Services Desk at the Garden, Butterfly House, or Shaw Nature Reserve; call (314) 577-5118; or visit us online at www.mobot.org/membership. Christmas delivery is guaranteed through December 8.



Grab Your Coat and Go for a Hike

You may not know it, but winter is a great time to hike at Shaw Nature Reserve. You will get great unobstructed views and see beautiful ice formations and frost flowers. Don't forget that the Nature Reserve

is open year-round. The gates are open from 7 a.m. until sunset; the Visitor Center and Bascom House are closed on most major holidays. Plan your visit at www.shawnature.org.



Give Them a Garden Gift Card

Gift cards are always great birthday, holiday, and anniversary presents. You can now get the new Missouri Botanical Garden gift card at the Garden and Butterfly House ticket counters and online* at www.mobot.org. Use it to buy admission tickets, sign up for classes, enjoy a meal at Sassafras, buy a membership, or get that unique present at the gift shops.

**shipping fee applies*

Save When You Join, Renew, or Gift a Garden Membership



Enjoy 20% off new, renewing, or gift memberships during our Membership Sale December 7–11. Visit the Membership Services Desk at the Garden, the Butterfly House, or Shaw Nature Reserve during the sale dates to receive the discount. Can't get here during the sale? Not to worry! You can visit www.mobot.org/membership or call (314) 577-5118 from 9 a.m. to 5 p.m. during the sale dates to take advantage of this offer. Christmas delivery is guaranteed through December 8.



Avoid Cabin Fever with Our Classes

It's cold outside, so come inside and take advantage of all the great classes for kids and adults offered at the Garden, Butterfly House, and Shaw Nature Reserve. From garden planning to winter drawing to making maple syrup—there's something for everyone! More at www.mobot.org/classes.

Consider Making a Year-End Gift

The Garden is a world-renowned institution because of donors like you. Consider making a year-end gift over and above your membership to support the Garden's work here and around the globe. We can't do this without you! Visit www.mobot.org/donate, call (314) 577-5118, or stop by the Membership Services Desk to make a tax-deductible donation.



Visitors can tour the Garden's Herbarium, one of the largest in the world.

Go Behind the Scenes

On February 25–26 from 1 to 4 p.m., two of the Garden's rarely seen areas will be open to the public. **Go behind the science with Garden botanists** at the Monsanto Research Center. Meet our scientists and learn how they explore, collect, and study plants. Tour one of the largest herbarium collections in the world and visit the Peter H. Raven Library, where you can view rare and illustrated botanical texts.

You can also learn about the Garden's sustainability programs in the community during the **EarthWays Center's open house** at the Commerce Bank Center for Science Education. Meet the team that educates and connects people to 20+ programs in the community. Get tips on building energy efficiency and find out more about our environmental classes and programs for schools, individuals, and families. Learn about rainscaping, check out the U.S. Green Building Council–Missouri Gateway Chapter, and more.

The two locations are across the street from each other, just a couple of blocks west of the main Garden entrance. You can park at the Garden or at either of the two sites then walk to both places. Both events are free and open to the public. For more info, visit www.mobot.org/events.

photos by Tom Incrocci and Randy Blankenship

Experience the 2017 Orchid Show in a Whole New Light

The annual Orchid Show returns this February to showcase the Garden's renowned orchid collection. In addition to the Member Preview on February 3, for two nights only—February 9 and March 9—you can enjoy an exclusive lighted viewing of the orchid displays with live music, tastings from local wineries, and a full cash bar. Your ticket includes one complimentary vanilla-inspired cocktail, or your choice of beer or wine. \$15 members; \$20 nonmembers. Visit www.mobot.org/orchidshow.



Get Ready for the Garden's 2017 Special Exhibit

Experience the Garden's Climatron® conservatory like never before as it blooms with the larger-than-life works of art. The Garden is excited to bring you *Garden of Glass: The Art of Craig Mitchell Smith* May 13 through August 13, 2017. Tickets will be available spring 2017, and members get to purchase them before they're available to the public. Information at www.mobot.org/glass.



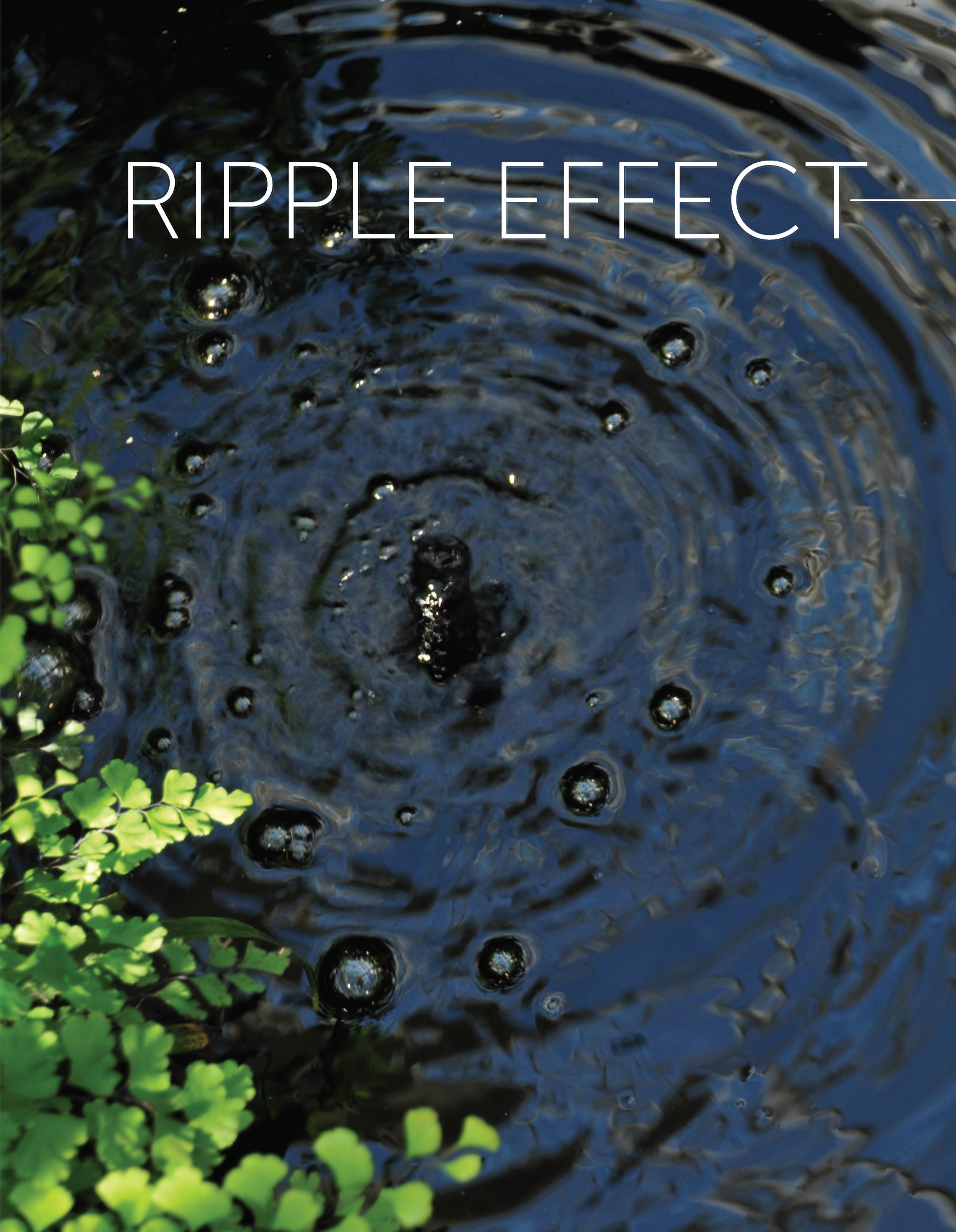
Experience Blue Morphos in February

Morpho Mania at the Butterfly House moves to February this year. Visit February 1–28 and see these magnificent blue creatures. In addition to live butterflies, the Butterfly House will host a preview piece of this summer's *Garden of Glass: The Art of Craig Mitchell Smith* during Morpho Mania. For more details, please visit www.butterflyhouse.org.



Blue Morpho by Craig Mitchell Smith

RIPPLE EFFECT





sharing our mission by building capacity

One of the guiding principles behind the Garden's conservation work is the Global Strategy for Plant Conservation (GSPC). This international set of goals adopted by the United Nations Convention on Biological Diversity in 2010 aims to stop the loss of plant diversity to secure a sustainable future. The GSPC includes the goal to develop the capacities and public engagement necessary to achieve the strategy.

Global Strategy for Plant Conservation

Objective V | Target 15

The number of trained people working with appropriate facilities sufficient according to national needs, to achieve the targets of this Strategy.

But what does this mean in practice? At the Garden, it means sharing knowledge and tools that will empower people to improve their lives and, consequently, their community—all within the context of the Garden's mission. Each interaction has the potential to start a ripple effect and become a wave of change. Capacity building goes hand in hand with the Garden's scientific work to discover, understand, and protect plants. Without one, the other cannot be sustained. Tools and training are only effective when they ensure plant conservation benefits people just as much as it benefits the environment.

"Biodiversity is ultimately going to survive only if it's seen as important to humanity," says Garden President Dr. Peter Wyse Jackson.

Tailoring the Garden's programs and tools to each community—whether in St. Louis or in Peru—is key to sustainable development that values plant diversity. Throughout its history, the Garden has been a part of many people's lives. "The Garden has played a wonderful role in building capacity, growing not just plants, but also growing leaders," Dr. Wyse Jackson says.

Build Capacity and Enrich Life!

You can increase our impact through a special donation. Please visit www.mobot.org/enrichlife to learn more and make a gift.

each interaction

has the potential to start a ripple effect and become a wave of change

Capacity building at the Garden can be many different things. Education is not the only tactic for capacity building, but it remains an important one. Workshops, training sessions, public classes, and graduate programs all play a role. Engaging the local community, no matter where that is found, is also important. Empowering people to find solutions specific to their needs is crucial to sustainable development and, therefore, conservation.



TEACHERS

The Garden's team of environmental instructors, naturalists, early childhood specialists, teen program coordinators, and other professionals complement and support the work of classroom teachers, enabling learning while deepening connections with plants and the natural world. The Garden offers K–12 teachers STEM and inquiry training. It also hosts educator summits such as the 2016 Early Childhood Nature Summit, part of the *Sprouting Science in St. Louis* program supported by The Boeing Company. During these multi-day summer workshops, educators from across the region learn from local professionals and peers how to transform their schools into nature-rich, outdoor classrooms.

The opportunity to learn and interact with like-minded individuals was priceless. I feel invigorated and challenged and committed! Thank you!

Early Childhood Nature Summit participant



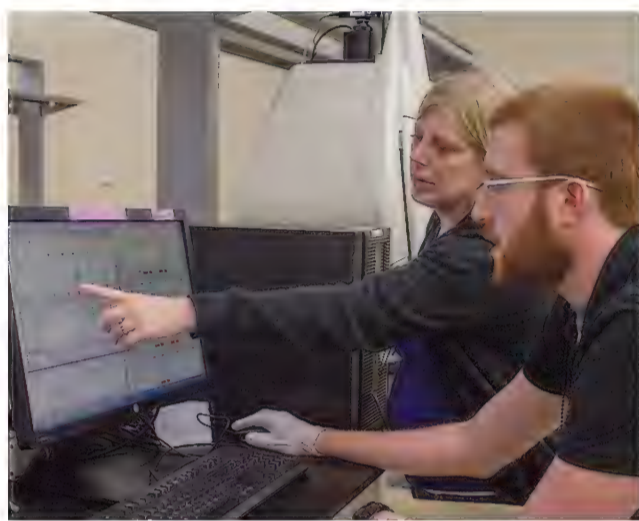
STUDENTS

With the Garden's Teen Network, students develop investigation and leadership skills through field-based education programs. They include ECO-ACT, supported by The Saigh Foundation, and the Shaw Institute for Field Training (SIFT). ECO-ACT students learn about ecology and environmental science through outdoor exploration, research projects, and serving as educators in elementary schools. SIFT students receive field training experiences at Shaw Nature Reserve and later apply those skills by assisting scientists with real research projects.

I learned how to communicate science to people. I went on to get my bachelor's and master's in biology and now teach high school science.

*Kelly Kluthe | ECO-ACT
Parkway South High School*

The Garden also offers Research Experiences for Undergraduates (REU) thanks to the support of the National Science Foundation. During this 10-week summer session, college students work alongside Garden mentors on independent projects. They learn all aspects of research, including project design, background research, methods, data collection and analysis, and presentation. At the end, they present their project poster at a public research symposium.



GRADUATE STUDENTS AND FELLOWS

The graduate program at the Garden is considered to be “absolutely essential” according to Dr. Peter Hoch, Garden Curator and Director of Graduate Studies. Students from all over the world come to the Garden to conduct research and receive their master’s and doctoral degrees in biology from one of three local universities: Washington University in St. Louis, Saint Louis University, and University of Missouri–St. Louis. The program dates back to 1885 when the Henry Shaw School of Botany was founded at Washington University in St. Louis. In 1895 the first PhD graduate from the school, Dr. Anna Isabel Mulford, was also the first PhD graduate at the university.

Everything that the Garden touches is meaningful. It’s incredibly valuable to be at an institution that has an appreciation for plants and plant diversity.

Brigitte Williams | Phillip and Sima K. Needleman Endowed Doctoral Fellowship in Conservation Genetics

In addition to the graduate program, the Garden offers several fellowships to support scientists by providing funding to conduct their research here. Most of the graduate students and fellows return to their home countries and become leading scientists, policy makers, and environmentalists.



OTHER PROFESSIONALS

As a world-renowned institution, the Garden is an excellent, accessible resource for botanical professionals from around the world. Collections managers, horticulturists, ecologists, and many more plant professionals visit the Garden to learn first-hand from the experts. Their interests can range from learning how to best manage herbarium collections to understanding the propagation data needed to grow plants. Garden staff also train other professionals abroad. These opportunities can occur in a formal setting, such as an International Union for Conservation of Nature (IUCN) Red List Assessor Training Workshop, or at a more hands-on level, such as helping build a local nursery in Mauritius and teaching the staff how to collect specimens, propagate them, and keep detailed records.

I apply the skills I learned during my visit to the Garden every day. Professionally, it’s very motivating to work with and stay in touch with fellow researchers there.

Marcia Peñafiel | Collections Manager at the National Herbarium in Ecuador

The Garden also works locally with a wide variety of organizations to create greener and healthier spaces. This means working with business leaders and training the different professionals who build, operate, and maintain the places where we live, learn, work, and play. Programs like the St. Louis Green Business Challenge, in partnership with the St. Louis Regional Chamber, and the Shaw Series for Stormwater and Landscaping Professionals are just a few ways that the Garden provides education on plant-based solutions to land and building management issues.



COMMUNITIES

In conservation, capacity building means providing the knowledge, skills, and resources to help people manage natural resources to benefit their own livelihoods as well as the environment. In Madagascar, for example, the Garden hires and trains local people to carry out conservation-related functions like managing a site, patrolling the forest, and leading education programs. It also helps local leaders propose alternative sources of income and sustainable ways to manage forest resources, such as a local nursery, where the community grows native plants to restore the forest. They also grow crops and fast-growing plants that can be sold or used for fire and building materials instead of cutting down the forest.

Capacity building can also mean raising awareness of the importance of biodiversity and conservation. In Peru, for example, the Garden works closely with the government to conserve the Yanachaga-Chemillén National Park. Outreach programs and trainings, coupled with sustainable development initiatives with the communities living in the park’s buffer zone, help protect the park’s rich biodiversity. In St. Louis, the Garden helps coordinate local rainscaping programs that improve water quality and decrease stormwater runoff issues—all improving local biodiversity.

The resources to which you pointed me have been extremely helpful, such that now I am poised to submit a grant proposal to get the bird sanctuary where I live back to health. Thank you!

Nancy Hartman | “Invasive Plants In Your Yard” class participant | Bellerive Acres, St. Louis

The Garden’s public education offerings and events strive to strengthen the connection between people of all ages to the natural world. But one experience can lead to bigger, greater results. “Capacity building can take lots of forms,” says Sheila Voss, Vice President of Education. “But in the end it’s about building the skills and building the will.”



a scientific and historical
TREASURE
reopening henry shaw's museum

Construction and rehabilitation work will begin this February on the Samuel and Dena Sachs Museum as part of the *Garden for the World* campaign. The museum is one of the Garden's most iconic buildings, and its history dates back to Garden founder Henry Shaw and his vision for the Missouri Botanical Garden. By the end of 2017, when the project is set to be completed, the museum will once again open its doors to the public.

When Shaw was building the Garden, he drew inspiration from some of the magnificent gardens and estates of Europe. However, it was Dr. George Engelmann, one of the great early American botanists, who envisioned the Garden being more than a public park. With the assistance of Harvard botanist Asa Gray and Sir William

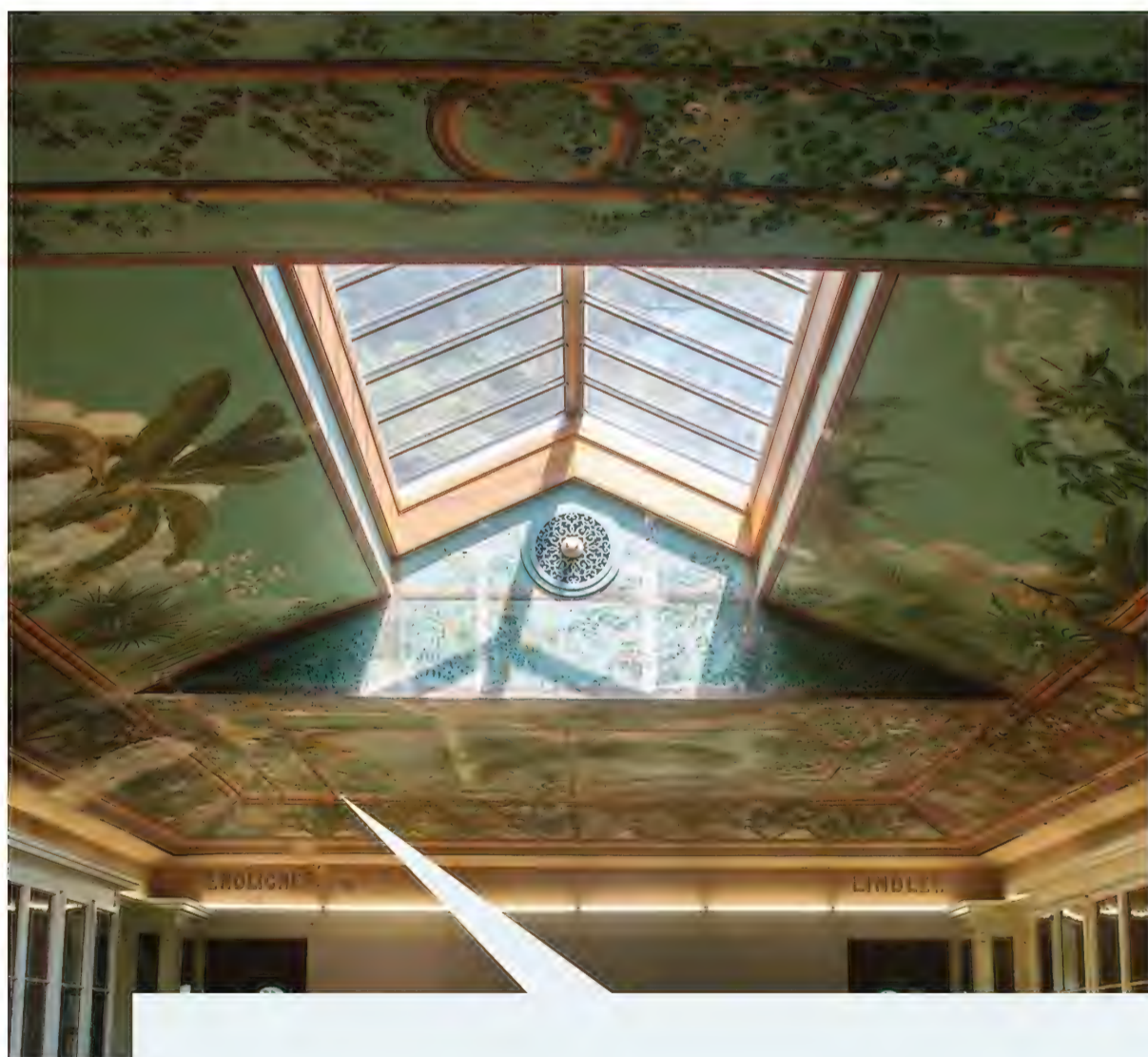
Hooker, director of the Royal Botanic Gardens, Kew, Dr. Engelmann persuaded Shaw to ensure the Garden was involved in scientific work and included a herbarium and a library. Shaw's museum was established in 1859, the same year that the Garden officially opened its doors to the public. It housed the Garden's original library, herbarium, and natural history specimens.

Since Shaw's death in 1889, the building has served many functions—from research lab to offices to restaurant. Since its closing in 1982, it's only open on special occasions, such as Shaw's birthday celebration each July 24. When Dr. Peter Wyse Jackson became president of the Garden in 2010, he recognized the building's historic importance and called for its renovation and restoration.

The most significant change will be the addition to the east side of the building. This new space will feature updated and expanded restrooms and an elevator, both of which make the museum accessible to everyone.

Following the standards for the treatment of historic properties by the National Park Service, the new addition will look different from and protect the integrity of the historic building and its environment. Large glass panels will be used as well to avoid obstructing the view from the east.

The new lobby will be accessible through new accessible pathways. They will provide access to the lower level, which will serve as a gallery. The new staircase will link the two floors of exhibits.



Some of the rehabilitation work in the original building includes restoring the architectural features to create a new exhibit space. An archival investigation will help recreate the original ceiling mural. The restored canvas will be attached to the new drywall ceiling.

photo by Josh Nezam; renderings and drawings provided by Christner Inc.

Thank You!

The Garden is grateful to the following major donors for supporting the work on Henry Shaw's museum, creating the Samuel and Dena Sachs Museum.

Leadership Gifts

Gertrude and William A. Bernoudy Foundation
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The Sachs Fund Trust

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Mr. and Mrs. Jeffrey A. Stuerman

Watch the Video!

Take a virtual tour of the historical museum, learn more about the building's history, and get more details about the work that's being done. Check out the Garden's YouTube channel or visit www.mobot.org/fortheworld.

your garden in the WINTER

expert advice on what to do
this season

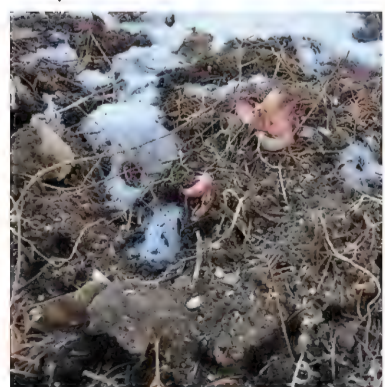
Ask any gardener, and they'll tell you that there isn't much downtime in gardening. Even in the cold winter months, there's always something to do—from pruning to early seed starting. As Senior Horticulture Supervisor June Hutson says, “There's hardly any time when it's not appropriate to do some kind of gardening.”

We sat down with Hutson and Chip Tynan and asked them to share their best tips and their favorite highlights of gardens in the winter. Together, they have seven decades of gardening experience. Tynan is the Coordinator of the Garden's Horticulture Answer Service and has been with the Garden for more than 30 years. Hutson oversees the William T. Kemper Center for Home Gardening and is retiring this December after 40 years at the Garden.

Mulching

It's hard to pinpoint the exact day of the year when it's best to mulch in the late fall and winter. Hutson likes to say that the best day to mulch is Thanksgiving Day. Turkeys and football games aside, just think of it as an easy date to remember. In St. Louis, the coldest weather often comes after Thanksgiving, so keep a close eye on the temperatures and just make sure you mulch when the ground is frozen.

The reason for waiting is that when you put your mulch down on frozen soil, it seals the cold in rather than excluding it, which can lead to heaving problems later.



Frost heaving is caused by wide temperature fluctuations, with repeated cycles of freezing and thawing. These expansions and contractions of the soil cause the roots to break or be exposed above the soil, which leaves them vulnerable to the elements.



Fallen Leaves

What to do with all the leaves that fall off trees is a much-debated subject. On the one hand, while dried leaves can benefit well-established grass if they are mowed and allowed to decompose in place, deep layers of leaves can smother new grass by cutting off access to light. Use a leaf blower instead of a rake with new grass because the rake could uproot all the shallow roots. “The new grass needs every single moment of growth in order to establish a root system that can stand up to whatever rigors winter is going to present,” Tynan says.

On the other hand, leaving leaves on the ground can create hibernating homes for beneficial insects or other bugs that birds eat. “In a home landscape, there's always going to be compromises in order for you, the gardener, to decide what elements you want to favor,” says Tynan. “If you want a clean slate, by all means create a clean slate. It's your garden; make yourself happy. But if you are interested in promoting elements of wildlife, then you can manage your home garden to favor those elements.”



(left) Leaves on the ground, whether on your whole garden or in a dedicated area, will lead to a greater diversity of birds rooting around in leaf litter for insects to eat. (right) Witch hazel blooms at a time of year when many have cabin fever. (opposite) Birds will feed on the seed pods of spent flowers. Their winter aspect is so beautiful that we should consider the wonderful views in the garden instead of cutting it all down in the fall.

Beneficial Insects

As more people become familiar with the beauty and environmental benefits of incorporating native plants into their landscapes, pollinators are also benefitting. If you're growing late-season flowers such as asters and sunflowers, don't get rid of their tall stalks at the end of the season. Many serve as winter homes for beneficial creatures that are going to come back to your garden in the spring. "Let the insects complete their life cycle," Tynan says. "The vast majority of insects that occur in our garden are not damaging our garden. A lot of them are making a living by eating the things that are damaging our garden."

It's important to familiarize yourself with pests and beneficial insects. With all the leaves off the trees, winter is an excellent time to scout for pests like eastern tent caterpillar and apple cedar rust galls. They're easier to control at this time of year, when they're only egg masses, than when they're already causing problems in the spring and summer.

Pruning

The best time to prune depends on the plant's dormancy cycle. The first step is to get familiar with the natural bloom cycles of the trees and shrubs in your garden. Winter is the time to prune those that bloom late in the summer or early in the fall. "Ideally, winter pruning will be done before the buds break and start to grow in the spring," Tynan explains.

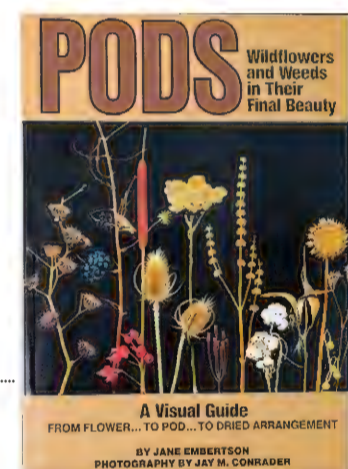
Mild spells later in the winter are a good time to prune your fruit trees. Start with your apples and pears and then your stone fruits like peaches, plums, and cherries. Late February is not too early to start pruning these, and in all cases it should be completed before the buds swell and flower.

Winter Beauty

Both Hutson and Tynan agree that the concept of cleaning up the fall garden is very outdated. Not doing so allows you to expand your mindset about the winter beauty in your garden. Consider leaving some of your plants in place for their dried seed pods. They will feed birds in the winter and can look just as beautiful as they did when they were flowering and green. As Tynan points out, "We spend perhaps more time in the *pod* season than we do in the green season."

Incorporate winter-blooming favorites to extend the flowering season, such as snow drops, winter aconites, Siberian squills, and witch hazels. As some of their names indicate, this is their time to shine. "I always find that the early bulbs are the most beautiful because you're so hungry for plants," Hutson says. "Their beauty is more appreciated when it's not among everything else that's blooming."

If you're looking for inspiration, visit the Garden in the winter and see some of these winter beauties in their full glory. "The winter-flowering bulbs are literally the little bridge that crosses the season," says Tynan. "There are vital elements in the year-round, seasonal aspects of gardens."



Books are elements of the garden, too. This is a classic favorite of Tynan and Hutson.

Learn More!

For more information, visit the wall-size seasonal gardening calendar in the Center for Home Gardening or www.mobot.org/gardeninghelp, where you'll find everything from checklists for gardening by month to information about common pests and more.

just for members



Garden Gate Shop Members-Only Rewards Card

For every \$25 you spend, you get a punch. With 10 punches you earn a free gift of your choice up to \$40. Completed cards are entered into quarterly drawings. The first drawing is December 3. You also get double punches on Member Event days.

Garden Glow Member Preview

November 18 | 5–10 p.m.
This special members-only preview includes both Garden Glow and Gardenland Express. Come see what's new with both holiday venues. Timed tickets available. \$14 member adults; \$6 member children. Advance ticket purchase required.

Winter Jewels Member Morning

November 28 | 10 a.m.–noon | Butterfly House
Enjoy the warmth of the Tropical Conservatory and the beauty of jewel-toned butterflies. Go on a treasure hunt, discover fairies, encounter gnomes, and participate in special activities. Reservations required.

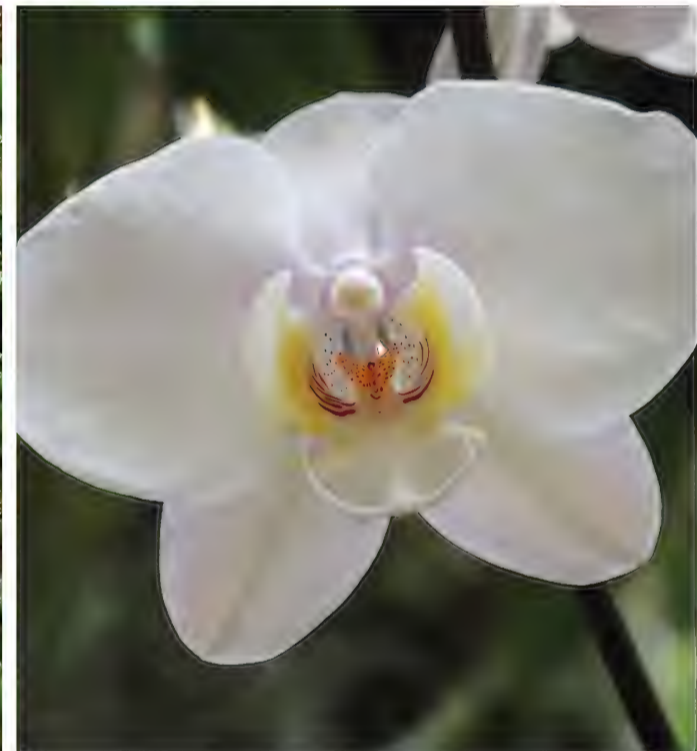
Breakfast with Santa

December 3 | 8–10:30 a.m.
Ridgway Visitor Center
Visit with Santa as he makes his yearly stop at the Garden for our members-only breakfast buffet. Make crafts and take photos with Rudolph, Frosty, and Mrs. Claus. Advance ticket purchase required.



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Information and registration at (314) 577-5118 or www.mobot.org/memberevents unless otherwise noted.



2017 Orchid Show Member Preview
February 3 | 5:30–8:30 p.m. | Orthwein Floral Display Hall
Members see it first! Enjoy a special nighttime viewing of the 2017 Orchid Show, featuring the most delicious orchid, vanilla. Cash bar available; Sassafras and Garden Gate Shop open.

Announcing the 2017 Member Speaker Series
The Garden offers a monthly presentation for members only. Formerly called Member Days, these free, lively presentations feature local experts offering a light, informative look at a variety of topics through the year.

History of the Climatron
January 17 | 11 a.m.–noon
Shoenberg Theater
Join us for an exclusive presentation about the Garden's Climatron. Join Garden archivist Andy Colligan for a look at this iconic structure, the world's first geodesic dome to be used as a greenhouse. Free for members. Reservations required.

All About Orchids
February 4 | 11 a.m.–noon | Shoenberg Theater
An expert panel of Garden horticulturists and Master Gardeners leads a discussion and demonstration on orchid basics, including flower types, ideal growing conditions, and repotting. Free for members. Reservations required.

special events

Holiday Wreath Display and Auction

November 19–January 1 |
Ridgway Visitor Center

This annual holiday exhibit features unique creations donated by some of the area's finest floral designers. Wreaths are sold by silent-auction bidding. Proceeds benefit the Garden's Horticulture program. Included with Garden admission.



November 19–January 1

More than a million lights surround you with unique installations amid the Garden's most iconic locations. Enjoy interactive photo opportunities, traditional holiday music and festivities, delicious food and drinks, and more as the Garden is transformed into a winter wonderland.

www.mobot.org/glow

Victorian Christmas at Tower Grove House

November 16–January 1

See the Victorian country home of Garden founder Henry Shaw decked for the holidays in true Victorian style (closed Thanksgiving Day and Christmas Day). Enjoy storytelling on Wednesdays and Saturdays at 11 a.m. and Sundays at 1 p.m. Don't forget to also stop by the William T. Kemper Center for Home Gardening for more holiday decorations.



Kwanzaa: Festival of the First Fruits

December 28 | noon–4 p.m. |
Ridgway Visitor Center

This contemporary African-American holiday centers around the feast table of the harvest. Join us for a day of storytelling, craft and jewelry displays, and musical performances. Included with Garden admission.

Gardenland Express Holiday Flower and Train Show

November 19–January 1

Presented by Wells Fargo Advisors

Explore some of the plant families native to other regions that call the Garden home during the holidays. Open during Garden Glow nights. Free for members and member children; \$5 daytime admission; \$2 nighttime admission (ages 3 and up)



Chanukah: Festival of Lights

December 18 | noon–4 pm. |
Ridgway Visitor Center

A traditional Jewish holiday celebration that includes festive Israeli music and dance, a menorah-lighting ceremony, and Chanukah merchandise provided by local vendors. Included with Garden admission.

Orchid Nights—NEW!

February 9 and March 9 | 6–9 p.m. |
Ridgway Visitor Center

For two nights only, enjoy an exclusive lighted viewing of the orchid displays with live music, tastings from local wineries, and a full cash bar. Your ticket includes one complimentary vanilla-inspired cocktail, or your choice of beer or wine. \$15 members; \$20 nonmembers. Visit www.mobot.org/orchidshow.



Trivia Night—Garden Style

February 18 | 6–10 p.m. | Monsanto Hall

Grab your team and join the Young Friends of the Garden for 10 rounds of trivia. Enjoy admission to the Orchid Show, a wine pull, silent auction, 50/50 raffle, and attendance prizes. Beer, soda, and water included. Proceeds support the Children's Garden. \$350/table of 10. Attendees must be at least 21.

Advance tickets required:
www.mobot.org/trivia.

From gardening tools and unique toys to vintage items and local products, the Garden shops have just what you're looking for. Look for these icons to know where each event or sale is taking place.



Garden Gate Shop

4344 Shaw Blvd.
St. Louis, MO 63110
Monday–Sunday
9 a.m. to 5:30 p.m.
(314) 577-5137



Butterfly House Gift Shop

15193 Olive Blvd.
Chesterfield, MO 63017
Tuesday–Sunday
10 a.m. to 4 p.m.
(636) 530-0076 ext. 15



Little Shop Around the Corner

4474 Castleman Ave.
St. Louis, MO 63110
Tuesday–Saturday
10 a.m. to 4 p.m.
(314) 577-0891

Seasonal Closings

The Butterfly House, including its gift shop, and Little Shop Around the Corner will close temporarily in January for annual inventory and maintenance work. Please mark your calendars and don't forget to stop by in February for more events and great sales. Sassafras, the Garden's café, will be closed January 9–13 and January 16–20 as well, but it will be open on the weekends.

JUST FYI

First Fridays

First Friday of the month | 🌿

Discover something new—from book signings to food samplings to trunk shows. More at www.mobot.org/shop.

Dine and Glow

November 19–January 1 | 5–8 p.m.

Enjoy your favorite Sassafras items during your Garden Glow visit. Our Dine & Glow package offers an entrée and a drink for \$12 for adults and a kids menu item, dessert, and a drink for \$8 for children.

Winter Jewels Sale

November 25–December 31 | 🦋

Celebrate Winter Jewels and check out our holiday and decorative décor sale and save up to 75% off through December 31 (Closed December 23, 24, and 25). See shop for more details.

Member Double Days

December 4–5 and February 5–6 | 🌿 🦋 🪑

All Garden members receive 20% off purchases or double card punches.

Staff and Volunteer Sale

December 7–9 | 🌿 🦋 🪑

As a thank you for making the Garden a world-class institution, all Garden staff and volunteers receive an extra 10% off their purchases.

Free Gift Wrap at the Shop

December 10–11 | 🌿

We know this is a busy time, so any item you purchase this weekend can be gift wrapped for free. See shop for details.

Little Shop Around the Corner Year-End Clearance Sale

December 27–31 | 10 a.m.–4 p.m. | 🪑

Start the year off right with unique vintage items for your home.

» staff picks



Indoor Amaryllis Kits

Amaryllis are easy bulbs to grow, and these indoor amaryllis kits from the Netherland Bulb Company make it even easier. The kit includes the pot, the bulb, and starting soil. \$25 small pot and \$35 large pot; available in various pot colors.. Get yours today at the Garden Gate Shop. They also make great gifts for the gardener in your life or as a hostess gift.



Live Trends Succulents and Air Plants

If you're looking to add the beauty of plants and art to your everyday spaces, check out Live Trends succulents and air plants. They come in a variety of containers—from magnetic vases to reclaimed wood containers to hanging vases. Prices vary from \$15 to \$40. They're the perfect gift or accessory for your home or office. Find them at the Garden Gate Shop.

commemorative gifts

July–September 2016.

A commemorative gift is a wonderful way to honor family and friends. Gifts of \$50 or more are listed in the *Bulletin*. For more information about giving opportunities at the Missouri Botanical Garden, please call (314) 577-5118 or make a commemorative gift at www.mobot.org/tributes.

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Gloria Vaporean and Scott
Jones

John Wannemacher
Vivien Gardner

Gabe Weil
Carolyn and Joseph Losos

**Mr. Robert B. Weinman,
Jr.**
John and Helen Hume

E. Curtis Wells
Lois Clausen

Rosmarie Wenzel
Chris and Art Morlock

Mrs. Virginia L. White
The Slusher Family

Mrs. Bashie Williams
Dawn Munsey and Bill
Retzlaff
Tim and Laura
Schoenecker

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Mr. and Mrs. John C. Smith

Reza "Baba" Zoughi
Willa Goodman

Mrs. Etta F. Zubicic
Dennis and Mary Browning
Mr. John L. Dailey

MEMBERS' ENTRY COURT

July–September 2016.
For more information, call
(314) 577-5118 or visit
www.mobot.org/donate.

Engraved Clay Bricks

Claire Banaskavich
Jason Banaskavich

Ms. Dorothy A. Brockhoff
Mr. Roger P. Bernhardt
Dorothy M. Forro

Richard, Margaret, and
Charles Hoey

Mr. Leon G. Bierbaum
Mr. Roger P. Bernhardt

Jack Davenport
Mrs. Kathleen Fry

Kathleen T. DeNoyer Bell
Mrs. Kathleen Fry

Mary A. Finch
Monsanto/The Climate
Corporation

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Family Hospice

Barre Vosburgh
Mr. and Mrs. Gordon M.
Wiegand

Erika Waterwiese
The Waterwiese and
Hayward Families

Wolfgang Waterwiese
The Waterwiese and
Hayward Families

BUTTERFLY HOUSE

July–September 2016.
Call (314) 577-5118 or visit
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donate to learn more.

Pavers

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Carolyn M. Dulin

Brooke and Carson
Mr. and Mrs. Virgil D.
Seib, Jr.

Harmony Culbreath
David and Beth Zeitler

Cindy and David Hults
Jason and Alyson Hults
Jonathan and Bronywn
Hults
Reagin Hults and Sid
Curless

Jo Ann Metzger
Mrs. Jan Stewart

Rick Smith
Patricia Smith

Maintaining the Trains

If you are a fan of Gardenland Express, then you might be a fan of Greg Krekeler. For nearly 18 years, Greg has put his time and talent to work on the G-scale trains that are an essential element of our annual holiday flower and train show. That includes everything from laying out track



to wiring the systems to repairing the trains themselves. Did we mention that Greg is a volunteer? "Greg is one of the great volunteers that work with us each year to make sure the holiday flower and train show happens, and that it

functions at the level our visitors expect," says Pat Scace, the Garden's Floral Display Supervisor. "Our show puts a lot of wear on the trains, and they require a lot of support to keep them running. That support is Greg."

Gardenland Express is redesigned every year, so the elevated tracks and electrical systems needed to keep the trains moving are always changing. Each design takes months to complete. "It all started with one donated train around a single tree about 18 years ago," Greg says. "The train needed to be maintained, so I came down to the Garden and saw all these kids looking at that little train. And being a grandpa, I liked that. So we teamed up. And

one train became eight full sets in about three years."

Developing the train layout alone includes considering placement of power sources, drains, live plants, display elements, and the

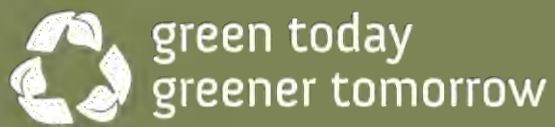
paths for visitors. The trains need regular maintenance and repair. Replacement parts are becoming harder to find, so Greg sometimes remakes parts himself. "Some of our engines are twenty years old now, and the parts are made in Germany," Greg says. "So we have to plan ahead. I've changed all the wheels out from plastic to steel, for example, to help them run longer. And we have a new donated train set in the show this year, checked out and repainted and ready to go."



Pat and Greg preparing the train tracks for the 2016 Gardenland Express Holiday Train and Flower Show.

Don't Miss It!

Come see the fruits of this labor of love during the 2016 Gardenland Express Holiday Flower and Train Show, on display in Orthwein Floral Display Hall November 19–January 1.



The Missouri Botanical Garden strives to make the most sustainable choices possible to benefit people, plants, and the planet. That's why we offer an interactive online version of the *Bulletin* as well as a downloadable PDF. Sign up by sending an email to membership@mobot.org. Let us know if you'd like to forego your paper subscription.

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ORCHID SHOW

February 4–March 26
www.mobot.org/orchidshow

MISSOURI BOTANICAL GARDEN

calendar

www.mobot.org/events

december | january | february



Orchid Show "All Vanilla"

February 4–March 26

The annual Orchid Show offers visitors a once-a-year opportunity to see a rotating display of hundreds of orchids from the Garden's expansive permanent living collection. This year, delight in seeing some of the Garden's *Vanilla* orchids and learn all about the fascinating species behind one of the world's all-time favorite flavors.

\$5 per person | Free for members

Member-Only Preview
February 3 | 5:30–8:30 p.m. | Free

www.mobot.org/orchidshow

Garden Glow
November 19–January 1



Gardenland Express

Holiday Flower and Train Show

Presented by 

Sponsorship by CBIZ & Mayer Hoffman McCann P.C. and Mr. and Mrs. James G. Berges

November 19–January 1

open during Garden Glow nights

Free for members and member children
\$5 daytime admission (ages 3 and up)
\$2 nighttime admission (ages 3 and up)

Visitors of all ages will enjoy the G-scale trains traveling through a miniature holiday landscape. Explore some of the plant families native to other regions around the world that call the Garden home during the holiday season.

www.mobot.org/gardenlandexpress



Winter Jewels

A HOLIDAY CELEBRATION

at the Butterfly House

November 25–December 31

10 a.m.–3 p.m. | Tuesday–Sunday

closed December 23, 24, and 25

Escape the cold and surround yourself with the magic of the season! Go on a treasure hunt through our Animal Exhibit Hall, discover fairies in our Tropical Conservatory, and make new friends in the Gnome Forest. But be sure to guard your treasure, and watch out for battling pirate cockroaches!

www.butterflyhouse.org



Valentine's Night Hike

at Shaw Nature Reserve

February 11 | 7–10 p.m.

\$24 members | \$29 nonmembers

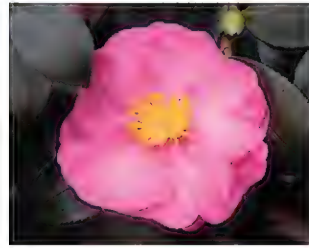
Bundle up and spend the evening under the stars. After the hike, enjoy hot beverages and delectable desserts. Registration required.

www.shawnature.org

december 2016

average temperature: low 26° | high 42°
average precipitation: 2.86 in.

What's in bloom?



Camellia



Lion's ear



Cactus

11/16–1/1 **Victorian Christmas at Tower Grove House**
Wednesdays–Sundays | Closed Thanksgiving Day
and Christmas Day | 10 a.m.–4 p.m.

11/18 **Garden Glow Member Preview** | 5–10 p.m.

11/19–1/1 **Garden Glow** | 5–10 p.m. | Closed Christmas Eve
and Christmas Day | \$
Presented by Wells Fargo Advisors

11/19–1/1 **Gardenland Express** | 9 a.m.–4 p.m. | also open
during Garden Glow nights | \$ RVC
Presented by Wells Fargo Advisors

11/19–1/1 **Holiday Wreath Display and Auction**
9 a.m.–4 p.m. | RVC

11/25–12/31 **Winter Jewels** | 10 a.m.–3 p.m. (closed on Mondays,
December 23, 24, and 25) | BH

11/28 **Winter Jewels Member Morning** | 10 a.m.–noon

12/3 **Breakfast with Santa** | 8–10:30 a.m. |

12/7–12/9 **Staff and Volunteer Sale** at the shops | GGS, BHGS, LS

12/10 **Saturday with Santa** | 1–4 p.m. | RVC

12/9–12/11 **Supper with Santa** | 5–7 p.m. |

12/16–12/18 **Supper with Santa** | 5–7 p.m. |

12/18 **Chanukah: Festival of Lights** | noon–4 p.m. | RVC

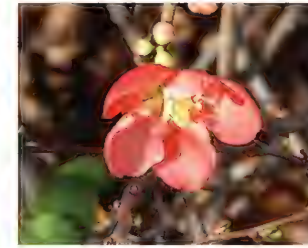
12/27–12/31 **Little Shop Around the Corner Year-End
Clearance Sale** | 10 a.m.–4 p.m. | LS

12/28 **Kwanzaa: Festival of the First Fruits** |
noon–4 p.m. | RVC

january 2017

average temperature: low 21° | high 38°
average precipitation: 2.14 in.

What's in bloom?



Flowering quince



Chinese witch hazel



Bloodtwig dogwood

11/16–1/1 **Victorian Christmas at Tower Grove House**
Wednesdays–Sundays | Closed Thanksgiving Day
and Christmas Day | 10 a.m.–4 p.m.

11/19–1/1 **Garden Glow** | 5–10 p.m. | Closed Christmas Eve
and Christmas Day | \$
Presented by Wells Fargo Advisors

11/19–1/1 **Gardenland Express** | 9 a.m.–4 p.m. | also open
during Garden Glow nights | \$ RVC
Presented by Wells Fargo Advisors

11/19–1/1 **Holiday Wreath Display and Auction**
9 a.m.–4 p.m. | RVC

1/1–1/31 Little Shop Around the Corner is closed,
through January 31.

1/1–1/27 The Butterfly House is closed, *through January 27.*

1/2–3/31 Tower Grove House is closed, *through March 31.*

1/9–1/13 Sassafras closed

1/16–1/20 Sassafras closed

1/17 **Member Speaker Series: History of the
Climatron** | 11 a.m.–noon |

1/28 The Butterfly House reopens, 10 a.m.–4 p.m.

1/28–1/29 **Hot! Hot! Hot!** | 10 a.m.–3 p.m. | BH

february 2017

average temperature: low 27° | high 44°
average precipitation: 2.28 in.

What's in bloom?



Jade plant



Hellebore



Heavenly bamboo

1/2–3/31 Tower Grove House is closed, *through March 31.*

2/1 Little Shop Around the Corner reopens |
10 a.m.–4 p.m. | Tuesdays–Saturdays

2/1–2/28 **Morpho Mania—now in February,**
through February 28 | BH

2/3 **Orchid Show Member Preview** |
5:30–8:30 p.m. |

2/4–3/26 **Orchid Show "All Vanilla"** | 9 a.m.–5 p.m. | Free for
members | \$ RVC | Free for members

2/4 **Member Speaker Series: All About Orchids** |
11 a.m.–noon |

2/9 **Orchid Nights—NEW!** | 6–9 p.m. | \$ RVC

2/11 **Valentine's Night Hike** | 7–10 p.m. | \$ SNR

2/12 **Celebrate the Gospel** | 3 p.m. | RVC

2/18 **Trivia Night—Garden Style** | 6–10 p.m. | \$ MH

2/25–2/26 **Science & Conservation and EarthWays Center
Open House** | 1–4 p.m. | MC and CBEC

your garden



When do I prune my cherry, plum, and peach trees?

The best time to prune stone fruit trees is in late winter through early spring. Plums, cherries, peaches, and other stone fruits need yearly pruning. If you prune regularly, you improve the chances for a good crop every year. Regular pruning also reduces pest problems, keeps trees attractive, and improves tree longevity.

When you plant any fruit tree and each year thereafter, prune out any dead or broken branches. Remove any conflicting branches, that is, branches that rub or cross against each other. This can cause a wound in time, and diseases can enter easily through these wounds.

Each year remove any dead or broken branches, water sprouts, suckers, and any new conflicting branches that have developed. Water sprouts are long straight shoots that grow vertically from the trunk and main branches. They grow rapidly, conflict with other branches, and are unproductive. Suckers are also fast-growing straight shoots, but they grow out from the base of the trunk. Suckers that grow from the root stock should be removed promptly. Make sure the center of the tree is kept open to admit light and air.

Whenever you prune, make the cut flush with the branch collar and avoid leaving stubs as they do not heal well and invite disease. Pruning paint is not necessary; in fact the wounds heal better when left untreated.

More advice and tips at www.mobot.org/gardeninghelp.



Plant Societies' Shows and Sales

Get the latest information about your favorite plant society's show and sale by visiting www.mobot.org/plantsocieties.

Key (All events take place at the Garden unless otherwise noted.)

BH	Butterfly House	KC	Kemper Center for Home Gardening		Sassafras
BHGS	Butterfly House Gift Shop	LS	Little Shop Around the Corner		Members-only event
CA	Cohen Amphitheater	MC	Monsanto Research Center		Double punches for Garden Gate Shop Rewards Card
CBEC	Commerce Bank Center for Science Education	MH	Monsanto Hall (in RVC)		Reservations required
CHD	Children's Garden	RVC	Ridgway Visitor Center		Fee required
CL	Climatron lawn	SNR	Shaw Nature Reserve		
GGS	Garden Gate Shop	SP	Spink Pavilion		
JE	Jordan Education Wing (in RVC)	ST	Shoenberg Theater (in RVC)		

bulletin

Spring 2017

Vol. 105, No. 2

www.mobot.org



MISSOURI BOTANICAL GARDEN



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Thank you! Your membership provides critical support for our international and local plant science and conservation work, and Garden memberships contribute 20% of our annual operating funds.

To learn more about the benefits of your membership, visit www.mobot.org/membership, email membership@mobot.org, or call (314) 577-5118.

hours and admission

For hours and admission prices at our three locations, visit www.mobot.org, www.butterflyhouse.org, and www.shawnature.org.

contact

Missouri Botanical Garden
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St. Louis, MO 63110
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on the cover

The Japanese Garden is celebrating its 40th anniversary this year. It was dedicated on May 5, 1977.
Photo by Nathan Wambold.

credits

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To discover and share knowledge about plants and their environment in order to preserve and enrich life.

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from the president



You can taste, feel, smell, and see the signs of spring all around you, especially when you visit the Missouri Botanical Garden, Sophia M. Sachs Butterfly House, and Shaw Nature Reserve. This year we're excited to celebrate our second Meet Me Outdoors In St. Louis weekend festival, and we

invite you to reconnect with nature and celebrate the many benefits of spending time outdoors (see page 16). No matter if it's learning more about your home garden, enjoying a quiet read surrounded by butterflies, or paddle boarding on the river, we hope you join us in discovering and conserving nature and the great outdoors.

We're also excited to bring a new art exhibit to the Garden this summer: *Garden of Glass: The Art of Craig Mitchell Smith*. The artist, like many of us, finds some of his most enlightening "Aha!" moments when he's surrounded by plants (see page 14). Come visit us and take in the larger-than-life fused glass fantasy pieces inspired by nature.

Special events and beautiful displays are part of what makes the Garden an iconic cultural institution that welcomes more than one million visitors each year. It is also a world-renowned botanical research center. Every year, our scientists travel throughout the world, many times to some of the most remote places on Earth, to make new discoveries and advance our knowledge of plants and the environment (see page 6). At the core of our scientific and horticultural efforts is the goal to study and protect plants. After all, our lives—especially future generations' lives—depend on it.

With that in mind, I'm delighted to share with you that, after approval from our Board of Trustees last September, our Strategic Plan is now in place to take the Garden through 2020. This plan represents several years of work by a wide range of stakeholders, including staff, volunteers, our Board, community leaders, and more. The plan is intended to be a living document while always remaining faithful to our mission: to discover and share (see page 10). I invite you to delve into the plan, and look forward to hearing your thoughts on how to take your Garden through 2020 and beyond.

A handwritten signature in black ink that reads "Peter Wyse Jackson". The signature is written in a cursive, flowing style.

Dr. Peter Wyse Jackson, *President*

what's new?



Garden and Boeing representatives at a November grant award ceremony recognizing all the organizations The Boeing Company will be supporting in 2017.

Support for Early Childhood Education

The Boeing Company recently renewed its support to the Garden's *Sprouting Science in St. Louis: Digging Deep with Urban Youth* program. The joint initiative with St. Louis Public Schools

weaves early childhood education and urban biodiversity through classes, outreach, family engagement events, and professional development for teachers.

10+ Years

since last admission price change

New Garden Admission Prices

Last year, the Garden's Board of Trustees and the Botanical Garden Subdistrict approved changes to the Garden's adult general admission prices. On December 13, the Zoo Museum District approved the proposed changes, and the new adult admission prices took effect February 1. They changed from \$4 to \$6 for St. Louis City and County residents, with proof of residency, and from \$8 to \$12 for nonresidents. Admission for City and County senior residents changed from \$3 to \$4. The Garden will continue to offer free admission to all visitors 12 and younger. Residents of St. Louis City and County will continue to enjoy free admission on Wednesdays and Saturdays before noon. Members will continue to enjoy free general admission.

This small increase will both offset rising operational costs, and allow us to expand the programs which grow the Garden's mission.



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MAINSTREAMING BIODIVERSITY FOR WELL-BEING

Garden President at COP13

Last December, Garden President Dr. Peter Wyse Jackson attended the 13th Conference of the Parties to the Convention on Biological Diversity in Cancun, Mexico. He shared the final recommendations adopted by the Global Partnership for Plant Conservation (GPPC). They were the result of the international 2016 GPPC Conference that the Garden hosted in the summer to discuss the importance of plants for global sustainability and the future of plant conservation.

Work Begins on New Display That Will Showcase Conservation Work

Soil preparation work has begun in the northeast side of the Climatron®. The 1,400-sq-ft space will eventually become the Indian Ocean Island Plant Display, which will focus on endangered species from Madagascar and the Mascarene and Seychelles archipelagos. These islands have unique, highly threatened floras marked by the large number of plants that occur nowhere else on Earth. "This beautiful new display will connect visitors to the Garden's international conservation work," says Andrew Wyatt, Vice President of Horticulture and Living Collections. "The display will also help our horticulturists learn how to propagate and cultivate these critically endangered species. That knowledge will support ongoing conservation efforts."

Most of the plants are not available commercially because of their rarity, so they will be collected directly from the field or exchanged with other botanical gardens and grown to size in the Garden's tropical nursery before being planted in the display.

seychelles

mascarenes



The 2016 award is made of recycled cork.

Garden Recognized for Outstanding Sustainable Operations

The Garden was recognized at the 2016 St. Louis Green Business Challenge award ceremony on December 2. It received the Award of Achievement–Champion Level for being in the top 5% for advancing sustainability within its operations and programs in a group of 65 businesses. Highlighted accomplishments included 80% waste diversion during the deconstruction phase of the Oertli Family Hardy Plant Nursery, rain water harvesting from the roof of the Temperate House to irrigate the Climatron®, and over 90% waste diversion at signature events. The St. Louis Green Business Challenge is a partnership between the St. Louis Regional Chamber and the Garden. Since its inception in 2010, work of the Garden’s EarthWays Center team in this program has assisted 173 area companies.



(from left) Ann Travis, Barb Hilton, Debbie Jacobs, Tammy Behm, Ron Schlappizzi, Members’ Board President Jeanie Davis, Patty Erker, Anne Lathe, Sally Kriegel, Libby Donnell

New Members’ Board

The Garden welcomes the new board members (pictured above) and officers of 2017.

- President: Jeanie Davis
- 1st Vice President: Doug Wolter
- 2nd Vice President: Kristin Cornett Knapp
- Treasurer: Steffie Littlefield
- General Secretary: Mary Lee Salzer-Lutz
- Event Secretary: Kathy Durel

\$48,000

raised in 2016 for Children's Garden

The Young Friends of the Garden raised more than \$48,000 in 2016 to support the Doris I. Schnuck Children’s Garden through five events. This brings the Young Friends total support of the Children’s Garden to more than \$140,000 in three years. The Young Friends Council has already planned five events for 2017 to continue the success of this five-year commitment to our youngest visitors. The Garden is proud to recognize the Young Friends for this support and grateful for their impact. Visit www.mobot.org/youngfriends for more details.

photos by A.J. Kirk and Robin Powell



(from left) Garden President Dr. Peter Wyse Jackson, Prissy Evans, Greg Evans, and Susan Sachs at the groundbreaking ceremony.

Renovation Begins on Stephen and Peter Sachs Museum

Following a formal groundbreaking last December, renovation work has begun on Henry Shaw’s historic museum. The first stages of construction include reopening the historic wall on Tower Grove Avenue and preparing the space for the new addition.

Construction is on schedule to be completed by the end of 2017. Visit www.mobot.org/museum for renderings of the finished space and construction updates.

did you know?

more than **120** new plant species described in 2016 by Garden scientists

The new species reflect the Garden's Science and Conservation program's global scope:



In addition to the new species, other 2016 highlights include:

- Senior Vice President of Science and Conservation Dr. James S. Miller co-authored a new family, Coldeniaceae.
- Dr. Rosa Ortiz co-authored a new tribe, Spirospermeae, in the moonseed family, Menispermaceae.
- Dr. Li Bing Zhang co-authored two new fern genera, *Draconopteris* and *Malaiifilix*.
- Dr. Ihsan A. Al-Shehbaz co-authored three new genera in the mustard family, Brassicaceae: *Anzhengxia*, *Metashangrilaia*, and *Rudolf-kamelinia*.



Recent Grants and Recognitions

\$75,000 Survey of the Rubiaceae (quinine and coffee family) for the World Flora Online and TROPICOS, Dr. Charlotte Taylor, *William Froelich Foundation*

\$60,000 Systematics and molecular phylogeny of various fern groups, Dr. Li-Bing Zhang *Chengdu Institute of Biology, Chinese Academy of Sciences*

\$30,000 Cave speciation of the fern genus *Polystichum* (Dryopteridaceae), Dr. Li-Bing Zhang *National Natural Science Foundation of China*

Garden President **Dr. Peter Wyse Jackson** was selected for the 2017 Science Leadership Award presented by the Academy of Science–St. Louis. The award recognizes a distinguished individual or organization that has played an important leadership role in the development of science and scientists in the St. Louis region. He will be formally honored at an awards ceremony on April 6.

A new genus, *Pruskortizia*, was named after two garden researchers: **Dr. John Pruski**, specialist of Neotropical Asteraceae, and **Dr. Rosa Ortiz**, specialist of the Menispermaceae in South America. Together they collected *P. macrocarpa* in San Martin, Peru.

Garden Hosting Ethnobotanical Presentation

Dr. Robert Bye and Edelmira Linares of the Jardín Botánico del Instituto de Biología Universidad Nacional Autónoma de México will present a lecture on the importance of ethnobotany in Mexico on Friday, April 7 at 4 p.m. in the Garden's Shoenberg Theater. This John Dwyer Lecture in Biology, hosted in partnership with Saint Louis University, is part of the new 2017 Discover + Share Speaker Series. The event is free to the public.



40th anniversary

**Japanese Garden
Dedicated May 5, 1977**

Q. In addition to systematics, what other botany fields do Garden scientists study?

A. In 1890, Albert Spear Hitchcock traveled to the Caribbean and became the first Garden staff member to collect botanical specimens in the tropics. More than a century later, Hitchcock's adventurous spirit and hunger for knowledge live on through the Garden's global research program. The Garden is known for its expertise in the highly specialized field of systematics, also known as taxonomy. Plant specimens collected in the field arrive at the Garden and are the building blocks of botanical knowledge. Pressed between sheets of paper and accompanied by field notes, they await identification, cataloging, classification, and analysis. Amid these stacks of specimens is where the bulk of the botanists' research takes place.

However, the field of botany is extensive, and Garden scientists also specialize in other areas. These include paleobotany (biology and evolution of fossil plants), genetics (plant heredity and variation), ethnobotany (useful plants and the relationships between humans, plants, and their environment), plant ecology (relationships between plants and the world in which they live), conservation biology (protecting biodiversity), and ecological restoration (recovery of degraded ecosystems). To learn more about the Garden's scientific work, please visit www.mobot.org/plantscience.



Garden Receives Generous Support to Study Global Change

Dr. Alan Graham, Curator of Paleobotany and Palynology, has generously provided funding to support the Garden's Center for Conservation and Sustainable Development (CCSD) and its Global Change program. With this support, the Garden established the Alan Graham Fund in Global Change.

The fund advances the science and conservation of the Earth's biological richness to inform conservation. It supports research integrating paleoecological and contemporary data to understand the effects of climate change, land use, invasive species, and other broad-scale impacts on the origin and maintenance of biodiversity. This information helps conservation practitioners anticipate responses of species to global drivers of change. Specifically, the fund will support fellowships for visiting scientists, interns, and Garden scientists working in the area of global change and conservation, data acquisition, as well as dissemination of results to pertinent audiences, including participation in scientific meetings, and publication costs. To learn more about the ways you can support initiatives like this, visit www.mobot.org/donate.

photos by Tom Incrocci and Andrea Androuais



Call it *databotany*

Dr. Adam Smith,
Assistant Scientist on
Global Change

Dr. Adam Smith studies the different threats to Earth's biodiversity, focusing on the climate change vulnerability of threatened plant species in North America. He joined the Garden's Center for Conservation and Sustainable Development (CCSD) in 2011 as a postdoctoral fellow. Since then, he's been collaborating with fellow CCSD conservation biologists and ecologists to identify and prioritize plant species that need to be protected.

Dr. Smith's work involves both field work and modeling (see page 17). Many of his current projects involve species distribution models (SDMs), which combine environmental and location data to predict geographic distribution based on variables such as temperature, precipitation, and soil type.

Dr. Smith and his team are currently working to develop methods that will help make botanical collections even more useful to their research. Much of the plant data available today represents hundreds of years of botanical research. It's not, however, as comprehensive as what scientists like Dr. Smith need. In the past it was not possible or common to record information on the exact location or habitat conditions of a botanical collection, so much of it can't be used for modeling. "Tens of millions of dollars are spent each year based on these SDMs because they're guiding conservation efforts," he says. "My goal is to find a way to incorporate all the existing data and make it possible for us to use it."

what can you do?

Come Grow with Us!

The Missouri Botanical Garden, Sophia M. Sachs Butterfly House, and Shaw Nature Reserve are more than just beautiful destinations. They are living classrooms that connect people of all ages to the wonderful world of plants—from cooking, painting, and photography courses to green living, outdoor exploring, and gardening classes.

Registration for the spring/summer session is now open, and we have a class for everyone. Now is the perfect time to learn a new skill, discover a new passion, or reconnect with the natural world in a whole new way.



To learn more, look for your course catalog in the mail or visit www.mobot.org/classes.



Run with the Garden

Grab your running shoes and join us for three fun 5K opportunities surrounded by nature's stunning landscapes.

Daffodil Dash

April 8 | 9–10 a.m. |

Shaw Nature Reserve

\$20 members; \$24 nonmembers.

All proceeds benefit Shaw Nature Reserve. Advance registration required: www.shawnature.org.

Tulip Trot

April 30 | 7–9 a.m. |

Missouri Botanical Garden

\$30 members and virtual runners; \$40 nonmembers

Advance registration required: www.mobot.org/tuliptrot.

Garden Gallop

June 25 | 7–9 a.m. |

Missouri Botanical Garden

\$30 members and virtual runners; \$40 nonmembers. All proceeds benefit the Children's Garden.

Advance registration required: www.mobot.org/gardengallop.



Meet the Garden of Glass Artist

Want to take your Garden of Glass experience to the next level? Artist Craig Mitchell Smith will host two lectures at the Garden May 2 and 3 to discuss his process and how he is inspired by nature and his own gardening experience.

Each lecture begins at 7 p.m. and will be preceded by a members-only meet-and-greet. Cocktails available for purchase. \$12 members (6 p.m. meet-and-greet included); \$14 nonmembers (7–8 p.m. lecture only). Advance



registration required: www.mobot.org/classes. For more on Mitchell Smith and the upcoming *Garden of Glass: The Art of Craig Mitchell Smith*, see page 14.



Weekend Festival
April 1 & 2 | 10 a.m.–3 p.m.

Missouri Botanical Garden
Shaw Nature Reserve | Butterfly House

*Sponsorship by the Trio Foundation
of St. Louis and Macy's*

Kick-off spring with a celebration like no other! This active, outdoor, nature-inspired weekend will invite visitors of all ages to reconnect with nearby nature, learn about citizen stewardship opportunities, and celebrate the outdoor gems of the St. Louis eco-region. To learn more, see page 16 or visit www.mobot.org/meetmeoutdoors.



Give The Gift of the Garden

Want to show Mom how much she means to you? Have a teacher to appreciate? Weddings or graduations on the horizon? Consider a gift membership!

Give a year of admission to the Garden, Butterfly House, and Shaw Nature Reserve. Members also enjoy discounts on special events, classes, and shopping along with other great benefits. Order by April 21 to ensure arrival before Mother's Day.

Visit www.mobot.org/giftmemberships, call (314) 577-5118, or visit the Membership Services Desk to purchase a gift membership.



Learn About the Garden's New Planned Giving Resources

Beginning with Garden founder Henry Shaw, generous people have been making planned gifts to the Garden for more than 150 years. Today, individuals who inform us of their plans to include the Garden in their estate are part of the Heritage Society. For gift details, donor stories, and additional information, visit www.mobot.org/plannedgiving. For additional questions, email plannedgiving@mobot.org or call (314) 577-5199.

Join Us For A Celebration of Chinese Culture

Chinese Culture Days will take place April 22 and 23 this year. Don't miss annual festival featuring a Grand Parade led by a 70-foot dancing dragon, acrobatics, square dances, tea and cooking demonstrations, traditional artwork, and authentic regional cuisine. \$7 members; free for Festival level and above; \$15 nonmembers; \$7 children (ages 3–12); free for member children. Join or renew at the event and get in free! For tickets and information, visit www.mobot.org/chineseculturedays. Sponsorship by Glory Light International Ltd.

All new this year, An Evening of Chinese Culture, presented by Mandarin House, invites you to experience the sights, sounds, and tastes of China on April 22 from 6 to 8 p.m. For more information, see page 20.



DISCOVER + SHARE

building on today's strengths with an eye to the future



Garden founder Henry Shaw's vision has served as the foundation for the growth and prominence of the Missouri Botanical Garden. For more than 150 years, this mission has guided the Garden's work locally and around the world to discover the wonders of plants and the essential role they play in our lives. Looking ahead, a new Strategic Plan, approved by the Board of Trustees last September, will guide the Garden through 2020. The objectives in the plan are central to the achievement of the Garden's mission.

The Garden's role as a global leader in the conservation of plant diversity, coupled with its impactful role as a cultural institution engaging diverse audiences, constitute the heart of the plan. Effective organizational capabilities and a strong and sustainable financial base for operations will provide the support and structure to achieve the goals. "The new plan's implementation doesn't represent a new beginning," says Garden President Dr. Peter Wyse Jackson. "In large part, it reflects who we are today and builds on the directions we have been moving in the last six years. We know that we are already heading strongly in these directions, and I am optimistic and excited about our shared future in this work."

Today, the Garden's mission has never been more relevant or important. Plant diversity, the world's greatest renewable natural resource, is being lost at an alarming rate. There is an urgency to discover, document, and conserve this diversity before it is too late. This discovery, though, must be accompanied by the dissemination of that knowledge. The power of plants can only be harnessed when shared with every visitor, scientist, home gardener, government official, community leader, and school child—in short, every person possible.

to discover and
share knowledge
about plants
and their
environment
in order to
preserve and
enrich life

*mission of the
missouri botanical garden*





DISCOVERY

Shaw's inspiration to open the Missouri Botanical Garden came from the great gardens and estates of Europe. However, he wanted it to be more than just a display garden. Through correspondence with Sir William Jackson Hooker, director of the Royal Botanic Garden at Kew, Shaw was instructed that he needed a library and herbarium, collections of knowledge that would further the Garden's scientific pursuits. With the further assistance of two preeminent botanists of the 19th century, fellow St. Louis resident Dr. George Engelmann and Dr. Asa Gray of Harvard University, Shaw's dual vision of the Garden as a horticultural attraction and botanical science institution became a reality.

So, too, did the mission. Today, the terms "discover" and "share" mean many things at the Garden. There is discovery of plant knowledge—a species that's new to science, a new use for a plant, or the hazards that threaten a plant's existence—and horticulture discovery—how to best grow plants, care for them, and select them for a biodiverse landscape. "The Missouri Botanical Garden is an institution based on collections—from the living collections that make the garden attractive and educational for visitors to the herbarium, DNA bank and seed banks, and

biocultural collections," says Senior Vice President of Science and Conservation, Dr. James Miller. "These various collections help document and conserve the plant world."

Living collections and banked seed are protected from the pressures that threaten rare species in the wild and help ensure that these species survive into the future. Our understanding of the 300,000 plant species that are known to science is dependent on herbarium collections. Of the perhaps 100,000 species still awaiting discovery and description, it may be that a third to half are already in our herbarium, but currently either unidentified or misidentified. "Retaining our position as one of the most influential botanical institutions in the world will depend on continuing to build and care for all of our collections," says Dr. Miller.

Our members and visitors also discover something about the plant world through the wide variety of annual and permanent plant displays; the hundreds of classes for children, adults, and families offered each year; or the special lectures and signature events that fill our calendar year after year. "At each of our sites, the story of a single plant, ecosystem, or organism can come to life in hundreds of ways," says Sheila Voss, Vice President of Education. "We definitely get to enable lifelong learning here, but we also get to enable life-deep learning."



SHARING

If knowledge is power, then with that power comes the responsibility to share it. Making more than 150 years of information about plants available to the world is one of the pillars of the Garden’s mission. Shaw intended that the Garden be a garden for the world. As such, the Garden’s valuable collections support activities, events, and outreach learning opportunities that foster engagement in the community and around the world.

The Garden’s trajectory of engagement and learning is second to none. Serving as a world-class institution and treasured community resource, the Garden shares the world of plants and nature with diverse audiences in ways that engage and inspire. “People of all ages, if they choose, can spend a great deal of time with us,” says Voss. Take, for example, some of the youngest visitors who start learning about texture, smell, and color as they walk through the Garden with a parent or grandparent in tow. Or the high schooler who is studying plant ecosystems and learning to become an environmental leader. Or the group of friends who, attending one of the Garden’s signature events, discovered the connection between the items in their everyday lives—clothes, food, medicine—and the plants they saw on display.

Sharing plant knowledge also means making it accessible to those who teach others—teachers making plant science curriculum connections or Master Gardeners lending expert advice—and those who will become tomorrow’s botanists, ecologists, and conservationists. “So many connect with us expressly to learn, to grow, to deepen their connection with plants and the natural world in some way,” Voss says. So whether it’s through the world’s largest botanical database, TROPICOS®; a graduate program whose ripples spread around the world; or a seed-growing activity for kids, the Garden shares the wonders of plants with the world in countless ways. Connecting people with nature ensures that current and future generations can continue to enjoy and care for plants and the environment, thus helping to improve the quality of life for all. “So much has been achieved, but we know that there is so much more needed,” says Dr. Wyse Jackson. “We can and must all make a great difference.”

Discover and Share Your Garden

To learn more about the Garden’s Strategic Plan through 2020, visit www.mobot.org/strategicplan.



ART *in* NATURE

Immersing yourself in nature can be inspiring. Tall grass blowing in the wind, flower buds bursting into clusters of color and fragrance, or water droplets slowly gliding from one leaf to the next—the smallest details can translate into marvelous pieces of art.

For glass artist Craig Mitchell Smith, everything he does is based on the beauty he sees in nature. “Whenever something takes my breath away, I try to make that moment real for other people as well,” he says. “That’s why I so drastically increase the scale of what I see, so that people hopefully have that same “Ah!” moment that I do when I’m in nature.” Visitors will have a chance to experience nature through Mitchell Smith’s larger-than-life fused glass sculptures this summer during *Garden of Glass: The Art of Craig Mitchell Smith*, presented by PGAV Destinations.

A Tropical Canvas

Mitchell Smith created 30 unique pieces for this exhibit. Four will be on display throughout Garden grounds and one inside the Tropical Conservatory at the Sophia M. Sachs Butterfly House. The majority, however, will be displayed inside the iconic Climatron®, which he describes as “the ideal location as an artist to work in.”

Unlike many of the other gardens and public spaces where he has had exhibits, the Climatron’s winding path plays an important role. It allowed the artist, who has a strong background in theater, to work with sight lines and use the conservatory’s lush, tropical foliage to reveal each piece the way he wanted it to. “When they walk into the Climatron, I want people to feel like the children did when they first entered the chocolate room at Willy Wonka’s Chocolate Factory,” Mitchell Smith says. “I want people to feel a sense of wonder and awe, and I hope that my love of nature shows through.”

GARDEN OF
glass
the art of craig mitchell smith

MAY 13
through
AUGUST 13

presented by **PGAV DESTINATIONS**
Global Leaders in Planning and Design

Sponsorship by Caleres,
Drury Hotels Company,
and Edward Jones.



Blue Morpho, one of the 30 unique pieces created for this exhibit, is already on display at the Butterfly House's Tropical Conservatory. Visitors can enjoy this and two more sculptures at the Garden before the exhibit opens on May 13.

The tropical setting was also a perfect fit for Mitchell Smith's art because of his love for butterflies. "I love the idea of the transformation that butterflies go through. That this brown pupae turns into something as beautiful as a butterfly is a great source of inspiration," he says. Two pieces feature butterflies: *Coming to Rest*, with 1,000 monarch butterflies inside the Climatron, and *Blue Morpho*, with 17 enormous blue morphos in the Butterfly House's Tropical Conservatory.

Different Glass

Mitchell Smith is an artist whose path to glass can be described as kaleidoscopic—diverse and colorful. From working in theatrical set design and as a painter to doing landscape, interior, and floral design as well as carpentry and plumbing, his experience has had its mark on the pieces of glass and welded metals he creates today.

He specializes in fused glass, a technique that's much different from traditional blown glass. Fused glass requires computerized kilns for very precise temperature control. To create his pieces, Mitchell Smith imagines each component as a painting, recreating the shapes that a paint brush makes with each stroke. Then, using traditional stained-glass techniques, he hand cuts pieces and places them on the bottom of the kiln to be fused together. "I imagine that the floor of the kiln is canvas. And just as if I were going to paint, I take shards of glass and arrange them piece by piece, color by color, on the floor of the kiln into the form that I've envisioned," he says. It takes about 24 hours for the glass to be properly heated, kneeled, and cooled.

Once the glass is fused, the next step is slumping or draping, which is a three-dimensional forming of the glass. Using terra-cotta and custom-rolled stainless steel, he develops a topography at the bottom of the kiln, places the piece of glass, carefully heats it to about 1200° F, and lets the glass collapse onto the form he's given it. And so, piece by piece, his sculptures come to life.

photos by Randy Blankenship



1. **Where are you from?** Lansing, Michigan
2. **Can you describe your workspace?** Up until 2010, I was working out of my basement. Today, I have a 4,000-square-foot studio just a few minutes from my house. There are seven people on my team, including me.
3. **How long did it take to put this exhibit together?** This exhibit is a result of two years of planning and non-stop work. So far, *The Muses*, which consists of nine life-size figures, has taken the longest to produce.
4. **Do you have any favorites?** My favorite, I think, will always be *Make a Wish*. I love it for its sense of wonder and its optimism. I also love *Orange Blossom*. It's a dazzling confection that stands at 16 feet tall with 125 individual pieces of glass (pictured above).
5. **What can visitors expect?** The way the show will be lit at night, I'm hoping, will inspire other people to see the beauty that's all around them in the way that I do.

Opening Events

Garden Soiree: Garden of Glass
May 19 | 7–11 p.m.

Garden Soiree will kick off Garden of Glass with festive cocktails and hors d'oeuvres, exhibit viewing, special performances, and live music from the iconic band, The Samples. \$125 members; \$150 nonmembers. Tickets required: www.mobot.org/soiree.

Garden of Glass: Evening Member Preview
May 20 | 7–11 p.m.

Members see it first! Enjoy the summer beauty of the first night of Garden of Glass. For more info, see page 19.

For event times and pricing info, visit
www.mobot.org/glass



GO OUT SIDE!

As the temperatures start rising and the first buds of spring start blooming, you may be reaching for your sunblock and hiking shoes faster than you can say “Gone fishing!” Whether it’s spending time in your home garden, enjoying a picnic lunch at your nearest park, or kayaking on the Meramec River, there are many ways to spend quality time discovering, experiencing, and conserving nature and the great outdoors, including a visit to the Missouri Botanical Garden, Sophia M. Sachs Butterfly House, or Shaw Nature Reserve.

Growing research continues to support what many of us already know: nature helps your mental and physical well-being. Among the many benefits of spending time in nature are stress relief, anxiety reduction, and a better mood. It can improve your vision, coordination, focus, and memory. And you don’t have to go on a three-day camping trip to experience these benefits. A quick walk during your lunch hour or settling in for a nice afternoon read in your backyard will work too.



study nature, love nature,
stay close to nature
it will never fail you

frank lloyd wright

With that in mind, the Garden, in partnership with the BiodiverseCity St. Louis network, invites you to celebrate the second annual Meet Me Outdoors In St. Louis weekend festival on April 1–2, sponsored by the Trio Foundation of St. Louis and Macy's. "We want to motivate and inspire an active, outdoor culture that increases enjoyment, appreciation, and stewardship of increasingly biodiverse local landscapes," says Sheila Voss, Vice President of Education at the Garden.

In addition to the spring openings of the Doris I. Schnuck Children's Garden, Tower Grove House, and the popular tram tours, the Garden will host a variety of activities for visitors to enjoy during the two-day event, including a participatory art experience using seeds and food sales available at Cohen Amphitheater. At all three sites, exhibitors from across the region representing more than 20 local conservation organizations, wildlife agencies, and park systems will be on hand to share information about how to enjoy and protect the outdoors. Enjoy scavenger hunts, native plant sales, self-guided adventures, micro-habitat building sessions, and more. Visitors can also pick up a copy of the Meet Me Outdoors In St. Louis Challenge, which features a checklist of the top 100 must-do outdoor experiences in the region throughout the year. "We see this as an opportunity for people to change their routines and lifestyles to make more time for quality, meaningful outdoor experiences with family and friends throughout the year, including Garden sites, parks, and other public lands," says Voss.

Don't miss it!

For more information about the weekend and ideas on how you can enjoy the outdoors all year long, visit www.mobot.org/meetmeoutdoors. Plus, don't miss the members-only presentation on May 23 (see page 19).

STAY ON THE PATH

As you head outside and enjoy nature, don't forget to look down. Rare and endangered plant species may be living right where you're about to set up camp. A recent study shows that outdoor recreation is the most common threat to rare plants in the United States. The systematic assessment was done by Dr. Adam Smith, Assistant Scientist for Global Change at the Garden's Center for Conservation and Sustainable Development, and his team. They examined 2,733 species, representing nearly all known endangered plant species in the country, and assessed the number of species affected by each threat.

Their findings showed that outdoor recreation, particularly off-road vehicles, affected 35% of the species. Hikers, bicyclers, trail riders, skiers, and climbers threatened 13% of all plants studied, either by accidentally trampling on them or their habitat, or indirectly introducing invasive species. In addition to outdoor recreation, livestock, residential development, and invasives were also common threats. "I love hiking and camping, and even I'm tempted sometimes to go off trail," says Dr. Smith. "I don't see our findings as being completely inimical to efforts to increase outdoor recreation." After all, he says, being in nature is key to building awareness and stewardship. What is important is to be aware of the direct and indirect effects we have on nature. "Everything we do, even staying inside, has an ecological impact," he says.

just for members



Member Speaker Series: Gardening with Native Plants
Shoenberg Theater
March 7 | 11 a.m.–noon
Horticulturist Scott Woodbury from Shaw Nature Reserve discusses Missouri wildflowers and other native plants ideal for local gardens. Bring your questions! Free for members; registration required.

Eggstravaganza
Presented by Mercy.
April 8 | Hunt times: 10 a.m., 10:30 a.m., 11 a.m., 11:30 a.m., noon
See live rabbits from the House Rabbit Society and meet Hopsy the Bunny. Bring your basket to collect all the goodies. Each egg hunt is divided by age group. \$5 for member children (ages 3 and older). Registration required.

Member Speaker Series: Best New Plants for the Home Landscape
Shoenberg Theater
April 18 | 11 a.m.–noon
Enhance your garden with Steffie Littlefield of Edg-Clif Farms & Vineyard. Steffie shares tips to incorporate new plants and flowers in your home garden. Free for members; registration required.

Herb Days Member-Only Shopping Hours
April 27 | 5–8 p.m.
Shop more than 120 new and hard-to-find varieties of herbs, including the 2017 herb of the year: cilantro/coriander. Live music, tastings, and other activities included. Free for members.



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Information and registration at (314) 577-5118 or www.mobot.org/memberevents unless otherwise noted.



photos by Monique Mullen, Suzann Gilie, and Heather Marie Osborn

Shaw Wildflower Market Member Preview

Shaw Nature Reserve
May 12 | 4–7:30 p.m.
Members enjoy first pick of hundreds of varieties of Missouri native wildflowers, trees, and shrubs. Live music and vendors of local wine, breads, meats, sweets, baskets, books, and more. Free for members.

Garden of Glass: Evening Member Preview

May 20 | 7–11 p.m.
Members see Garden of Glass first (see page 14)! Live music, summer blooms, and signature cocktails for purchase. \$12 members; \$6 member children; Festival-level members and above enjoy a limited number of free tickets. Advance timed tickets required.

Member Speaker Series: Meet Me Outdoors

Shoenberg Theater
May 23 | 11 a.m.–noon
Join Sheila Voss, Vice President of Education, and learn how to transform local landscapes into thriving, nature-rich spaces. Free for members; registration required.

St. Louis Garden Tour

June 11 | 9:30 a.m.–4:30 p.m. | Off-site
Garden members and their guests are invited to enjoy a self-guided tour of seven spectacular gardens across the St. Louis area. \$50 per person. Advance ticket purchase required: www.mobot.org/gardentour. See special insert in this *Bulletin*.

special events

Morpho Mardi Gras

Now–March 31 (closed Mondays) | 10 a.m.–3 p.m. | Butterfly House
Bring your Krewe to the carnival! Join the party at our bug parade, make a masquerade mask, and immerse yourself in a sea of blue as we fill the Tropical Conservatory with thousands of blue morpho butterflies. Included with admission.



Chinese Culture Days

April 22–23
Sponsorship by *Glory Light International Ltd.*

Join us for this annual celebration featuring a Grand Parade with 70-foot-long dancing dragon, authentic regional cuisine, tai chi, acrobatics, and activities in the Grigg Nanjing Friendship Garden.

\$7 members; free for Festival level and above;
\$15 nonmembers; \$7 children (ages 3–12);
free for member children.

Join or renew at the event and get in free!
www.mobot.org/chineseculturedays

An Evening of Chinese Culture–NEW!

April 22 | 6–8 p.m.

Presented by Mandarin House

Experience the sights, sounds, and tastes of China. Enjoy lion dances and acrobatic performances, dine on a dim sum meal (included in ticket price), and more. Cash bar available. \$25 member; \$30 nonmember. Limited capacity, advance tickets recommended: www.mobot.org/events.



Herb Days

April 27–29 | Orthwein Floral Display Hall

Presented by the St. Louis Herb Society

Shop more than 120 varieties including the herb of the year: cilantro/coriander. Included with admission; free for members. Members get first pick on April 27 (see page 19).



Grapes in the Garden

May 12 | 6–9 p.m.

Presented by Schnuck Markets, Inc.

Join us for a special evening at the Garden and sample more than 250 fine wines. Attendees must be at least 21 years of age. \$50 per adult. \$40 for members. \$15 designated driver. Tickets required: www.mobot.org/grapes.

Shaw Wildflower Market

May 13 | 9 a.m.–4 p.m. |

Shaw Nature Reserve

Shop the largest selection of native wildflowers in the St. Louis area featuring hundreds of varieties of Missouri native annual and perennial wildflowers, ferns, trees, and shrubs to attract wildlife. \$5 per person; free for members and Nature Reserve passholders. Members also get first pick on May 12 (see page 19).

GARDEN SOIRÉE

May 19 | 7 p.m. | Featuring



Celebrate Garden of Glass with a blowout kickoff party. Join us at the first annual Garden Soiree for an evening of fabulous food, signature cocktails, an exclusive performance by The Samples, and evening viewing of Garden of Glass. Premium ticketholders enjoy a champagne reception with The Samples and artist Craig Mitchell Smith, and valet parking.

\$350 premium ticket;
\$300 member premium ticket;
\$150 general ticket; \$125 member general ticket. Tickets required: www.mobot.org/soiree

From gardening tools and unique toys to vintage items and local products, the Garden shops have just what you're looking for. Look for these icons to know where each event or sale is taking place.



Garden Gate Shop

4344 Shaw Blvd.
St. Louis, MO 63110
Monday–Sunday
9 a.m. to 5:30 p.m.
(314) 577-5137



Butterfly House Gift Shop

15193 Olive Blvd.
Chesterfield, MO 63017
Tuesday–Sunday
10 a.m. to 4 p.m.
(636) 530-0076 ext. 15



Little Shop Around the Corner

4474 Castleman Ave.
St. Louis, MO 63110
Tuesday–Saturday
10 a.m. to 4 p.m.
(314) 577-0891

New Offerings at Sassafras



Starting February 25, Sassafras, the Garden's café, will offer a brunch Chef's Special every Saturday 7:30–10:30 a.m. and Sunday 9–10:30 a.m. Come in and see what Chef Mike creates! Plus, the new spring/summer Sassafras menu will officially debut March 30. Come and check out our new selections.

First Fridays

First Friday of the month | 🌿

Discover something new—from book signings to food samplings to trunk shows. More at www.mobot.org/shop.

Morpho Mardi Gras

Now–March 31 | 🦋

Celebrate Morpho Mardi Gras with a memorable morpho souvenir or gift of our most popular butterfly.

Staff and Volunteer Sale

March 1–3 | 🌿 🦋 🪑

As a thank you for making the Garden a world-class institution, all Garden staff and volunteers receive an extra 10% off their purchases.

Friday Night Flights

March 3 | 🦋

Enjoy 20% off your purchase as you enjoy our Friday Night Flights event (no additional discounts apply).

Around the World Wine Dinners

Third Thursday of the month | March–October | 6:30 p.m. | Spink Pavilion

Travel to wine-producing regions through a five-course dinner paired with a different wine from the same region. \$70 (plus 18% service charge and tax). Advance reservations required: (314) 577-0200.

Meet Me Outdoors In St. Louis Sale

April 1–2 | 🦋

In celebration of weekend festival, your little ones can re-connect with nature with fun exploration tools, activity kits, or plush items at 20% off (no additional discounts apply).

Member Double Days

April 2–3 | 🌿

All Garden members receive 20% off purchases or double card punches.

Café Flora

April 8–October 29 | 10 a.m.–2 p.m. | Saturdays and Sundays

Enjoy a delicious brunch at the iconic Spink Pavilion. Call (314) 961-7588 ext. 265 for more information.

Mother's Day Sale

May 14 | 🦋

In honor of Mom, enjoy 20% off any item in the Butterfly House Gift Shop (no additional discounts apply).

Special Brunches at Sassafras

Easter | April 16 | 10 a.m. – 2 p.m.

Mother's Day | May 14 | 10 a.m.– 3 p.m.

Celebrate these special days with brunch at Sassafras, the Garden's café. Price per event: \$34.95 adults, \$15.95 children (ages 5 to 12). Ticket includes same-day admission to the Garden. Advance reservations and payment required: (314) 961-7588 ext. 265.

» staff pick



New MBG Orchid Line

Discover the Garden's new 2017 line of orchid products for home, bath, and body. Items include soap, lotion, pot holders, drawer liners, and more. They make great gifts! Prices range from \$9.99 to \$29.99. Available at the Garden Gate Shop.

commemorative gifts

October–December 2016.

A commemorative gift is a wonderful way to honor family and friends. Gifts of \$50 or more are listed in the *Bulletin*. For more information about giving opportunities at the Missouri Botanical Garden, please call (314) 577-5118 or make a commemorative gift at www.mobot.org/tributes.

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October–December 2016.

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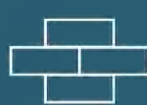
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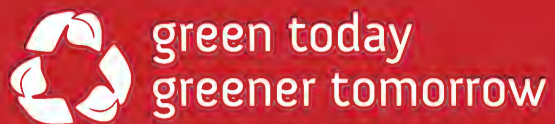
building
memories
brick by brick

Dedicate a Brick or Paver

Looking for a special way to create a permanent recognition for a birth, graduation, retirement, or another special occasion? Need a meaningful way to memorialize a friend, colleague, or loved one?

Consider an engraved clay brick at the Missouri Botanical Garden or an engraved paver at the Butterfly House. Garden bricks are engraved with the names of honorees near the William T. Kemper Center for Home Gardening. Butterfly pavers can include additional sentiments and cover the walkway to the entrance of the Butterfly House.

Bricks are \$500 for members; pavers are \$225 for members. Learn more at www.mobot.org/tributes.



The Missouri Botanical Garden strives to make the most sustainable choices possible to benefit people, plants, and the planet. That's why we offer an interactive online version of the *Bulletin* as well as a downloadable PDF. Sign up by sending an email to membership@mobot.org. Let us know if you'd like to forego your paper subscription.

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CHINESE CULTURE DAYS

April 22-23

www.mobot.org/chineseculturedays

Sponsorship by *Glory Light International Ltd.*

Join or renew
at the event and
get in for free!



MISSOURI BOTANICAL GARDEN

calendar

www.mobot.org/events

march | april | may

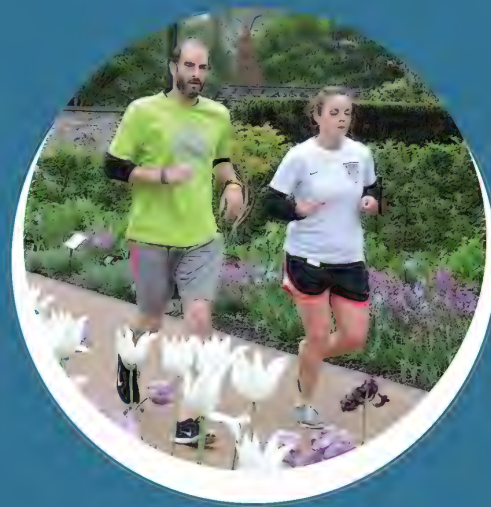


Run With The Garden

Grab your running shoes and join us for three fun 5K opportunities surrounded by some of nature's most stunning landscapes.



Daffodil Dash
April 8 | 9–10 a.m. | Shaw Nature Reserve | www.shawnature.org



Tulip Trot
April 30 | 7–9 a.m. | Garden
www.mobot.org/tuliptrot



Garden Gallop
June 25 | 7–9 a.m. | Garden
www.mobot.org/gardengallop

DON'T MISS! Garden Soiree: Garden of Glass
May 19 | 7–11 p.m. | featuring The Samples
www.mobot.org/soiree

Garden of Glass
May 13–August 13
Presented by PGAV Destinations



Eggstravaganza

Presented by Mercy†

April 8 | 10 a.m.–noon

\$5 member children (ages 3 and older)

Egg hunts are offered every 30 minutes from 10 a.m. to noon. Hunt areas are divided by age group.

Enjoy this springtime tradition at the Garden! See live rabbits from the House Rabbit Society and take photos with our very own Hopsy the Bunny. Bring your basket to collect all the goodies. Registration required.

www.mobot.org/memberevents

Spring Fling

at the Butterfly House

April–May

10 a.m.–3 p.m. | Tuesday–Sunday

Spring Fling is a celebration of budding trees, sprouting flowers, and the arrival of pollinators to our gardens. Join us as we host a variety of activities that will cure your case of Spring Fever! Included with admission; free for members.

www.butterflyhouse.org



Shaw Wildflower Market

at Shaw Nature Reserve

May 13 | 9 a.m.–4 p.m.

\$5 per person | Free for members

Member-Only Preview
May 12 | 4–7:30 p.m. | Free

Shop the largest selection of native wildflowers in the St. Louis area, featuring hundreds of varieties of Missouri native annual and perennial wildflowers, ferns, trees, and shrubs to attract wildlife.

www.shawnature.org

march 2017

average temperature: low 36° | high 55°
average precipitation: 3.6 in.

What's in bloom?



Hellebores Kalanchoe Primula

2/4–3/26 **Orchid Show: Vanilla** | 9 a.m.–5 p.m. | Free for members | through March 26 | \$ RVC | Free for members

2/1–3/31 **Morpho Mardi Gras** | through March 31 (closed Mondays) | 10 a.m.–3 p.m. | BH

3/1–3/3 **Staff and Volunteer Sale** at the shops | GGS, BHGS, LS

3/3 **Friday Night Flights** | 5:30 to 7:30 p.m. | ☞ \$ BH

3/5 **Corporate Partners Day** | 9 a.m.–5 p.m.

3/7 🌿 **Member Speaker Series: Gardening with Native Plants** | 11 a.m.–noon | ☞ 📅 ST

3/9 **Orchid Nights—NEW!** | 6–9 p.m. | \$ RVC



april 2017

average temperature: low 47° | high 67°
average precipitation: 3.69 in.

What's in bloom?



Gentian Tall bearded iris Large-flowered bellwort

4/1–4/2 **Meet Me Outdoors in St. Louis** | 9 a.m. to 4 p.m. | MBG, BH, SNR

4/1–5/31 **Spring Fling** | 10 a.m.–4 p.m. | through May 31 | BH

4/2–4/3 **Member Double Days** | 20% off purchases or double card punches | GGS

4/7 **John Dwyer Lecture in Biology** | 4 p.m. | ST

4/8 🌿 **Member Event: Eggstravaganza** | Presented by Mercy. | 10 a.m.–1 p.m. | ☞ \$ 📅

4/8 **Daffodil Dash** | 9 a.m. | ☞ \$ SNR

4/16 **Easter Brunch** | 10:30 a.m., noon, and 1:30 p.m. | ☞ \$ 🍴

4/18 🌿 **Member Speaker Series: Best New Plants for the Home Landscape** | 11 a.m.–noon | ☞ 📅 ST

4/22–4/23 **Chinese Culture Days** | 10 a.m.–5 p.m. | \$

4/22 **An Evening of Chinese Culture—NEW!** | 6–8 p.m. | Presented by Mandarin House. | \$

4/23–4/24 **Bookworm Breakfast with the Very Hungry Caterpillar** | 9–10:30 a.m. | ☞ \$ BH

4/27 🌿 **Member-Only Shopping Hours: Herb Days** | 5–8 p.m. | RVC 📅

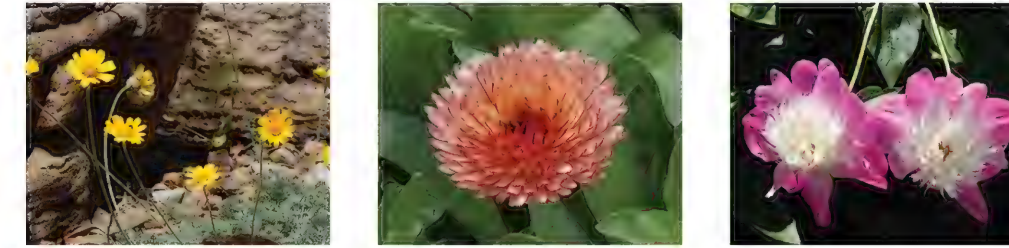
4/28–4/29 **Herb Days** | Presented by the St. Louis Herb Society. | 9 a.m.–5 p.m. | RVC

4/30 **Tulip Trot** | 7–9 a.m. | ☞ \$

may 2017

average temperature: low 57° | high 76°
average precipitation: 4.11 in.

What's in bloom?



Dog fennel Marigold Peony

5/7 **Fancy Tea with Mommy and Me** | 10–11:30 a.m. or 2–3:30 p.m. | ☞ \$ BH

5/12 **Grapes in the Garden** | Presented by Schnuck Markets, Inc. | 6–9 p.m. | ☞ \$ RVC

5/11 **Give STL Day** | Proceeds benefit EarthWays Center | www.mobot.org/givestl

5/12 🌿 **Shaw Wildflower Market Member Preview** | 4–7:30 p.m. | SNR

5/13 **Shaw Wildflower Market** | 9 a.m.–4 p.m. | Free for members | SNR

5/13–8/13 **Garden of Glass: The Art of Craig Mitchell Smith** | 9 a.m.–5 p.m. | Evening viewing begins May 25 | Presented by PGAV Destinations. | \$ Climatron

5/14 **Mother's Day Brunch** | 10 a.m.–3 p.m. | ☞ \$ 🍴

5/19 **Garden Soiree: Garden of Glass** | 7–11 p.m. | ☞ \$

5/20 🌿 **Garden of Glass: Evening Member Preview** | 7–11 p.m. | ☞ \$ 📅

5/21 **Corporate Partners Day** | 9 a.m.–5 p.m.

5/23 🌿 **Member Speaker Series: Meet Me Outdoors** | 11 a.m.–noon | ☞ 📅 ST

5/31 **Whitaker Music Festival** | 7:30 p.m. | CA

your garden



When can I uncover my roses in the spring?

The best time to uncover roses depends a great deal on the weather and the type of winter protection used. If rose cones have been used, it is important to remove them on warm sunny days in late winter and early spring to prevent heat build up inside the cone. Keep them nearby, though, as you may have to put them back on if freezing temperatures return at night or during a cold snap.

If you have used mulch over the soil mound, remove the mulch in stages beginning when temperatures hover at or above freezing and before new growth begins. Removing the mulch in stages allows the plants to gradually adjust to an unprotected environment, and if there is a late killing frost, there will still be some protection around the plant base. Keep the mulch near by if needed.

After cones and mulch are removed and about the time of the last killing frost, you should begin to gradually remove the soil that was mounded around the plant. Remove it in stages over two to three weeks. If freezing temperatures threaten, use the reserved mulch to cover the plants until warm temperatures return.

Roses benefit by having a winter mulch, but remember keeping the mulch on too late in the spring can also cause damage.

More advice and tips at www.mobot.org/gardeninghelp.



Plant Societies' Shows and Sales

Get the latest information about your favorite plant society's show and sale by visiting www.mobot.org/plantsocieties.

Key (All events take place at the Garden unless otherwise noted.)

BH	Butterfly House	KC	Kemper Center for Home Gardening	🌿	Sassafras
BHGS	Butterfly House Gift Shop	LS	Little Shop Around the Corner	🌿	Members-only event
CA	Cohen Amphitheater	MC	Monsanto Research Center	📅	Double punches for Garden Gate Shop Rewards Card
CBEC	Commerce Bank Center for Science Education	MH	Monsanto Hall (in RVC)	☞	Reservations required
CHD	Children's Garden	RVC	Ridgway Visitor Center	\$	Fee required
CL	Climatron lawn	SNR	Shaw Nature Reserve		
GGS	Garden Gate Shop	SP	Spink Pavilion		
JE	Jordan Education Wing (in RVC)	ST	Shoenberg Theater (in RVC)		

bulletin

Summer 2017

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www.mobot.org



MISSOURI BOTANICAL GARDEN



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Thank you! Your membership provides critical support for our international and local plant science and conservation work, and Garden memberships contribute 21% of our annual operating funds.

To learn more about the benefits of your membership, visit www.mobot.org/membership, email membership@mobot.org, or call (314) 577-5118.

hours and admission

For hours and admission prices at our three locations, visit www.mobot.org, www.butterflyhouse.org, and www.shawnature.org.

contact

Missouri Botanical Garden
4344 Shaw Blvd.
St. Louis, MO 63110
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on the cover

Giant Victoria water lilies' night-blooming flowers are one of the rare, beautiful sights you'll be able to enjoy this summer with our evening activities. Photo by Kent Burgess.

credits

Editor/Designer: Andrea Androuais
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To discover and share knowledge about plants and their environment in order to preserve and enrich life.

mission of the Missouri Botanical Garden

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from the president



Summer is always a good time to visit the Missouri Botanical Garden, Sophia M. Sachs Butterfly House, and Shaw Nature Reserve. Special activities, events, and classes are waiting for people of all ages. This year, however, is particularly exciting because of our special exhibit *Garden of Glass: The Art*

of Craig Mitchell Smith. Open now through August, the event features larger-than-life sculptures made of fused glass set in the spectacular tropical forest inside our iconic Climatron®. I hope you'll join us for this wonderful opportunity to experience the Garden in a whole new way—both during the day and at night (see page 10).

One of the perks of visiting the Garden at night is to witness the stunning blooms of the Victoria water lilies in the Central Axis. These magnificent plants are just one example of the incredible living collection of plants that make the Garden the world-renowned botanical institution it is today. Beautiful, educational displays are one of the reasons you've come to love the Garden. We're always trying to present new ways to think about plants while highlighting the research and conservation work that's behind it all—from revisiting traditional designs and styles (see page 5) to introducing innovative ideas that could have a big impact on our future (see page 6).

And these wonderful displays showcase our focus to discover, study, and protect plants from around the world, particularly those that are rare or in danger of extinction. Our holistic approach to plant conservation involves many different areas of the Garden, including our Horticulture team (see page 14).

It is also no secret that the Garden is a world-class scientific and cultural institution thanks in large part to our volunteers (see page 16). Each year we take the time to recognize this amazing group of people and celebrate those who have been giving their time and talent for 10 years or more. We're incredibly grateful for everything our 2,000+ volunteers do, and we salute them for their contributions to the Garden and all its sites. Thank you!

A handwritten signature in black ink that reads "Peter Wyse Jackson". The signature is written in a cursive, flowing style.

Dr. Peter Wyse Jackson, *President*

what's new?

green today  greener tomorrow

Garden Receives Prestigious Sustainability Award

The Garden was selected as the recipient for the Operational Sustainability Award by the American Public Gardens Association, recognizing the dedication and achievements in promoting sustainability. “Our motto, ‘Green Today. Greener Tomorrow!’ is not simply a tagline, but a commitment to making the most sustainable choices in all aspects of our operations,” says Deborah Frank, Vice President of Sustainability and Shaw Nature Reserve. “We know the choices we make will have an impact on the future health of our garden and the planet.” The award will be presented during the annual conference in Canada this June.



The Garden's Chief Operating Officer Bob Woodruff (left) and Senator Blunt tour the Garden, including stops at the Orchid Show and the museum.

Senator Visits The Garden

On March 25, United States Senator Roy Blunt (R–MO) visited the Garden, where he toured the grounds and learned more about the Garden's world-renowned plant research program. “The Missouri Botanical Garden offers so much to those who visit and walk the gardens every day, but it also plays an important part in driving Missouri's agriculture-based economy,” he says. “With world food demand expected to double in the next 30 to 40 years, the Missouri Botanical Garden's food production and plant research will give Missouri's farmers more tools to help them take advantage of the great economic opportunities ahead.”



Garden Welcomes New Vice President of Institutional Advancement

Dianne Johnson joined the Garden on April 3 as the new Vice President of Institutional Advancement. Johnson has more than 20 years of experience in development and fundraising; board and

organizational development; and management and constituency building. Before pursuing a career in fundraising, she was a practicing attorney and clerked at the Missouri Court of Appeals. Johnson received her Bachelor of Arts in Political Science from the University of Nebraska, and holds her Juris Doctorate from Washington University in St. Louis. “As an avid gardener, I am honored to join the Garden, one of St. Louis's premier cultural institutions as well as an international leader in biodiversity, plant science, and conservation,” she says.



Peabody representatives planting the rare and endangered *Malus niedzwetzkyana*.

Commemorative Planting of Rare and Endangered Tree

To recognize Peabody Board of Directors' many years of service to the company, Peabody presented the Garden with a generous gift toward its plant conservation efforts. The gift will support the Garden's program to conserve crop wild relatives in Kyrgyzstan. To commemorate the occasion, spouses of the Peabody Board dedicated a *Malus niedzwetzkyana* tree at the Garden in early March. The endangered tree, native to Kyrgyzstan, is a wild relative of the apple and exists in a small area in central Asia. Over the years, its population has declined due to agricultural expansion, genetic erosion, and overgrazing. To learn more about the Garden's conservation efforts in Kyrgyzstan, visit www.discoverandshare.org.



Planning Your Visit: Roadwork At the Garden

As you plan your visit to the Garden this summer, please note that the City of St. Louis Street Department will be doing roadwork on Shaw Boulevard and Kingshighway at I-44 as part of the final stages of its multi-year Kingshighway viaduct project. For the most current information, visit www.mobot.org/directions or follow the Garden on Twitter and Facebook.



The garden's design was inspired by horticulturist Gertrude Jekyll and her style to group and blend colors.

Lauren's Secret Garden

The garden renovations outside the Herring House are nearly complete. The garden, now called Lauren's Secret Garden, was designed following the style of influential British horticulturist Gertrude Jekyll. Garden horticulturists Jennifer Smock and Mariel Tribby were inspired by Jekyll, a pioneer in a field that at the time was dominated by men. Her style is characterized by grouping and blending plant colors together in borders, and she designed gardens to have a peak bloom season. In Lauren's Secret Garden, the peak will occur in the summer.

The renovations to the garden and the house, formerly known as the Cleveland Avenue Gatehouse, were made possible by a generous gift from Laura and Mike Herring and their daughter, Lauren Herring. The new space will be used for private events.

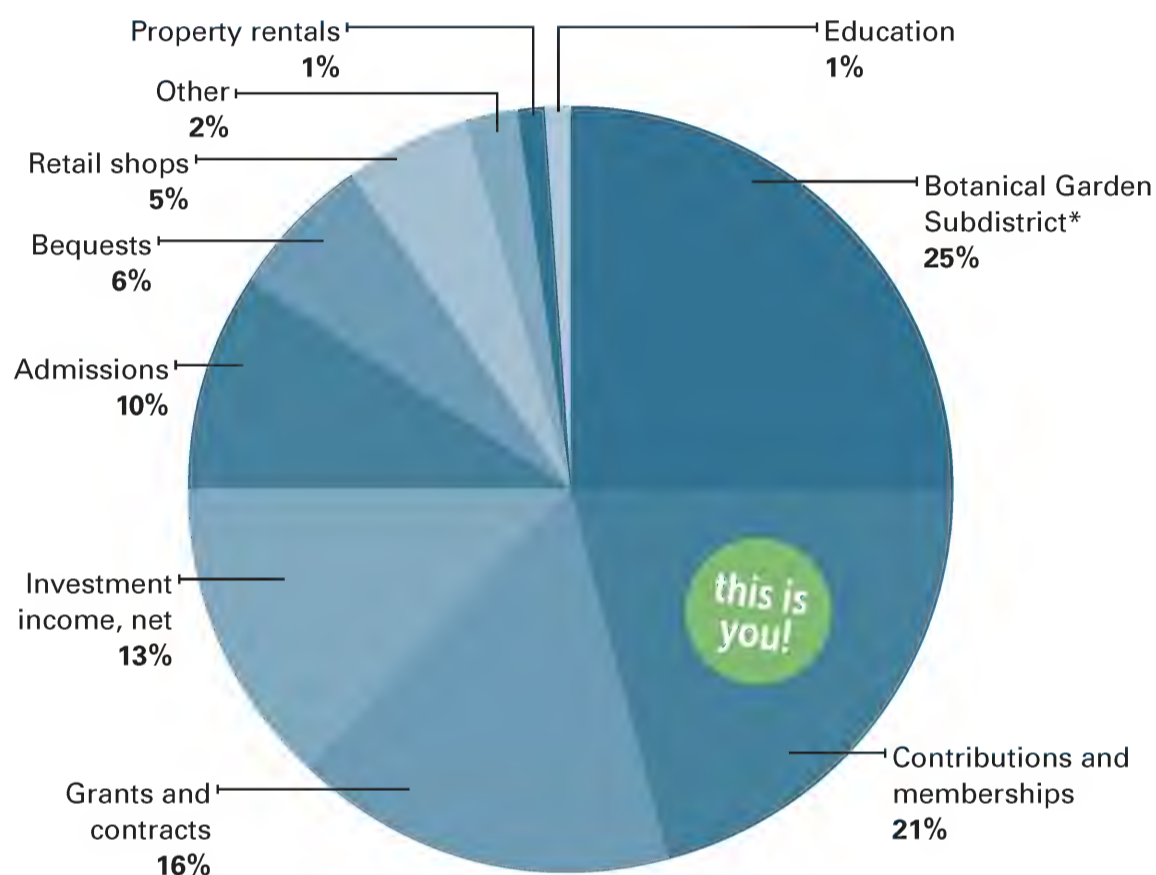
photos by Andrea Androuais

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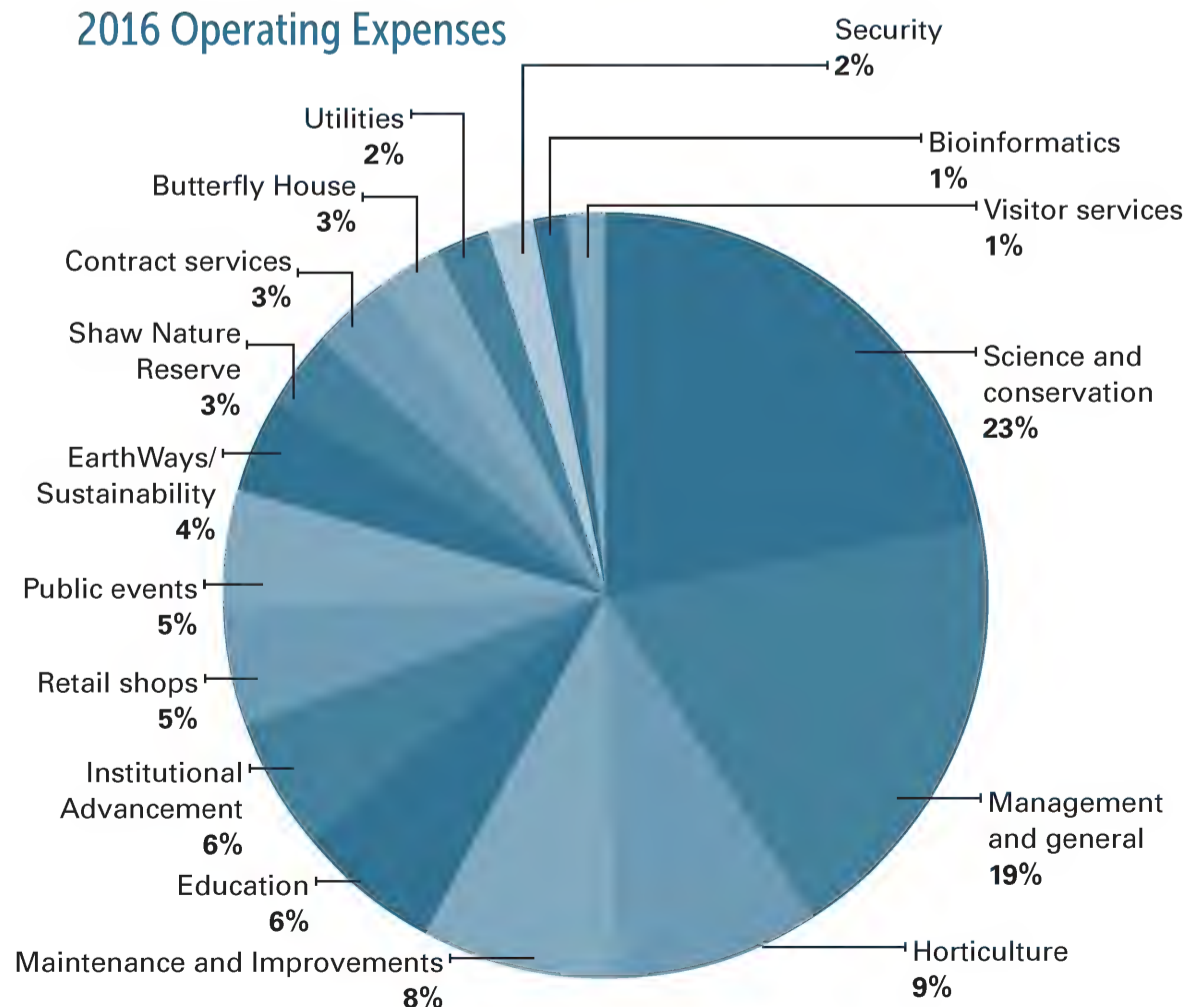
of the Garden's operating support comes from you
THANK YOU!

Excerpted from the Garden's 2016 Annual Report, these charts provide an overview of the sources of support and also illustrate how funding is used to advance our mission and strategic goals. Thank you for contributing to our success! To learn more, visit www.mobot.org/reports.

2016 Operating Support and Revenue



2016 Operating Expenses



did you know?



Helianthus maximiliani, one of several Asteraceae species under consideration for pre-breeding in the Global Perennial Agriculture Project.

New Perennial Crop Display To Highlight Potential Future of Agriculture

A new display in the George Washington Carver Garden will showcase a potential new agricultural system based on perennial plants. It is a small-scale representation of a current study into developing more sustainable agriculture using perennial grain, legume, and oilseed species. The Global Perennial Agriculture Project is a collaborative project between the Garden, Saint Louis University (SLU), and The Land Institute.

Dr. Allison Miller, Associate Professor of Biology at SLU and Research Associate at the Garden, is leading the project. “Today’s agriculture system is based on monocultures—corn, wheat, soybeans—but the reality is that with a growing population and a changing climate, that system is not sustainable,” she says. “We’re beginning to realize that we need to rethink how we grow food.” The project aims to identify wild, herbaceous perennial species that could potentially be domesticated and used to create an agriculture system that mimics natural ecosystems, such as a prairie.

Dr. Miller is working closely with Associate Curator Dr. Wendy Applequist and Research Specialist Andrew Townsmith, both from the Garden’s William L. Brown Center, to research the ethnobotanical records and toxicity of the identified species. “Knowing if a species has been eaten in the past can help prioritize the candidates for domestication,” says Dr. Applequist. The new display will give visitors a glimpse into this fascinating research and also tie to Dr. Carver’s work as an extraordinary scientist who greatly influenced 19th and 20th century agriculture and education. To learn more about the project, please visit www.discoverandshare.org.



Online Flora Launching This Summer

Garden representatives traveled to Berlin in March for the latest meeting on the World Flora Online (WFO), which, thanks to the support of the Monsanto Company, aims to have an online flora of all known plants by 2020. One of the meeting’s major outcomes is the plan to officially launch the website this summer during the XIX International Botanical Congress in China. Garden President Dr. Peter Wyse Jackson was re-elected chair of the WFO Council and Garden Chief Information Officer Chuck Miller was re-elected chair of the Technical Working Group.

2x as many mosses found in Bolivia's montane forests vs the entire Amazon basin

Garden Scientist Receives OPUS Award

Earlier this year, the National Science Foundation awarded Steven Churchill, Director of the Garden’s Bolivian Program, a \$254,989 grant under its Opportunities for Promoting Understanding through Synthesis (OPUS) program. OPUS’s goal is to compile a body of related research projects done over an extended period of time. In Churchill’s case, that is synthesizing 30 years of research on tropical Andean mosses onto a website that will be an educational and research tool.

The tropical Andes are considered one of the world’s major centers of biodiversity. The region contains 15% of the estimated 8,000 mosses in the world, with approximately 31% of the species being endemic, meaning they don’t grow anywhere else in the world. For mosses, the tropical Andes are considered the most diverse in terms of both species diversity and endemism.

Hardy | *adjective* | har-dy | \ 'här-dē\
capable of withstanding adverse conditions

A plant's hardiness is usually defined as its ability to withstand cold temperatures. Gardeners may be most familiar with the 13 hardiness zones defined by the U.S. Department of Agriculture (USDA). Each zone reflects the average lowest winter temperature for the location during a specified time, not the coldest it's ever been. The USDA's Plant Hardiness Zone Map, revised in 2012, is a good tool gardeners can use when choosing plants that will do well in their garden.

Cold temperatures, of course, are not the only factor that determine how a plant thrives in a particular area. Light, soil type, humidity, and heat are additional environmental factors. Gardeners can also use the American Horticultural Society's Plant Heat Zone Map. Senior Manager of Horticulture Jim Cocos explains that, while the USDA's Plant Hardiness Zone Map is still the most common reference, more research has been done into heat hardiness in the last decade, and it has become more understood by scientists, horticulturists, and gardeners. "We're constantly looking for microclimates around the Garden with our various temperature gauges," he says. "A plant might not survive anywhere, but if you put it in the right place with the right conditions, it's different. I think homeowners find that's the case around their house as well."



Garden Researcher Recognized For Work With Local Community

Ashley Glenn, Research Specialist at the Garden's William L. Brown Center, has been selected as the 2017 recipient of the Richard Evans Schultes Research Award from the Society for Economic Botany. The award recognizes her project "Exploring migrating foodways through the cuisine of St. Louis Bosnians."

The award is presented annually to a graduate student who is a member of the Society. It is meant to help with costs of field work on a topic related to economic botany, which is the study of the relationship between plants and people. Glenn is currently in the second phase of the project, learning about Bosnian food in St. Louis. "It's the story of how people move here and set up home, and how their food and use of plants adapts to the new place," Glenn says.

St. Louis has the largest Bosnian population outside of Bosnia. Nearly 70,000 Bosnians live here, with the first wave arriving in the 1990s during the Bosnian War.



Love For Plants

Jim Cocos,
Senior Manager of
Horticulture

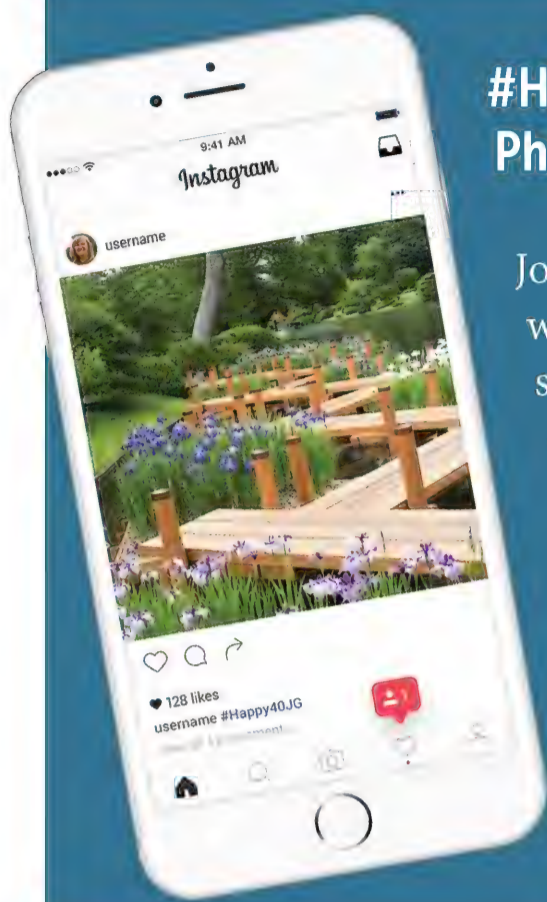
Jim Cocos joined the Garden in 1994 to supervise the completion of some of the Garden's large projects in the Master Plan—the William T. Kemper Center for Home Gardening, the Ruth Palmer Blanke Boxwood Garden, and the Margaret Grigg Nanjing Friendship Garden to name a few. After a period of serving as Vice President of Horticulture and realizing he "really, really missed the hands-on horticulture and the day-to-day time with the staff," Cocos became Senior Manager of Horticulture.

Cocos has always been interested in plants. "My grandfather, actually, worked here. So now here I am, and now the circle is complete." Today, he oversees the horticulturists charged with designing, planting, and maintaining the conservatories and outdoor display gardens.

In the near future, his team will also be selecting and cultivating many of the plants grown in the new Oertli Family Hardy Plant Nursery (see page 15), including woody plant material like trees and shrubs. "Hardy plants are the backbone of the Garden, and the new Nursery will allow us to grow almost all the plant material we need on the grounds," he says. "Plus, with this acreage, we can have the time and expertise to grow quality plants—some of it wild-collected, rare, or threatened—before they're ready to go on our grounds or reintroduced in the wild."

To read more about horticulture and plant conservation, see page 14.

what can you do?



#Happy40JG: Enter Our Japanese Garden Photo Contest On Instagram

It's the 40th anniversary of the Japanese Garden! Join the celebration and explore this iconic garden with your camera. To enter our photo contest, just share your photos on Instagram using our hashtag #Happy40JG now through August 1.

Monthly winners will get passes to the 2017 Japanese Festival and have their photo displayed in the Garden's Ridgway Visitor Center in the fall. Plus, they'll be in the running for the grand prize—Festival membership for a year! For contest rules and details, visit www.mobot.org/japanesegarden.

LITTLE SHOP AROUND THE CORNER

ANTIQUES • HOME & GARDEN FURNISHINGS



Donate Your Antiques or Furniture and Support the Garden's Mission

Downsizing or done with spring cleaning? Consider making a donation to the Garden's Little Shop Around the Corner, an antique and collectible shop that resells donated vintage merchandise, with proceeds supporting the Garden. The shop specializes in high-quality furniture, artwork, vintage jewelry, silver, china, and other accent furnishings. Stop by to make your donation or shop for unique antiques at 4474 Castleman Ave., just down the street from the Garden's main entrance. The shop is open Tuesday through Saturday from 10 a.m. to 4 p.m. Members always receive a discount, and donations are tax-deductible.



Homeowners will find a wide array of exhibitors with expert advice to live a greener life.

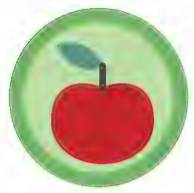
Learn How to Grow and Build Green With the Garden

Join the Garden's EarthWays Center at the Green Homes Festival, presented by Ameren Missouri, on June 3 from 9 a.m. to 4 p.m. Visit more than 40 exhibitors for home improvement ideas and plant-based options for a healthy home. Learn what you can do to protect and restore air, water, and soil so that plants and people can thrive. Plus, enjoy family activities, presentations, hands-on DIY demos, and local foods. Included with Garden admission; free for members. For more, visit www.mobot.org/greenhomesfest.



Visualize Biodiversity Through Science and Art

The *Wild Ideas Worth Sharing* speaker series, a collaboration of the Garden-led BiodiverseCity St. Louis network and the Academy of Science St. Louis, offers opportunities to network, learn, and envision a more biodiverse region and world. On July 25 from 5:30 to 7:30 p.m., David Haskell, author of *The Forest Unseen* and *The Songs of Trees*, will headline "Visualizing Biodiversity for a Better World: How science, art, and imagination create change." The event is free, but registration is required. Visit www.biodiversecitystl.org for more information.



Join Us for Our Second Annual Educator Appreciation Week

If you are a PreK–12 teacher, administrator, or professional; homeschooling parent; or higher ed professor, instructor, or staff, this is for you. At the Garden, we thank educators for their daily, unwavering commitment to creating curious, lifelong learners. From July 31 through August 6, educators receive 20% off memberships and a chance to enjoy the Garden for free on Tuesday, August 1, from 5 to 8 p.m., as they learn more about the Garden's school-supporting offerings.

You can also send an email to our Education team at teachertraining@mobot.org with your name and preferred email address so we can keep you up-to-date on all the Garden offers educators.

SUMMER BUGGIN'

Check Out the New Family Sundays at the Butterfly House

We are "buggin' out" at the Sophia M. Sachs Butterfly House this summer! New this summer, we're inviting families with kids of all ages to join us for Family Sundays from 10 a.m. to 3 p.m. In July, come splish and splash in our interactive water play stations as you learn all about water bugs. In August, take a journey with the beloved monarch butterfly as you learn everything from its migration to what its colors mean. Activities are free for members and included with Butterfly House admission for nonmembers. For more details, visit www.butterflyhouse.org.



Explore The Missouri River Through Time

Dan Burkhardt, founder of the Katy Land Trust, with his wife Connie, have written a book for young readers called *Growing Up with the River: Nine Generations on the Missouri*. It takes a look at the generations that grew up along the Missouri River, and Shaw Nature Reserve is highlighted as an important feature of the region. As a special offering during this summer's Member Tuesday Nights, the authors and Nature Reserve staff will give a presentation on August 1 at 6 p.m. with a book signing immediately afterward. Books available for purchase at the Garden Gate Shop and the Nature Reserve's Visitor Center. Presentation free and open to the public; registration required: www.mobot.org/events.

Experience This Year's Solar Eclipse At The Garden

The United States hasn't seen a total solar eclipse in 26 years, but that changes this summer. Considered "The Great American Eclipse," the total solar eclipse will occur August 21, and Missouri is on its path of totality. The Garden is fortunate to be one of the spots in the region where people will be able to witness it. To ensure safe observation of the eclipse, the Garden will be providing eclipse glasses on a first-come, first-serve basis to 500 visitors who arrive between 12:30 and 1:30 p.m. The eclipse is set to occur around 1:30 p.m. For more information about the eclipse and the importance of special eye protection, visit www.eclipse2017.org.



gift calculator



Learn More About Planned Gifts With Our New Online Tools

Members of our Heritage Society make planned gifts to support the Garden. But what is a planned gift? How do bequests work? Can anyone create a charitable annuity? Check out our new online tools to help you learn more and find the ideal gift that fits your goals while allowing the Garden to grow. To learn more, please visit www.mobot.org/plannedgiving.



discover the Garden by
day|night

quick guide to the Garden's activities before and after sundown

Orange Blossom by Craig Mitchell Smith

This summer, the Garden is proud to offer a special exhibit like no other. *Garden of Glass: The Art of Craig Mitchell Smith*, presented by PGAV Destinations, features larger-than-life sculptures artfully displayed among the tropical landscape of the Climatron®. Visitors can also view *Moth Orchid*, *The Muses*, *Orange Blossom*, and *Make a Wish* before entering the exhibit to get a preview

of what's waiting inside the iconic conservatory.

The exhibit, however, is only one of the many activities visitors can enjoy at the Garden during the day. From connecting with herbs and browsing plant societies' shows and sales to exploring Garden founder Henry Shaw's historic home and exploring nature through play, there's something for everyone!



Herbs & Heirlooms Tuesdays

Tuesdays | June 6–August 29 | 10 a.m.–noon |

St. Louis Herb Society Garden (behind Tower Grove House)

Connect with some of the oldest friends of cultivated gardens: herbs. Explore the culinary, sensory, and beauty uses for the herb featured each week. The first 150 participants will pot an herb to take home and receive a plant profile sheet with care tips and ways to use their new plant. Included with Garden admission.

Tower Grove House

Wednesdays–Sundays | April–December | 10 a.m.–4 p.m.

The Garden has expanded in the years since 1859; come see for yourself where it all began. Step back in time and experience the country home of Garden founder Henry Shaw. See the house as it was when he lived in it during the Victorian Era, with artifacts belonging to Shaw himself. Staff and volunteer interpreters are on hand to share with you the rich history of the Garden, Shaw, and Tower Grove House. Included with Garden admission.

Doris I. Schnuck Children's Garden

Daily | April–October | 9 a.m.–4 p.m. | Open late on Member Tuesday Nights and Whitaker Music Festival Wednesdays

Explore the wonders of Missouri caves, connect with food in the edible garden, discover the power of pollinators, and more. Plus, when the temperature hits 70°F, the Splash Area turns on to help kids and their families stay cool and have fun. \$5 nonmembers (ages 3–12); \$3 members (ages 3–12); Free for kids ages 2 and under and visitors ages 13 and up. Free for members all day on Tuesdays, as well as Saturdays from 9 a.m. to noon; Free every day for members at the Friends and Family level and above.

Plant Societies' Shows and Sales

Year-round | Check Calendar Online

Visit www.mobot.org/plantsocieties for the latest information on Garden-sanctioned member plant societies hosting display shows and sales at the Garden. Discover new cultivars and old favorites as the area's top growers share plant care advice and information about their organization. Included with Garden admission.



Crêpe Myrtle by Craig Mitchell Smith

While the fused glass sculptures are impressive to see no matter the time of day, the Garden of Glass exhibit was designed to be viewed at night, particularly the pieces accompanied by light amid the magical nighttime setting of the Climatron's rainforest. From May 25 through August 12, you can experience Garden of Glass Evenings

from 7 to 11 p.m. Thursdays through Saturdays. Arrive early and stay late for a stroll through the Garden as you enjoy live music, food, and drinks.

In addition to the special viewing of Garden of Glass, enjoy the Garden at night through member-only events, our popular music festival, and other opportunities.



photos by Randy Blankenship, Mary Lou Olson, Karen Fletcher, and Josh Nezam

Garden of Glass: The Art of Craig Mitchell Smith

Daytime Viewing | Daily | Now–August 13 | 9 a.m.–5 p.m.

Evening Viewing | Thu–Sat | May 25–August 12 & Sun., May 28 | 7–11 p.m.

Presented by PGAV Destinations

All members enjoy discounted day and evening tickets for Garden of Glass. Visit www.mobot.org/glass to purchase timed tickets. Advance tickets are recommended, especially for evening viewings. Festival and Contributor levels receive a limited number of free tickets, which you can request at www.mobot.org/festivalmembers or the Ticket Counter. Members in the Garden's Giving Societies also receive free entry to Garden of Glass. Email donors@mobot.org or call (314) 577-5173 to request VIP passes.

Night Blooms

It may be dark outside, but plants take center stage at the Garden after the sun goes down. Among the most stunning night blooms are the Victoria water lilies in the Central Axis. These massive flowers open at sundown, reaching peak bloom overnight. And if you're lucky, you may also witness the night-blooming Dutchman's pipe cactus (*Epiphyllum oxypetalum*) in the Climatron. It was the inspiration for Mitchell Smith's *Blooming Night Cactus*; its blooms are rare and wilt by sunrise.

Member Tuesday Nights

Tuesdays | Memorial Day–Labor Day | 5–8 p.m. |

Closed July 4 and August 8

Members enjoy exclusive evening access to the Garden on Tuesdays all summer long! Connect with fellow members, play in the Children's Garden, enjoy a twilight stroll, take a tour with Garden docents, and discover new surprises each and every week! For more information and a schedule of weekly happenings, please visit www.mobot.org/membertuesdays.

Whitaker Music Festival

Wednesdays | May 31 to August 2 | Music begins at 7:30 p.m. |

Funded by the Whitaker Foundation

Warm, rose-scented evenings also mean the annual Whitaker Music Festival has returned. These free Wednesday evening concerts feature an eclectic mix of artists, and visitors are welcome to bring their own picnic supper, baskets, or coolers. Picnic fare, beer, wine, soda, and sno-cones are also available for purchase on-site. Free admission after 5 p.m. For more details and a full lineup, visit www.mobot.org/whitaker. Please note that glass is no longer permitted in the Garden.



a new ark

how horticulture at the Garden is
advancing plant conservation

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Botanical gardens hold documented collections of living plants for the purposes of scientific research, conservation, display, and education. Serving as a botanical ark will always be at the core of institutions like the Missouri Botanical Garden. However, new times call for new measures.

Plant species are going extinct at unprecedented rates today, and botanical gardens' conservation role has become increasingly important. With its strong arsenal of scientific and technological tools, and an unparalleled level of expertise on plants, the Garden today is poised to lead global plant conservation efforts. It is redefining what it means to be a botanical garden—a new, modern ark.

Few botanical gardens possess all the necessary pieces to complete the plant conservation puzzle on a global scale. Building on its strong foundation of discovering and classifying plants, the Garden has grown its ecological restoration, seed banking, and conservation genetics programs in recent years.

The horticulture program has also shifted its focus to better support conservation, and the education and outreach staff work tirelessly to connect the larger community and visitors to the Garden's work. "We each carry a piece of the puzzle," says Andrew Wyatt, Senior Vice President of Horticulture and Living Collections.

Horticulture is playing an increasingly important role in building the new ark. After all, what's a botanical garden without its living collection—its plants. Next time you visit the Garden, take a closer look at the plants on display. From plant sourcing and record-keeping to propagation to cultivation, their journey illustrates how horticulture can step in and change the tide of extinction. "I think we're one of the most innovative botanical gardens in combining our horticulture with plant documentation and using that data to make decisions," Wyatt says. "It's a very exciting direction for us to go in."

00110001 | Data Recording

Determining which specimens make it into the ark is no small task, especially when so many are either rare or endangered, and the clock is ticking. The foundation of plant conservation is taxonomy (the science of identifying and classifying specimens). But for effective conservation to happen, record-keeping sits firmly on top of that foundation. The Garden aims to target and acquire plant species with detailed records, such as the collection coordinates, the number of individuals that have been sampled, and the environmental conditions under which they live in the wild. This helps with learning how to grow a plant and obtaining diverse genetic representation. The goal is to replicate the natural environment during propagation to conserve the plants on Garden grounds or, ideally, reintroduce them to their native habitat in the future.

00110010 | Testing, Testing

In the Garden's nurseries, horticulturists are responsible for the propagation of seeds and cuttings that have been collected in the wild around the world. Bringing these plants to life also comes with the responsibility to record and document successes and failures of trials. This information helps horticulturists improve propagation techniques and can support conservation efforts within the Garden and around the world.

00110011 | Caring for Plants

An ark's effectiveness depends on its ability to safeguard its contents in the long term. Similarly, a botanical garden's conservation efforts are only as good as its knowledge and success of plant species cultivation. Once rare or endangered species have been added to the collection and propagated in the nurseries, it is the horticulturists' task to ensure they survive. As plants are cultivated on Garden grounds, horticulturists gain knowledge to support species level cultivation. Record-keeping is also important during this step; making note of any special cultivation techniques used and attributes of the plants help guide conservation work.



The records are as important as the plants themselves and serve as a framework for their preservation.

–Rebecca Sucher,
Living Collections and
Plant Records



I can't do my job well without the help of Plant Records ordering and documenting incoming seed, nor would my plants have a home and a chance at survival without our talented horticulturists out on the grounds.

–Justin Lee,
Plant Propagator, Nursery



Many of these plants have never been grown here before, so I trial the plants in different locations to discover where they can thrive.

–Mariel Tribby, Grounds

WHERE THE PLANTS GROW

In 2016, the Garden announced that it would be expanding its nursery operations with the opening of the Oertli Family Hardy Plant Nursery thanks to the generous gift of nearly 6.3 acres of land just south of the Garden. After months of demolitions, land clearing, and preparation, construction of the main greenhouse is set to start this summer and be completed this fall.

The Nursery will have a big impact on what people see when they visit the Garden. It will allow the Garden to grow approximately 95% of all the plant material needed on the grounds. It will also support the Garden's plant conservation efforts by allowing horticulturists to grow more wild-collected plants of conservation concern. These plants will be added to the on-site displays or reintroduced to their native habitat.

Learn more at www.mobot.org/hardyplantnursery.

Learn More!

To read more about horticulture's role in conservation, please visit www.discoverandshare.org.



the meaning of GIVING

volunteers and a love for the Garden
that can last a lifetime

A small pin can mean the world to someone. For many volunteers, the Garden's pins represent years of dedication, hard work, friendships, sense of purpose, and more. At only 3/4" in diameter, the volunteer pin has a big meaning. The different gemstones represent a decade as a Garden volunteer: ruby for 10 years, emerald for 20, diamond for 30, diamond and two rubies for 40, and diamond and two emeralds for 50.

No one has ever received that last one. This year, that changes as Nora Stern becomes the first volunteer to celebrate 50 years at the Garden.

Our volunteers
have lots of
energy and
talents to
share, and they
want to be part
of something
bigger.

Stern still remembers her first years volunteering at the Garden in the 1960s. She and her good friend Sandra Stemmler would help their mothers, both of whom were volunteers, during floral show preview parties. That was before she officially joined the Members' Board in 1967, called Friends of the Garden at the time. "Back then, it was a very different Garden," she says. "To watch it grow has been unbelievable. I got to witness that. How lucky am I?"

A lot has changed since then. Gardens have been built, events have evolved, and the number of staff has grown. However, one thing has remained constant: our volunteers. In fact, volunteers have always outnumbered the staff. When Stern first started volunteering, she knew every staff member by name. There were around 100 people on staff back in 1967. Today, there are just over 400, but the 2,000 volunteers still make up a larger part of the Garden.

From the beginning, the Garden has always been fortunate to have people volunteer their time and skills for the Garden's greater good. Records show that the volunteer program grew out of the Friends of the Garden membership group that Garden Trustee Dudley French founded in 1939. The program as we know it today was established in 1973, inspired by the volunteer program of the American Red Cross.

It's no surprise that horticulture is the first area that comes to mind for those thinking about volunteering at the Garden. Other than special events, the Horticulture division has the largest number of volunteers. But did you know that nearly 400 people volunteer at the Sophia M. Sachs Butterfly House, and that we have 274 volunteers in the Education division? Nearly 100 volunteers work with our scientists, helping with data management, specimen mounting in the herbarium, and even describing plant species. "Our volunteers have lots of energy and talents to share, and they want to be part of something bigger," says Scott Bahan, Volunteer Program Manager. "When we find the right position in the right department and working with the right staff, it's a relationship that benefits everyone involved. That's something that can't be quantified."

The Garden opened to the public more than 150 years ago. Connecting with plants and the history that lives within these 79 acres can make a strong, lasting impression on someone. For many people, volunteering at the Garden represents many memories. For others, it can help find a purpose again or take a first step back into the world. Staff at the Garden know this, and they respect volunteers, value their time, and help them learn something new. "Without volunteers, the Garden would not be the Garden," says Jackie Juras, former Volunteer Program Manager. "It's a community, and they take pride in that."

Juras worked with volunteers at the Garden for 14 years, and she was always inspired by them and their dedication to the Garden. She recalls a time when her office considered doing away with the volunteer pins as recognition in favor of gift certificates. But volunteers asked not to get rid of them. "Being a volunteer at the Garden really means something to them," she says.

And that couldn't be more true than for Stern. At this year's annual Volunteer Service Recognition Luncheon in June, she will receive one of those pins to commemorate her 50 years of volunteer service to the Garden. "The Garden has filled a big part of my life," she says. "I walk around the Garden, and I'm so proud of it. I think it's the most beautiful garden in the world."

Become A Volunteer!

If you've been thinking about volunteering at the Garden or any of our other sites, visit www.mobot.org/volunteer for more information and testimonials.

photo by Yihuang Lu

VOLUNTEER SNAPSHOT

The Garden would not be the world-renowned institution it is today without its dedicated volunteers. It is thanks to you that so much of our work is possible.

2,061 volunteers and 422 staff, or

5 volunteers

for every staff member



137,700

volunteer hours logged last year

equivalent to 70 full-time staff

volunteers by department†



689
special events



274
education department



139
shaw nature reserve



667
horticulture



131
litzinger road ecology center



393
butterfly house



96
science and conservation

*2016 numbers | † some volunteers work across multiple departments/areas
Illustrations by Anna Raspopova

just for members



On the road with Garden membership: Reciprocal benefits

Traveling this summer? Don't forget your membership card! You receive benefits at more than 300 gardens and arboreta across North America. For a complete list, visit www.ahsgardening.org/gardening-programs/rap/find.

Member Tuesday Nights

Memorial Day–Labor Day | 5–8 p.m.; closed July 4 and August 8

Enjoy extended Tuesday hours this summer plus admission to the Children's Garden, Member Speaker Series programs, docent-led tours, and more. Details at www.mobot.org/membertuesdays.

St. Louis Garden Tour

June 11 | 9:30 a.m.–4:30 p.m. | Off-site

Visit seven spectacular gardens in a self-guided tour across our community. Each garden also includes a unique themed tablescape and expert advice from Master Gardeners. \$50 members. Advance ticket purchase required: www.mobot.org/gardentour.

Member Speaker Series: Beginner Beekeeping

June 13 | 6–7 p.m. | Shoenberg Theater

Certified Master Beekeeper Jane Sueme shares tips for beginners. Come and ask questions! Presented during Member Tuesday Nights. Registration required.



i

Information and registration at (314) 577-5118 or www.mobot.org/memberevents unless otherwise noted.



photos by Tom Incrocci, Phoebe Mussmann, and Sundos Schneider

Family Picnic

June 27 | 5–8 p.m.

Bring your blankets, chairs, and waste-free picnic fare, and join us for this annual members-only summer celebration! This special evening will offer fun for the whole family with live music by the old-time stringband The Root Diggers, puppetry with Bob Kramer's Marionette Co., docent-led tours, face painting, crafts, and balloon artists. Visit with our friends from the Butterfly House and Shaw Nature Reserve, and play in the Children's Garden after hours! Free popcorn and lemonade will be served, with picnic fare and barbeque also available for purchase. Registration required.

Member Speaker Series: Caring for Cacti and Succulents

July 18 | 6–7 p.m. |
Shoenberg Theater

Learn all about cacti and succulents from Pam Schnebelen of the Henry Shaw Cactus and Succulent Society. After the presentation, visit the Desert Exhibit in the Linnean House. Presented during Member Tuesday Nights. Registration required.

Member Speaker Series: Daylilies

August 17 | 11 a.m.–noon
Shoenberg Theater

Garden horticulturist Sara Neil will share the history of the Garden's daylily collection as well as techniques and resources for the home gardener. Registration required.

special events

Illinois Appreciation Week June 11–17

Illinois residents receive \$6 Garden admission from 9 a.m. to 5 p.m.; a 10% discount in the Garden Gate Shop and Little Shop Around the Corner; and a 20% discount off new or renewal memberships purchased on-site this week (with a valid Illinois ID).



**2017
green
homes
FESTIVAL**

June 3 | 9 a.m.–4 p.m.

Presented by  **Ameren
MISSOURI**

www.mobot.org/greenhomesfest

AmerenMissouri.com/rebates

Visit more than 40 exhibitors and experts for help with home improvement ideas and plant-based options for a healthy home. Connect to what you can do to protect and restore air, water, and soil so that plants and people can thrive. Plus, enjoy family activities, presentations, hands-on DIY demos, and local foods. Included with Garden admission; free for members.



Garden Gallop

June 25 | 7–9 a.m.

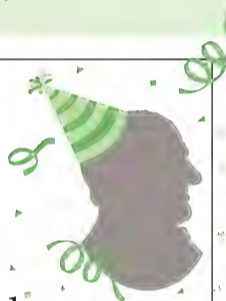
Presented by Graybar

Join the Young Friends of the Garden for a 5K fun run. All proceeds benefit the Children's Garden. \$30 members and virtual runners; \$40 nonmembers. Tickets required: www.mobot.org/gardengallop.

Henry Shaw's Birthday

July 24 | 9 a.m.–5 p.m.

All visitors enjoy free admission in honor of Garden founder Henry Shaw's 217th birthday. Festivities take place from 10 a.m. to 3 p.m. and include a silhouette artist, stilt walker, balloon artist, and marionette shows. Tower Grove House will be open from 10 a.m. to 4 p.m. Enjoy 20% off Garden memberships at the Membership Services Desk. More details at www.mobot.org/events.




**Whitaker
MUSIC FESTIVAL 2017**

Wednesdays | May 31–August 2
Concerts at 7:30 p.m.
Free admission after 5 p.m.
www.mobot.org/whitaker

May 31		Roland Johnson & Soul Endeavor
June 7		Jack Grelle
June 14		The Gaslight Squares
June 21		Hazard to Ya Booty
June 28		Big Mike Aguirre and the Blu City All Stars
July 5		Beth Bombara
July 12		Ptah Williams
July 19		Kevin Bowers
July 26		The Mighty Pines
August 2		Brothers Lazaroff

Funded by **WHITAKER FOUNDATION**

Fireflies After Dark–NEW

June 28 | 7:30–9:30 p.m. |

Butterfly House

Learn about Earth's living lanterns as you enjoy delicious small bites from Sugarfire Smoke House, taste a variety of libations, and go on moonlit strolls to see real fireflies. Attendees must be at least 21 years of age. \$25 members; \$35 nonmembers; \$15 designated drivers. Tickets required: www.butterflyhouse.org.



Adventures with Cocktails

August 25 | 5:30–8 p.m.

Part scavenger hunt, part cocktail crawl, this exciting fundraiser offers you spirit sampling from local distilleries, botanical teasers, and live music in the Children's Garden. Proceeds benefit the Children's Garden. Attendees must be at least 21 years of age. \$20 members; \$30 nonmembers. Tickets required: www.mobot.org/cocktails.

From gardening tools and unique toys to vintage items and local products, the Garden shops have just what you're looking for. Look for these icons to know where each event or sale is taking place.



Garden Gate Shop

4344 Shaw Blvd.
St. Louis, MO 63110
Monday–Sunday
9 a.m. to 5:30 p.m.
(314) 577-5137



Butterfly House Gift Shop

15193 Olive Blvd.
Chesterfield, MO 63017
Tuesday–Sunday
10 a.m. to 4 p.m.
(636) 530-0076 ext. 15



Little Shop Around the Corner

4474 Castleman Ave.
St. Louis, MO 63110
Tuesday–Saturday
10 a.m. to 4 p.m.
(314) 577-0891

Garden of Glass Gallery

This summer during *Garden of Glass: The Art of Craig Mitchell Smith*, purchase original pieces created by the artist as well as other glass pieces for the home and garden. Visit us in Spink Gallery on the second floor of the Ridgway Visitor Center. All members enjoy up to 10% discount. See shop for details.



First Fridays

First Friday of the month | 🌿

Discover something new—from book signings to food samplings to trunk shows. More at www.mobot.org/shop.

Staff and Volunteer Sale

June 7–9 | 🌿 🦋 🧑

As a thank you for making the Garden a world-class institution, all Garden staff and volunteers receive an extra 10% off their purchases.

Firefly Festival Sale

June 14 and 21 | 🦋

All visitors enjoy 20% off their purchase during the Butterfly House's Firefly Festival. Check out our great selection of firefly books and toys! No additional discounts apply. See shop for details.

Curious Book Sale

July 7 and 8 | 🦋

Enjoy Breakfast with Curious George at the Butterfly House and 20% off any gift shop book purchase, including Curious George and many others. No additional discounts apply. See shop for details.

Family Sundays Sale

Sundays in July and August | 🦋

Get 20% off your purchase in the gift shop during the Butterfly House's Family Sundays. No additional discounts apply. See shop for details.

Member Double Days

June 4–5 and August 6–7 | 🌿

All Garden members receive 20% off purchases or double card punches.

Double Punch Day

July 24 | 🌿

In honor of Henry Shaw's birthday, all members receive double card punches.

Around the World Wine Dinners

Third Thursday of the month | Through

October | 6:30 p.m. | Spink Pavilion

Travel to wine-producing regions through a five-course dinner paired with a different wine from the same region. \$70 (plus 18% service charge and tax). Advance reservations required: (314) 577-0200.

Café Flora

Through October 29 | 10 a.m.–2 p.m. | Saturdays and Sundays

Enjoy a delicious brunch at the iconic Spink Pavilion. Call (314) 961-7588 ext. 265 for more information.

Extended Evening Hours

Tuesdays | 5–8 p.m.

This summer, the Garden Gate Shop will stay open until 8:30 p.m. during Member Tuesday Nights (see page 18) Enjoy these extended shopping hours!

» staff pick



Lolipop Jewelry

It's all about glass! Check out the newest accessory line, Lolipop, by Jonathan Leon. The collection features necklaces, bracelets, rings, and earrings made of borosilicate (Pyrex) glass. The pieces are both eclectic and beautiful. Prices range from \$44.99 to \$69.99. Available at the Garden Gate Shop.

commemorative gifts

January–March 2017.

A commemorative gift is a wonderful way to honor family and friends. Gifts of \$50 or more are listed in the *Bulletin*. For more information about giving opportunities at the Missouri Botanical Garden, please call (314) 577-5118 or make a commemorative gift at www.mobot.org/tributes.

In Honor of

Mr. and Mrs. Robert J. Fry
Ms. Martha Wright

Mr. Oliver Adams Hildebeitel
Jack and Annie Adams

Mrs. Alta Lawson
Mr. Christopher Lawson and
Ms. Jacqueline Nguyen
Mr. Nathan Lawson

Mr. and Mrs. James S. McDonnell III
Mr. and Mrs. Charles E. Kopman

Annie Mueller
Mr. and Mrs. Martin Lenihan

Joan Murphy
John S. Loy

Pat Owens
Carl Nielsen and
Marianne Axboe
Ms. Rebecca Ballard
Mr. and Mrs. Harold M. Cobb, Jr.

Mr. and Mrs. Roger Fauss
Mr. Glenn Johnson
Mr. and Mrs. John H. Russell
Charles and Barbara Schrock

The Ruwitch Family
Mrs. Elizabeth Ruwitch

Mayor Francis Slay
Civic Progress

In Memory of

Charlotte "Shellie" Antel
Mrs. Janet M. Thompson

Helen Berger
Mrs. Emily LaBarge

Art Bessler
Karen Oglesby

Ms. Reva Jane Billings
Dr. and Mrs. Joshua Mongler

Mrs. Judy Borst
The family of Judy Borst

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Ms. Jennifer Low
Sara and David Loyet

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Mr. James U. Wright
Mr. and Mrs. Doyle D. Perry
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Dr. Janet Wilking

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Judy and David Onken
Ms. Patricia White

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JoAnn and Richard Schreiber

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Bill Fellenz
Mrs. Jean Leonhardt

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Dr. Kathleen Miller
Charles and Mary Jane Tessaro

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Sandler

Wilma Kay Santiago
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Robert and Kimberly Williams

Susan Vighi-Evers
Stephen D. Uelk

Marvin & Jayne Voissem
Ms. Karen Leonard and Ms.
Rachel Leonard

Mrs. Jane Williams
Twenty Five Gardeners of
Kirkwood

MEMBERS ENTRY COURT

January–March 2017.
For more information, call
(314) 577-5118 or visit
www.mobot.org/donate.

Engraved Clay Bricks

Dr. John E. Averett
Mrs. Audrey K. Averett
Mary Merello
Amy Pool
Arlene Zarembka

Walter Behrendt
Sharon Harnes
June Hutson
Dr. Robert Magill
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Ms. Cynthia A. Meiners

David, Gregory & Susan Smith
Ms. Susan Smith

Christopher Sumner
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BUTTERFLY HOUSE

January–March 2017.
Call (314) 577-5118 or visit
www.butterflyhouse.org/
donate to learn more.

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The Vandiver Group

Ms. Jane Fields
Vickie Campbell

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Lucy, Ari and Sam Scheitlin
Mr. William H. Scheitlin and
Cori Scheitlin

Mr. and Mrs. John Stempf
Mr. and Mrs. John Stempf

Patricia "Paty" Yaeger
Mrs. Susanne Yaeger

commemorative giving



In Memoriam: Martin Schweig

Martin Schweig, Jr. passed away this March. He served as a commissioner of the Garden's Zoo-Museum Subdistrict since his appointment in 1993; he served as Chair in 1997 and 2007, as well as Vice Chair, Treasurer, and Secretary during his more than 20 years of service. As part of his role with the subdistrict, he was most recently the representative on the Garden's Board of Trustees Horticulture Committee.

After serving in World War II, Martin became the third generation owner and operator of Schweig Studio & Gallery, a business founded by his grandfather in 1889. He was the photographer of choice for weddings, debutante balls, and society events. Later, that love of photography transitioned into a love of photographing plants, particularly cacti. Martin worked closely with the Garden and the Henry Shaw Cactus & Succulent Society, helping out at numerous show and sales.

We honor Martin and his decades of service to the Garden and the St. Louis community, and for his shared love with the Garden for plants and nature.



In Memoriam: Mary Ann Lee

Longtime Garden supporter and St. Louis philanthropist Mary Ann Lee passed away on April 17. She was well-known across her hometown for her generosity and served on the boards of several organizations. She received a number of awards recognizing her enthusiastic support of a wide range of causes, programs, and organizations.

The Garden is honored to be one of the many local institutions Mary Ann impacted through her incredible generosity. She was a lifelong visitor and a member for more than five decades. Many of her gifts focused on the intersection of children, education, and the natural world. Mimi's Village in the Doris I. Schnuck Children's Garden is named in her honor. She dedicated the Lee Lodge at Shaw Nature Reserve's Dana Brown Overnight Center to her late husband, Des Lee. Other significant areas of support included Tower Grove House and the Garden's endowment. In 1997, Mary Ann and Des were both awarded the Henry Shaw Medal for their incredible commitment to the Garden.

We are profoundly grateful for Mary Ann's friendship and her support for so many deserving organizations in our community.



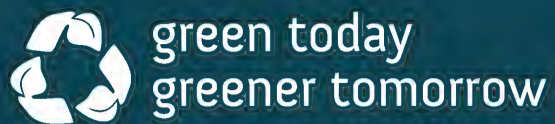
honor the
garden
lover in your
life

Someone in your life loves the Missouri Botanical Garden. Maybe it's your mom. Your sister. Your best friend. Your son. Your partner. Maybe—it's you.

Now is a great time to **honor someone in your life** who has a special connection to the Garden. Someone who knows our landscapes. Someone who looks forward to our flower shows. Someone who takes classes on gardening. Someone who volunteers here. Someone who comes to all the festivals.

We ask you to **celebrate this love** of the Garden today with a special gift to honor the Garden enthusiast in your life.

Learn more at
www.mobot.org/tributes



The Missouri Botanical Garden strives to make the most sustainable choices possible to benefit people, plants, and the planet. That's why we offer an interactive online version of the *Bulletin* as well as a downloadable PDF. Sign up by sending an email to membership@mobot.org. Let us know if you'd like to forego your paper subscription.

You can also send an email if:

- Your name is misspelled
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JAPANESE FESTIVAL

Labor Day Weekend | September 2-4
www.mobot.org/japanesefestival

Join or renew
at the event and
get in for free!





MISSOURI BOTANICAL GARDEN

calendar

www.mobot.org/events

june | july | august



Young Friends of the Garden is a group of young professionals with an interest in the Garden's work in promoting sustainability and strengthening cultural life. The Young Friends Council hosts events and engages young professionals with the Garden's mission, playing an important role in the Garden's future.

garden GALLOP

June 25 | 7–9 a.m.
Presented by Graybar

\$30 members and virtual runners
\$40 nonmembers
www.mobot.org/gardengallop

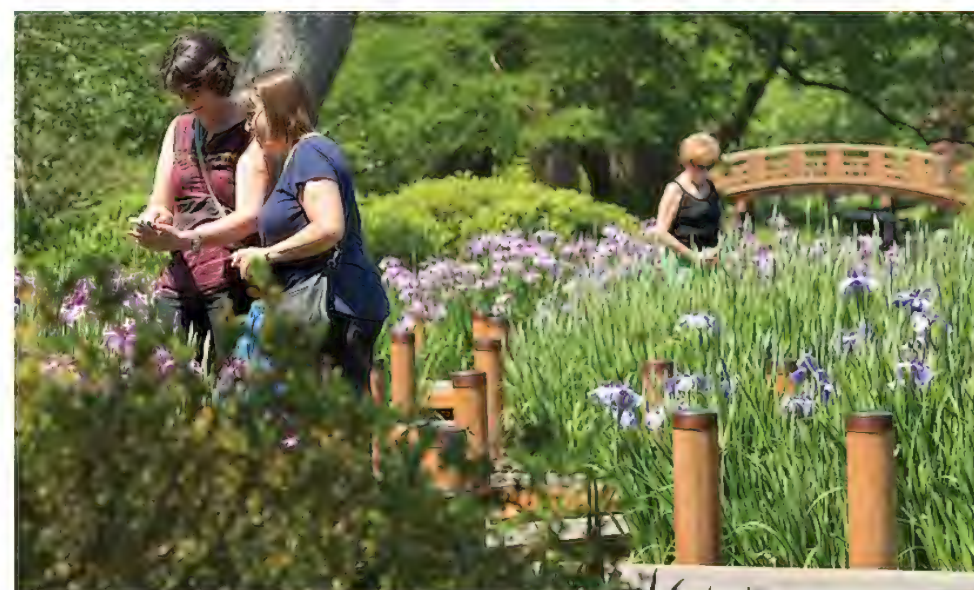
adventures with cocktails

August 25 | 5:30–8 p.m.
\$20 members; \$30 nonmembers;
\$15 designated driver
for ages 21 and up
advance tickets required:
www.mobot.org/cocktails

All proceeds benefit the Children's Garden.

GARDEN OF
glass
the art of craig mitchell smith
NOW–AUGUST 13

Presented by
PGA DESTINATIONS



MEMBER TUESDAY NIGHTS

Tuesdays from 5 to 8 p.m.*

FREE events and activities for members only

Members enjoy exclusive evening access to the Garden on Tuesdays all summer long! Connect with fellow members, play in the Children's Garden, enjoy a twilight stroll, take a tour with Garden docents, and discover new surprises each week!

*Memorial Day–Labor Day; No Member Tuesday Nights on July 4 and August 8

www.mobot.org/membertuesdays

SUMMER BUGGIN'

at the Butterfly House
All Summer Long

Join us for a variety of events that celebrate amazing creatures both during the day and in the evening. Get the wiggles and ants out of your pants during Summer Buggin'!

Firefly Festival: Family Nights

June 14 or 21 | 8–9:30 p.m. | \$12 members; \$14 nonmembers

Family Sundays: Water Bugs–NEW!

Sundays in July | 10 a.m.–3 p.m. | Free for members

Bookworm Breakfast With Curious George

July 7 or 8 | 9–10:30 a.m. | \$15 members; \$20 nonmembers

Family Sundays: Monarch Journey–NEW!

Sundays in August | 10 a.m.–3 p.m. | Free for members

www.butterflyhouse.org



Shaw Family Adventures

at Shaw Nature Reserve

Weekdays* | 9:30–11:30 a.m.

\$7 members | \$9 nonmembers

*check www.mobot.org/classes for specific dates

Join us for an adventure and get hands-on with nature! Each Shaw Family Adventure class includes outdoor activities for your family to learn together about the plants and animals of the Nature Reserve. Price per child. One adult per child, please. For families with kids ages 3 to 10.

www.shawnature.org

june 2017

average temperature: low 66° | high 85°
average precipitation: 3.76 in.

What's in bloom?



Grass pink orchid Foxglove Ox-eye daisy

5/13–8/13 **Garden of Glass: The Art of Craig Mitchell Smith**
Presented by PGAV Destinations | 9 a.m.–5 p.m.
\$ Climatron

5/25–8/12 **Garden of Glass: The Art of Craig Mitchell Smith Evenings**
Presented by PGAV Destinations | Thursday–Saturday | 7 to 11 p.m. | \$ Climatron

6/3 **Green Homes Festival** | *Presented by Ameren Missouri*
9 a.m.–4 p.m. | KC

6/7 **Whitaker Music Festival** | Jack Grelle | 7:30 p.m. | CA

6/7–6/9 **Staff and Volunteer Sale** at the shops | GGS, BHGS, LS

6/11 🌿 **St. Louis Garden Tour** | 9:30 a.m.–4:30 p.m. | 📄 \$

6/11–6/17 **Illinois Appreciation Week** | 9 a.m.–5 p.m.

6/14 **Firefly Festival Family Night** | 8–9:30 p.m. | 📄 \$ BH

6/14 **Whitaker Music Festival** | The Gaslight Squares
7:30 p.m. | CA

6/13 🌿 **Member Speaker Series: Beginner Beekeeping**
6–7 p.m. | 📄 📄 ST

6/21 **Firefly Festival Family Night** | 8–9:30 p.m. | 📄 \$ BH

6/21 **Whitaker Music Festival** | Hazard to Ya Booty
7:30 p.m. | CA

6/24–7/23 **Desert Exhibit** | 9 a.m.–5 p.m. | Linnean House

6/25 **Garden Gallop** | *Presented by Graybar* | 7–9 a.m. | 📄 \$

6/27 🌿 **Member Event: Family Picnic**
5–8 p.m. | 📄 📄

6/28 **Fireflies After Dark–NEW** | 7:30–9:30 p.m. | 📄 \$ BH

6/28 **Whitaker Music Festival** | Mike Aguirre and the
Blu City All Stars | 7:30 p.m. | CA

july 2017

average temperature: low 71° | high 90°
average precipitation: 3.9 in.

What's in bloom?



Lisianthus Tetraploid daylily Pearl millet

5/13–8/13 **Garden of Glass: The Art of Craig Mitchell Smith**
Presented by PGAV Destinations | 9 a.m.–5 p.m.
\$ Climatron

5/25–8/12 **Garden of Glass: The Art of Craig Mitchell Smith Evenings**
Presented by PGAV Destinations | Thursday–Saturday | 7 to 11 p.m. | \$ Climatron

6/24–7/23 **Desert Exhibit** | 9 a.m.–5 p.m. | Linnean House

7/5 **Whitaker Music Festival** | Beth Bombara | 7:30 p.m. | CA

7/7 or 7/8 **Bookworm Breakfast With Curious George**
9–10:30 a.m. | 📄 \$ BH

7/8–7/9 **Henry Shaw Cactus and Succulent Society Show and Sale**
9 a.m.–5 p.m. | RVC

7/12 **Whitaker Music Festival** | Pta Williams | 7:30 p.m. | CA

7/18 🌿 **Member Speaker Series: Caring for Cacti and Succulents**
6–7 p.m. | 📄 📄 ST

7/19 **Whitaker Music Festival** | Kevin Bowers | 7:30 p.m. | CA

7/24 **Henry Shaw's Birthday** | 9 a.m.–5 p.m.

7/24 **Member Double Day** | 20% off purchases or double
card punches | GGS

7/26 **Whitaker Music Festival** | The Mighty Pines
7:30 p.m. | CA

7/31–8/6 **Educator Appreciation Week**

august 2017

average temperature: low 69° | high 88°
average precipitation: 2.98 in.

What's in bloom?



Swamp milkweed Hardy water lily Black-eyed Susan

5/13–8/13 **Garden of Glass: The Art of Craig Mitchell Smith**
Presented by PGAV Destinations | 9 a.m.–5 p.m.
\$ Climatron

5/25–8/12 **Garden of Glass: The Art of Craig Mitchell Smith Evenings**
Presented by PGAV Destinations | Thursday–Saturday | 7 to 11 p.m. | \$ Climatron

8/1 **Educator Appreciation Night** | 5 to 8 p.m.

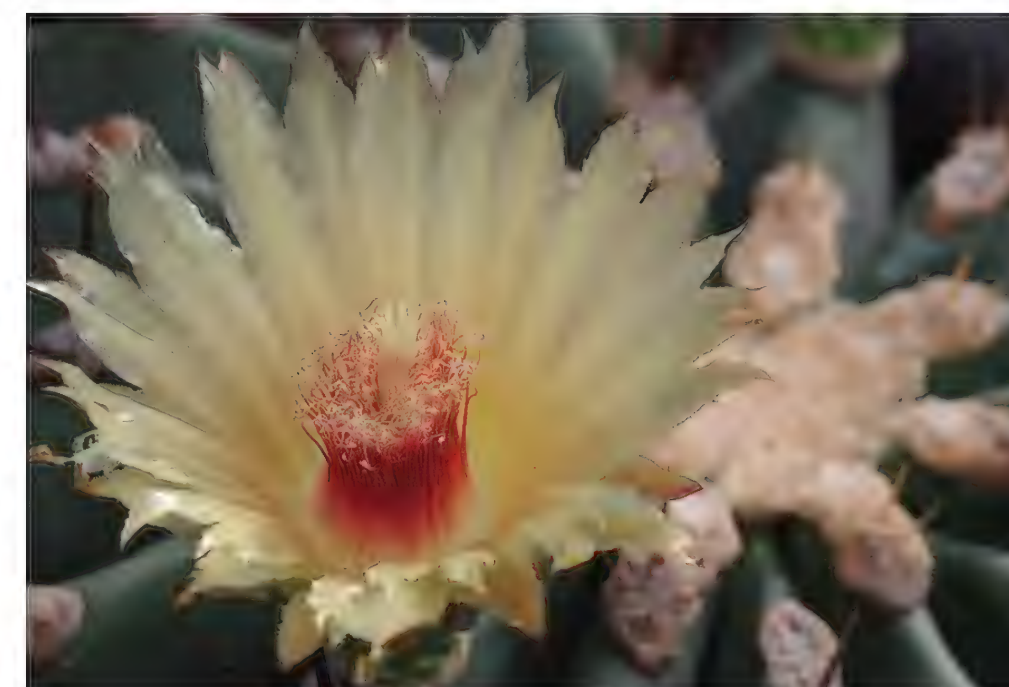
8/2 **Whitaker Music Festival** | Brothers Lazaroff
7:30 p.m. | CA

8/5–8/6 **Greater St. Louis Iris Society Show and Sale**
9 a.m.–5 p.m. | RVC

8/17 🌿 **Member Speaker Series: Daylilies**
11 a.m.–noon | 📄 📄 ST

8/19 **Missouri Botanical Garden Daylily Association Show and Sale**
9 a.m.–5 p.m. | RVC

8/25 **Adventures with Cocktails** | 5:30–8 p.m. | 📄 \$ CHD



your garden



When and how should I water my cool-season lawn?

Homeowners who want to keep their cool-season lawns green and growing during the hot months of July and August need to water. To stay green, cool season grasses need about 1–1 ½" of water per week either from rainfall or your hose.

Applying 1" of water can take about three to four hours with lawn sprinklers, but if applied all at one time, runoff may occur before proper water penetration is achieved. If this occurs, turn off the sprinkler and continue at a later time or date.

One way to check how much water is penetrating is to place small containers at different locations in the sprinkling area. After catching water for one hour, measure the depth to calculate the rate of your sprinkler.

Refrain from frequent light watering. This encourages the lawn to develop shallow roots and makes it prone to damage if the top layer of soil dries out. Shallow-rooted lawns are also more susceptible to disease and insect problems.

In addition, a great deal of water is lost by watering on a hot sunny afternoon. Watering early in the morning is the recommended time both for saving water and also for limiting foliar disease problems, which can be more prevalent when the foliage remains wet over night. Alternatively, you can let a cool-season lawn go dormant for the summer.

More advice and tips at www.mobot.org/gardeninghelp.



Plant Societies' Shows and Sales

Get the latest information about your favorite plant society's show and sale by visiting www.mobot.org/plantsocieties.

Key (All events take place at the Garden unless otherwise noted.)

BH	Butterfly House	KC	Kemper Center for Home Gardening	🌿	Sassafras
BHGS	Butterfly House Gift Shop	LS	Little Shop Around the Corner	🌿	Members-only event
CA	Cohen Amphitheater	MC	Monsanto Research Center	📄	Double punches for Garden Gate Shop
CBEC	Commerce Bank Center for Science Education	MH	Monsanto Hall (in RVC)	📄	Rewards Card
CHD	Children's Garden	RVC	Ridgway Visitor Center	📄	Reservations required
CL	Climatron lawn	SNR	Shaw Nature Reserve	\$	Fee required
GGS	Garden Gate Shop	SP	Spink Pavilion		
JE	Jordan Education Wing (in RVC)	ST	Shoenberg Theater (in RVC)		

photos by (front) Kat Niehaus, Randy Blankenship, Karen Fletcher, Sundos Schneider, and Phoebe Mussman (this page) Lisa Francis and Tom Incrocci

bulletin

Fall 2017

Vol. 105, No. 4

www.mobot.org

 MISSOURI BOTANICAL GARDEN



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hours and admission

For hours and admission prices at our three locations, visit www.mobot.org, www.butterflyhouse.org, and www.shawnature.org.

contact

Missouri Botanical Garden
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on the cover

Arkansas oak from a collecting expedition to the southeastern United States.

Photo by Patrick Thompson.

credits

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sustainability

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To discover and share knowledge about plants and their environment in order to preserve and enrich life.

mission of the
Missouri Botanical Garden

Thank you! Your membership provides critical support for our international and local plant science and conservation work, and Garden memberships contribute 21% of our annual operating funds.
To learn more about the benefits of your membership, visit www.mobot.org/membership, email membership@mobot.org, or call (314) 577-5118.

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from the president



Fall is always a season of celebration at the Garden, whether in the form of our annual festivals celebrating Japanese culture and welcoming the best artisanal craftspeople in the Missouri region, or in the opportunity to linger outdoors longer as summer gives way to cooler days and colorful fall foliage. This year brings us special opportunities to celebrate, from the flowering of another remarkable *Amorphophallus titanum* (the eighth “corpse flower” bloom to take place at the Garden in just five years) to the appointing of a new director to lead Shaw Nature Reserve into the future (see page 5) to the official launch of a public portal for the World Flora Online (see page 13). We are perhaps most excited to celebrate you, our members, with a whole week of benefits and activities this November (see page 9).

Fall is also a great time to reflect on our environment and consider new and innovative ways of understanding the living world around us. Just as fall color manifests in many different hues throughout Garden grounds, the wealth of botanical information collected by Garden researchers and horticulturists yields many diverse interpretations and applications (see page 10). Far below the changing leaves lies another plant family rich in botanical diversity; the “green carpet” of mosses and other bryophytes on the forest floor make up a large and fascinating plant group, and a significant part of the Garden’s renowned herbarium collection (see page 14).

The Garden’s collections cover much more than just plant specimens—from the digital archiving of botanical literature (see page 7) to the Garden’s collection and database of biocultural objects (see page 6), we are always seeking new perspectives on the important role plants play in our lives.

Of course, there are many ways in which you can make plants a more integral part of your life as well. Whether you participate in one of our fall gardening classes (see page 8), shop the Shaw Wildflower Market (see page 20), or simply spend a few moments enjoying our new Stumpery display (see page 15), we hope you will take extra time this fall to celebrate plants and appreciate the unique ways they enrich our world.

Dr. Peter Wyse Jackson, *President*

what's new?



Peter Wyse Jackson Honored by the Garden Club of America

At its annual meeting in Baltimore on May 6, the Garden Club of America (GCA) awarded Garden President Dr. Peter Wyse Jackson one of its highest honors, the Distinguished Service Medal.

The GCA's Distinguished Service Medal was endowed in 1953 by Priscilla Sleeper Sterling, who was interested in both conservation and how horticulture played an integral part in the quality of life. Ladue Garden Club of St. Louis, member of the GCA, nominated Dr. Wyse Jackson for the award.

For the past two decades, Dr. Wyse Jackson has played an influential role in reshaping and leading the international botanic garden community, working extensively with botanic gardens and their network organizations in more than 30 countries. He played a lead role in the development and implementation of the Global Strategy for Plant Conservation, adopted by the United Nations Convention on Biological Diversity in 2002, and has been chairman of the Global Partnership for Plant Conservation since 2004. Under Dr. Wyse Jackson's leadership, the Missouri Botanical Garden has become "the world's most vibrant, effective and influential institution for science-based plant conservation," according to the GCA.



Ameren Corporate Charitable Trust Pledges \$42,000 to Garden Education Programs

The Ameren Corporate Charitable Trust has recently committed a grant of \$42,000 in support of education programs at the Garden. The grant spans two years and covers a broad range of activity, from work with preK-8th graders to teacher professional development to schoolyard action planning.



Deb Frank accepts the 2017 American Public Gardens Association Operational Sustainability Award on behalf of the Garden. Learn more at discoverandshare.org.

Deborah Frank Retires

Deborah Frank, Vice President of Sustainability and Shaw Nature Reserve, will retire this September after 17 years with the Garden.

"Thanks to Deb's contributions, we are all more aware of the critical role each of us plays in stewarding the planet and its resources for a better future," says Garden President Dr. Peter Wyse Jackson.

As one of the founding members of the EarthWays Center, Frank was instrumental in promoting sustainability in the St. Louis region long before joining the Garden. Since the incorporation of the EarthWays Center into the Garden in 2000, Frank has led the entire Garden organization in pursuing a greater understanding of the impact everyday choices have on plants, the environment, and human well-being.

Following her departure from the Garden, Frank will continue to play an active role in making St. Louis a greener, more sustainable place for all.



Dr. Quinn Long

Dr. Quinn Long Appointed Director of Shaw Nature Reserve Following Retiring John Behrer

The Garden recently named Dr. Quinn Long director of Shaw Nature Reserve in Gray Summit. Long has worked for the Garden since 2011 and as a botanist and conservation biologist throughout Missouri and Kansas for 15 years. He begins his new role in September, and replaces long-time director John Behrer.

“Quinn is a well-respected scientist, conservationist, and naturalist who will bring a wealth of knowledge to the role of director,” says Garden President Dr. Peter Wyse Jackson. “He is a proven leader who is passionate about Shaw Nature Reserve and its role in conservation.”

Long-time director Behrer retires after 39 years with the Nature Reserve. In his time as director, Behrer has been responsible for important advances, including the restoration of a 42-acre wetland south of the Meramec River. The site is now registered as an official wetland mitigation bank with the U.S. Army Corps of Engineers. Learn more at discoverandshare.org.

Celebrating the 40th Anniversary of the Japanese Garden

We are celebrating 40 years of *Seiwa-en*, the Japanese Garden. Since 1977, the plantings, waterfalls, beaches, and islands of this beautiful space have welcomed and relaxed millions of Garden guests. Each year, members and visitors tell us the Japanese Garden is a must-see destination. From the spring cherry blossoms to the late summer sacred lotus to the winter snowscapes, each season highlights a different feature.

You can join this celebration! Check out the Instagram #Happy40JG photo collection, make a special anniversary gift, or join us for the Member Speaker Series on September 19 (see page 18). Learn more at www.mobot.org/japanesegarden.



Garden Hosts Eighth Corpse Flower Bloom in Five Years

The Garden once again played host to the infamous stink of an *Amorphophallus titanum*, commonly known as a corpse flower. Octavia, which is Latin for “born eighth,” is the eighth corpse flower to bloom at the Garden in the past five years. At peak bloom on July 9, Octavia was nearly 78 inches tall and 48 inches wide. More than 2,100 people came out after hours to experience the sight and smell of this rare flower.

Garden for the World Update: Construction Progress on New Nursery and Historic Museum

Significant progress has been made on two major *Garden for the World* projects. Construction has begun on the new Oertli Family Hardy Plant Nursery. The Garden is working with HBD Construction on the nursery project site, located on Bent Avenue just south of the Garden, and plans to have the first phase completed by spring 2018.

The Stephen and Peter Sachs Museum has been a hive of activity. Art conservators are working to recreate the ceiling mural and the portraits recently discovered in the south room. Plumbing and electrical service have been updated and expanded. Lead paint removal is underway in the main display hall, and the foundation has been poured for the new addition. All of the original windows have been removed and shipped to an off-site restoration specialist for complete restoration and installation of thermally efficient glass. Learn more at www.mobot.org/fortheworld.



photos by Katie Koschoff and Mary Lou Olson

did you know?



Garden bryologist John Atwood collecting mosses in Missouri.

Mosses of Missouri Checklist

Last summer the specimen data of the *Checklist of Missouri Mosses* was posted online and re-published as a separate bound booklet for wide dissemination. The checklist is a specimen-based list that utilizes more than 20,000 moss specimens stored in the Garden's Herbarium. The completion of the checklist was instrumental in revising the ranks of mosses listed on the Missouri Department of Conservation's *Checklist of Species of Conservation Concern*. Based on distribution data from the checklist, several species of mosses were taken off the state's conservation watch list. The list also highlighted several species that are critically endangered at the state level. Missouri is unique; few states have a modern, comprehensive list of mosses occurring in the state.



Coloring Book Discovery

A rare coloring book was recently discovered in the Peter H. Raven Library. *The Florist* was published around 1760 in London, and fewer than a dozen copies of this book are known to exist today. Aside from a small smudge of green, the book's 60 images of plants remain uncolored.



Tibetan Mask made of larch wood (*Larix* sp.) from the Northwest Yunnan region in China. Masks like these are used in performances and to tell stories. This mask was made for the Mani Rimdu festival and represents the pre-Buddhist Bon spirits that were tamed and converted by Buddhism.

Biocultural Collections

Plant-related artifacts are now being added to the Garden's online database Tropicos®. These biocultural collections consist of objects made from plants, tools used to process plants, or artwork related to plants. Many come from curators, trustees, members, and the general public, who travel the world and bring back interesting and important cultural objects made from plants. Biocultural collections are used for research in botany, anthropology, history, and art. "Understanding how people interact with plants is important for conservation," says Dr. Jan Salick, the collection's Senior Curator. "We learn how intrinsically linked we are to the natural world and are reminded of the central role plants have in our lives for food, medicine, tools, and much, much more." To learn more about how collections and their data play a role in plant discovery and conservation, see page 10.

photos by Claire Cohen, Tom Incrocci, and courtesy of MBG Library

What Does “Desiccation Tolerance” Mean?

All living things need water to survive, but some plants can survive after being completely dried out. You might know them as resurrection species. Bryophytes—small, non-vascular plants including mosses, liverworts, and hornworts—are among these plants. “When you see a moss dried out on a tree, it’s not doing anything. It’s essentially dead,” says Curator Dr. John Brinda. “But when you add water to it, the moss repairs any damage that was done, turns everything back on, and comes back to life.”

This process of desiccation tolerance is relatively common in bryophytes. Some have been activated after 20 years of being “dead.” Some bryophytes have been found frozen underneath glaciers and permafrost—and are thousands of years old. This ability to survive desiccation has allowed bryophytes to grow and thrive in niches that other plants find inhospitable, like bare rock faces.

What could this mean for the future of agriculture in a changing environment? Dr. Brinda and his colleagues are trying to understand the mechanism of this physiological trait and the genetic basis for it. This information may eventually be used to help improve crop plants and address the need for a greater and more stable food supply.



National Digital Stewardship Resident Explores Access to Digital Illustrations

The Garden is one of five institutions participating in a National Digital Stewardship Residency (NDSR) project with the Biodiversity Heritage Library (BHL). The BHL works with natural history and botanical libraries to digitize millions of pages of biodiversity literature. This project aims to analyze and ultimately improve the tools and processes BHL uses to share information.

Ariadne Rehbein is completing her residency at the Garden, receiving mentorship from both Doug Holland, Director of the Peter H. Raven Library, and Trish Rose-Sandler, Project Manager at the Center for Biodiversity Informatics. Some of Rehbein’s work involves interviewing researchers to better understand how they use digitized illustrations from BHL. “I am studying what natural history illustrations—the nexus of science and art—are about for our users, and how a collaborative digital library can support them,” says Rehbein.

The NDSR project is funded through a grant from the Institute of Museum and Library Services. Other participating institutions include the Natural History Museum of Los Angeles, the Chicago Botanic Garden, the Smithsonian Libraries, and the Ernst Mayr Library of the Museum of Comparative Zoology at Harvard University. Keep up with the cohort’s progress at ndsrbhl.wordpress.com.



Looking Very Closely

Dr. John Brinda
Curator | Bryology

Dr. John Brinda joined the Garden in 2012 as a postdoctoral fellow in the bryology program, digitizing label data for the North American moss collection. In addition to collecting mosses from around the world, he is now a curator continuing to advance the understanding of this plant group.

Dr. Brinda was working for the U.S. Forest Service in the Pacific Northwest when he got hooked on bryophytes. While earning his PhD from the University of Nevada–Las Vegas, he started working on desert bryophytes. “Bryologists usually want to go where there are lots of lush bryophytes, so the deserts have been kind of ignored,” he says. Dr. Brinda has continued collecting and classifying specimens throughout North America. He recently described a new moss species that a hiker found in California and discovered a rare species that was previously unknown in North America. “That’s just how it is,” he says. “They’ve all been there for millions of years, but nobody is looking at them. They’re really amazing plants.”

Though he did not set out to be a taxonomist, Dr. Brinda knows being a better taxonomist means being a better collector. “The two work together. The time you spend with a microscope teaches you what to look for when you’re out in the field,” he says.

To learn more about the Garden’s bryology program, see page 14.

what can you do?

Come Grow with Us!

The Missouri Botanical Garden, Sophia M. Sachs Butterfly House, and Shaw Nature Reserve are more than just beautiful destinations. They are living classrooms that connect people of all ages to the wonderful world of plants—from cooking, painting, and photography courses to green living, outdoor exploring, and gardening classes.

Registration for the fall/winter session is now open, and you will find something for everyone. Now is the perfect time to learn a new skill, discover a new passion, or reconnect with the natural world in a whole new way. Members save on registration for all classes!

To learn more, visit www.mobot.org/classes.



Attend Wild Ideas Worth Sharing

Sponsored by Trio Foundation of St. Louis, the *Wild Ideas Worth Sharing* speaker series offers opportunities to network, learn, and envision a more biodiverse St. Louis region and world. Speakers share stories and insights from real-world projects happening in the region and around the world, challenging us to rethink how we live, work, and play.

Landscape Performance Series

September 12 | 5:30–7:30 p.m.

The Soil Web of Life

November 2 | 6–8:30 p.m.

To learn more, and register, visit www.mobot.org/sustainability.



View the Pickard Porcelain Exhibit in Spink Gallery

Some of the world's finest china will be on display inside the Ridgway Visitor Center from September 16–November 12, 2017.

An exhibit in Spink Gallery will feature a selection of hand-painted, botanically themed Pickard China. The Antioch, Illinois, company is world-renowned for its beautiful dinnerware and counts several heads of state and even the Queen of England among its many distinguished customers.



BioBlitz at Shaw Nature Reserve

Set off on an educational adventure this fall with the St. Louis BioBlitz, hosted by the Academy

of Science–St. Louis. Teams of volunteers will trek through the diverse habitats of Shaw Nature Reserve, listing all the species they can find. Groups will be led by environmentalists, naturalists, and biologists. Participation in this citizen science project is open to everyone; no experience necessary! This BioBlitz will take place at Shaw Nature Reserve on September 22 and 23. To learn more and register, visit www.academyofsciencestl.org.

photos by Jean McCormack and Michelle Scherer



Join Us for the Seasonal Closing of the Children's Garden

Join us November 4–5 from 9 a.m. to 3 p.m. as we put the Doris I. Schnuck Children's Garden to bed. Enjoy two festive, fun-filled days of hands-on activities celebrating the changing of the seasons. See what's ready to harvest in the edible

garden, pot an edible plant to take home, enjoy live music, visit with World Bird Sanctuary experts, and meet our mascot Finn. Information at www.mobot.org/finn.



Garden and Saint Louis Art Museum Cross-Pollinate for Summer Exhibit

The Garden lent several objects to a new exhibit at the Saint Louis Art Museum called “Cross-Pollination: Flowers in 18th-Century European Porcelain and Textiles,” including two books from the Peter H. Raven Library and a plant specimen from the Garden's Herbarium. Garden President Dr. Peter Wyse Jackson also generously loaned *The Florist* by Augustin Heckle, a floral pattern book from the mid-18th century from his personal library. The Art Museum exhibit examines the rise of naturalism in the decorative arts in 18th-century Europe, focusing on potential sources of inspiration such as the Garden items. It is open through November 26 and admission is free.



Enjoy Member Appreciation Days

Our members and donors are the best around, and we want to thank you for all you do. The Garden is proud to introduce Member Appreciation Days this November 9–17. For these nine days, we're offering some extra benefits across the Garden, Shaw Nature Reserve, and the Sophia M. Sachs Butterfly House just for members. Check out the detailed article on page 16 or visit www.mobot.org/memberappreciation to learn more.

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All botanical research is dependent upon the correct and consistent application of scientific plant names. They form our vocabulary.

Amy Pool, Curatorial Assistant

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BOTANICAL DATA

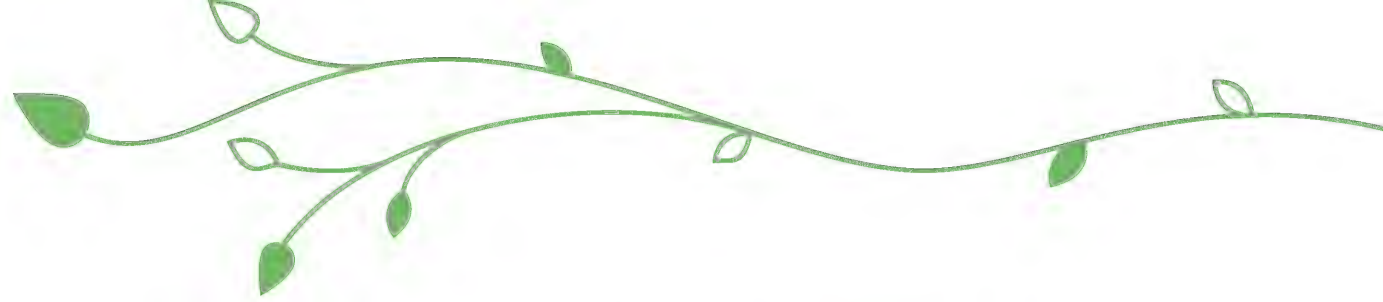
After looking at it closely, horticulturists Jared Chauncey and Dave Gunn have determined that the plant in front of them is, in fact, *Quercus arkansana*. They collect several different plant parts—branches, leaves, and acorns. A few of them will be pressed, dried, and mounted to create two herbarium vouchers—one for the National Arboretum and one for the Garden’s Herbarium. The rest will be brought to the Garden to be studied, propagated, added to the living collections database, and potentially cultivated on grounds. The items all come with valuable data attached to them, and all that data originated from one thing—a name.

What’s in a Name?

The Arkansas oak (*Quercus arkansana*) is one of the target species on a collecting expedition. The Garden team is in the southeastern United States with horticulturist Kyle Cheesborough of St. Louis’s Bellefontaine Cemetery and Patrick Thompson of Davis Arboretum–Auburn University on a collecting expedition funded by the Tree Gene Conservation Partnership. Their goal is to survey

and collect plant material of woody plants in need of conservation that cannot be safeguarded in seed banks and therefore must be housed in botanical gardens for display and research. Identifying the right species, however, is not easy. Despite the fact that it grows up to 45 feet tall, this Arkansas oak is often overlooked or mistaken for other common oak species. Today, it is in danger of extinction because of logging, land development, and climate change.

In their quest to find this species, the team relies on data. Without basic information such as the scientific name, other research—from conservation genetics to ecological restoration—can’t be done. The species can’t be propagated and cultivated if horticulturists don’t know what it is, where it grows naturally, and what environmental conditions it needs to thrive. “All botanical research is dependent upon the correct and consistent application of scientific plant names,” says Garden Curatorial Assistant Amy Pool. “They form our vocabulary; we can’t talk about what we do without them.”



Names, Baskets, and Everything in Between

With more than 150 years of history exploring and documenting the plant world, it is no surprise that the Garden is home to a great amount of information about plants. The Garden's living collections encompass more than 48,000 specimens. The Peter H. Raven Library is considered one of the most comprehensive libraries of botanical literature in the world, and includes a rare book collection with items such as the first edition, first printing of Charles Darwin's *On the Origin of Species*. The Herbarium houses nearly 7 million dried plant specimens, with over half a million bryophytes (see page 14). It is one of the largest herbaria in the world, and continues to grow each year. New plant vouchers are constantly added, such as the ones Chauncey and Gunn are bringing back from expeditions. The Garden is also home to hundreds of artifacts made of plants or used to study plants; this is the Garden's global biocultural collection (see page 6). The items represent the interchange between plants and people.

While these resources are available to local and visiting researchers, scientists know that free global access to information is crucial to the study and protection of Earth's species. Where can all this information live and be accessible? Tropicos®, a plant database.

A Plant Database for Everything and For All

Tropicos is a database that Senior Curators Dr. Marshall Crosby and Dr. Bob Magill started in the early 1970s. "Originally, we were trying to track names of mosses," says Dr. Magill. "There are 1.5 million or more plant names, and to keep track of them—what's related to what, what grows where, and the information about their morphology or ecology—it's a tremendous amount of data that needs a computer to manipulate it."



Garden horticulturists Jared Chauncey and David Gunn, along with Kyle Cheesborough (Horticulture Supervisor at Bellfontaine Cemetery), hiking through the forest in search of the Arkansas oak.

Approximately three times more plant names are in publication than the total number of known plant species. Before Tropicos existed, all that information was scattered on herbarium specimens or in publications in the library. Scientists had to physically pull each specimen or publication to determine what information was available. Developing Tropicos meant a computer was doing all that work and much more. The database quickly became a valuable resource where names could be attached to other kinds of data—herbarium specimens, economic botany artifacts, literature—providing value-added information. "It's a connection almost like a spiderweb, with names at the very center," says Dr. Magill. "That architecture really provided an avenue for everything else to grow."

Tropicos can be used in many ways. The database enables researchers to prepare, edit, and use floristic or taxonomic works such as *Catalogue of the Plants of Madagascar* or the *Central American Mosses*. It's also used to manage physical collections, like the biocultural collections. And it can be used to describe and understand the geographic distribution of species using herbarium records and geographic information systems (GIS). "These data represent the main source of primary, verifiable information on the distribution of organisms and, therefore, on spatial diversity patterns," says Dr. Iván Jiménez, Associate Scientist at the Garden's Center for Conservation and Sustainable Development. "In turn, understanding spatial diversity patterns is one of the major goals of ecology, evolutionary biology, and biogeography."

ACCESSIBLE TO EVERYONE

The Garden's wealth of information is accessible online to everyone—for free.

Tropicos	www.tropicos.org
Peter H. Raven Library	www.mobot.org/library
Rare Book Collection	www.botanicus.org
Biocultural Collections	www.mobot.org/biocultural
Living Collections	www.livingcollections.org/mobot/home.aspx



Today, Tropicos is the world's largest botanical database, and the site receives more than 175,000 requests daily for authoritative botanical information. It also provides information that increases the value of other global projects, like the World Flora Online (see sidebar). "It's important to collect the information that people are gathering about plants and for it to be preserved and made easily accessible," says Dr. Magill. "We need to continue to collect data so that as new things are developed, such as the World Flora Online, we'll have that information available to promote those new systems."



Horticulturists Dave Gunn and Jared Chauncey mapping GPS coordinates and entering data on this specific population of Arkansas oak into their logbook.

From the Field to Your Garden

Data may not seem like a plant's most obvious feature when you visit the Garden or pick one up at your local nursery. But all kinds of information are intrinsically attached to a plant from the moment it is discovered. Its physical and genetic characteristics set it apart from the other millions of species, warranting its own name. Its natural habitat and the specific environmental conditions under which it thrives inform horticulturists and home gardeners alike how to best cultivate it. And that's just some of the basics.

As a scientific institution, the Garden keeps track of every plant within its walls. These living collections are carefully acquired, tracked, and curated through a separate database, the Living Collections Management System (LCMS). This innovative tool, one of the most technologically advanced systems of its kind, is fully integrated with GIS software and allows the Garden's Plant Records team to store, analyze, and share data about every plant that enters the Garden with other departments, other institutions, and Garden visitors. The database records whether a plant was purchased, donated, or collected in the wild. If it was wild-collected, the database notes the latitude, longitude, altitude, its location in the Garden, and so on.



Provenance (or origin) data tells a story and helps scientists and horticulturists draw conclusions about plant distribution, population biology, taxonomy, propagation, and cultivation. The LCMS also populates the Garden's home gardening tool, PlantFinder, one of the top online resources for gardeners locally and around the country. You can search PlantFinder by common or scientific names and get details such as native range; hardiness zone; how high and wide a plant grows; bloom time; sun, water, and soil requirements; noteworthy characteristics; common pests or problems; and more.

The LCMS is also tied to Tropicos, and this can play an important role in conservation efforts. "The first step in plant conservation is to understand the high level of data associated with species," says Andrew Wyatt, Senior Vice President of Horticulture and Living Collections. Anyone interested in the scientific background of a plant they see in the Garden can go even deeper than what the LCMS offers to explore the history of that species. All you need is a name to unlock the troves of data behind it.



Arkansas oak (*Quercus arkansana*).

Just the Beginning

With horticulturists Chauncey and Gunn back from their expedition, the journey of the Arkansas oak has just started. The data they have recorded—exact coordinates, the populations from which it was collected, the number of individuals that were sampled, and more—will be added to the different Garden databases and shared with the world. That data could be useful to a gardener wanting to plant oaks at home or a fifth grader writing a paper on interesting trees. That data will also help horticulturists and researchers understand this species and, ideally, protect *Quercus arkansana* from extinction.



Plants may hold answers to some of the world's health, social, environmental, and economic problems. That is why a full and comprehensive inventory is vital before many of these species, and the possibilities they offer, become extinct. In 2002, the United Nations (UN) Convention on Biological Diversity adopted a Global Strategy for Plant Conservation (GSPC). This was subsequently updated in 2010 with the aim of halting the loss of plant species worldwide by 2020. The updated GSPC includes 16 targets to be achieved by the year 2020; Target One of the GSPC states the need for "an online flora of all known plants" to provide baseline knowledge to support conservation and sustainable management of the world's plant resources.

Responding to this 2020 target at a meeting held at the Garden in early 2012, four of the world's leading plant science institutions agreed to collaborate to support the development of the World Flora Online: the Garden, The New York Botanical Garden, the Royal Botanic Garden Edinburgh, and the Royal Botanic Gardens, Kew. Since then, a large number of other botanical institutions worldwide have joined to deliver this vital new initiative.

With the Garden at the forefront of these efforts, a new public portal for the World Flora Online was officially launched this summer at the XIX International Botanical Congress (IBC) in Shenzhen, China. Including over one million plant names and tens of thousands of descriptions of plant species worldwide, it marked an important milestone in creating a consolidated global information service on the world's flora, and one that will "be instrumental in aiding plant conservation efforts at the Garden and around the world for years to come," explains Garden President Dr. Peter Wyse Jackson, who co-chairs the project. Development of the WFO has been generously funded by Monsanto. To learn more, visit www.worldfloraonline.org.

BRYOLOGY

It's a significant part of the Garden's herbarium collection and a very important resource for the study of mosses throughout the world.

Dr. Bob Magill, bryologist



Grimmia poecilostoma



Gemmabryum dichotomum



Tortula inermis

It is sometimes referred to as the forest's "green carpet" covering the ground, rocks, and tree trunks. While most of us see only the tall trees, colorful flowers, and abundant leaves, an entire science is dedicated to the study of the unique, fuzzy organisms that create it. If you look at them closely under a microscope, you will see the detail and diversity that make bryophytes fascinating organisms.

Bryophytes are one of the major groups of land plants. They are small, nonvascular plants that reproduce through spores and are divided into mosses, liverworts, and hornworts. They are also the second largest group of plants in terms of diversity. If you catalog the plants in any landscape, chances are that about 10% of them will be bryophytes.

Bryology has a long and strong history at the Garden, dating back to when bryologist Dr. Marshall Crosby joined the Garden in 1968. Today, with one of the highest concentrations of bryology experts in the world, the Garden is considered a top research center for mosses. The Garden is also home to an extensive bryophyte library collection and one of the largest bryophyte herbarium collections in North America. About half of the 570,000 specimens in our collection are from North America, many of them from Missouri. "It's a significant part of the Garden's herbarium collection and a very important resource for the study of mosses throughout the world," says bryologist Dr. Bob Magill.

Discovery and Conservation

The world has about 13,000 species of mosses occurring on every continent—including Antarctica. Moss diversity is quite varied, but the plant group remains largely understudied. "There aren't that many of us bryologists, and we just don't have the data to answer questions like where things are or how abundant they are," says bryologist Dr. John Brinda. "If you are planning to go out anywhere and want to know 'Which bryophyte species will be here?' the answer that we can give you is incomplete."

Take, for example, the state of California. Dr. Brinda and his colleagues David Toren and James Shevock of the California Academy of Sciences recently described a new moss species *Campylostelium laegerae*. It's named in honor of Eve Laeger, an avid hiker in California who's part of a group of citizen scientists that Shevock has trained to identify and collect mosses in the field. "There are millions of people living in California, and we don't know the flora there yet," Dr. Brinda says of the significance of the discovery. Last year he also documented *Campylostelium pitardii*, a rare species that occurs throughout the Mediterranean region and, until his discovery, was unknown to exist in North America.



The new display garden, the Stumpery, features several tree stumps, ferns, mosses, and shade-loving plants.

Conservation efforts for mosses are increasing, but that hasn't been always the case. Mosses were thought to be less of a conservation concern because they reproduce through spores that can be easily dispersed by wind. The theory was that if they found just the right place in just the right ecosystem and just the right side of a tree trunk, they would grow.

But this growth is not as easy as it was once thought. Mosses require certain microclimate conditions to grow properly. They are excellent at absorbing liquids, helping conserve water and regulate ecosystem functions such as flash flood prevention and decomposition. They often serve as seed beds for other plants and nesting grounds for insects. However, this means that anything else that they come in contact with, like fertilizers and pesticides, goes straight to the cells. "Even the chlorine in city water really affects and degrades their ability to grow," says Dr. Magill. "We still need a lot of information on the conservation needs of bryophytes because we're still in the process of trying to find out where they are and how many there are."

Look Closely

While mosses already grow naturally in many areas around the Garden, visitors can now appreciate them in a dedicated space—the Stumpery. The new display garden, located near the Shoenberg Fountain and Strassenfest German Garden, has been taking shape since last year. It features tree stumps and a variety of ferns, mosses, and shade-loving plants growing in nooks and crannies. Most of the stumps are eastern red cedar from Shaw Nature Reserve, and many of them came with mosses already growing on them. Horticulturist Nathan Urben is working closely with bryologist Bruce Allen to identify these mosses and properly label them. They are also working on a "wish list" of mosses that are unique to Missouri to help build the collection. "We as horticulturists, just like bryologists, still don't know much about mosses, so the stumpery is a learning environment," Urben says. "My hope is that as the public sees the great diversity of mosses here, they'll want to learn about them and start noticing them more."

Learn More!

To read more about horticulture's role in conservation, please visit www.discoverandshare.org.

November 9–17, 2017

M•E•M•B•E•R APPRECIATION DAYS

This November, we are saying “thank you” to...

YOU

—our family of members—
for your generous support!



Members are at the heart of all we do, and we simply could not do our important work without you.

For **nine special days**, we are supersizing some of your favorite member benefits—like exclusive events, shopping perks, and discounts on education classes—to show our appreciation for your extraordinary support.

Visit www.mobot.org/memberappreciation for a full schedule of events and to register for ticketed programs.

Membership Sale

Save 20% on Membership, November 9–17

Enjoy this limited-time savings on Missouri Botanical Garden membership. Join, renew, or give a gift at the Individual through Contributor membership levels. Visit the Garden, Butterfly House, or Shaw Nature Reserve; go online at www.mobot.org/membership; or call (314) 577-5118.

Note: This will be the final membership sale of the year. There is not an additional sale in December.

Exclusive Members-Only Events

Member Speaker Series: Holiday Decorating

Thursday, November 9 | 11 a.m.–noon | Shoenberg Theater | Supported by Dorothy Stephens

Get into the holiday spirit with Keith McDonnell and Dean Riebeling, owners of Botanicals Design Studio, during this annual event. See the latest floral and decorating trends to deck your halls for the holidays! Free for members | Registration required

Fairy Garden Walk and Talks

offered daily | November 9–17 (except November 13) | 11:30 a.m.–12:30 p.m. | Butterfly House
Drop by the Butterfly House for an informal, members-only guided tour in the conservatory to experience the Winter Jewels Holiday Celebration, with jewel-toned butterflies, fairies, and more!
Free for members

Garden Glow Member Preview Night

Friday, November 17 | 5–10 p.m.
Presented by Wells Fargo Advisors
Be among the first to see the twinkling lights of this year's Garden Glow during this exclusive member night. Gardenland Express, the annual holiday flower and train show, will also be open.
Advance timed tickets required.

Dining and Shopping Perks

Trunk Show at the Garden Gate Shop

Friday–Sunday, November 10–12 | 10 a.m.–5 p.m.
The Garden Gate Shop's trunk show features Lisa Lohman's wide variety of earrings, necklaces, and bracelets. Member discounts apply.

Little Shop Around the Corner Holiday Open House

Thursday, November 16 | 2–6 p.m.
If high-quality antiques and collectibles are on your holiday shopping list, don't miss this exclusive open house for members only. Show your membership card and receive 40% off all purchases as you browse the Little Shop's one-of-a-kind offerings. Light refreshments provided.

Shaw Nature Reserve Merchandise Sale

Show off your love of the Nature Reserve and save at the same time! Present your membership card at the Nature Reserve Visitor Center November 9–17 and receive 40% off all Nature Reserve logo merchandise.



photos by Lisa DeLorenzo Hager, Kevin Kersting, Jean McCormack, and Robin Powell



Tantalizing Terrariums.

Featured Education Classes

Throughout the year, the Garden offers a full range of classes. Celebrate the seasons with us and learn something new! Members always enjoy valuable savings on class registration fees. Visit www.mobot.org/classes to register.

Flytraps and Pitfalls

Thursday, November 9 | 10–11:30 a.m.
or Sunday, November 12 | 1–2:30 p.m.
Beware: Carnivorous plants have invaded the Garden! Discover the amazing world of plants with your preschooler. Find out what these plants like to eat and how they capture their prey. You'll even get to take one home. Price includes one child and one adult.
\$16 (members save \$3) | Registration required

Behind the Scenes: Holiday Show Production

Saturday, November 11 | 10 a.m.–noon | Ridgway Visitor Center
Enjoy this special opportunity to view the floral production of the Garden's annual holiday and train show. Take a tour of our greenhouse facilities, learn about select plant production during the fall and winter months, and get a few tips from the pros.
\$28 (members save \$6) | Registration required

Tantalizing Terrariums

Tuesday, November 14 | 6–7:30 p.m.
Botanical Room
Join us and learn how to create a little indoor garden to liven up your home. Learn step-by-step how to create a terrarium, and make your own to take home. Soil, plants, and container included.
\$48 (members save \$10) | Registration required

just for members



Magical Miniature Gardens

Sunday, September 10 | 11 a.m.–1 p.m. | Sophia M. Sachs Butterfly House
Children and their families work together to create a miniature fairy garden at the Butterfly House. Enjoy stories, light refreshments, and a trip through the tropical conservatory. Reservations required.

Member Speaker Series: Celebrating 40 years of the Japanese Garden

Tuesday, September 19 | 11 a.m.–noon | Shoenberg Theater
Join Andrew Colligan, Garden archivist and historian, as we celebrate four decades of the “garden of pure, clear harmony and peace.” Registration required; space is limited.

Best of Missouri Market Members-Only Shopping Hour

Saturday, October 7 | 8 a.m.
Members shop from 8 to 9 a.m. before the crowds. Join or renew your Garden membership at the Market and get in free!

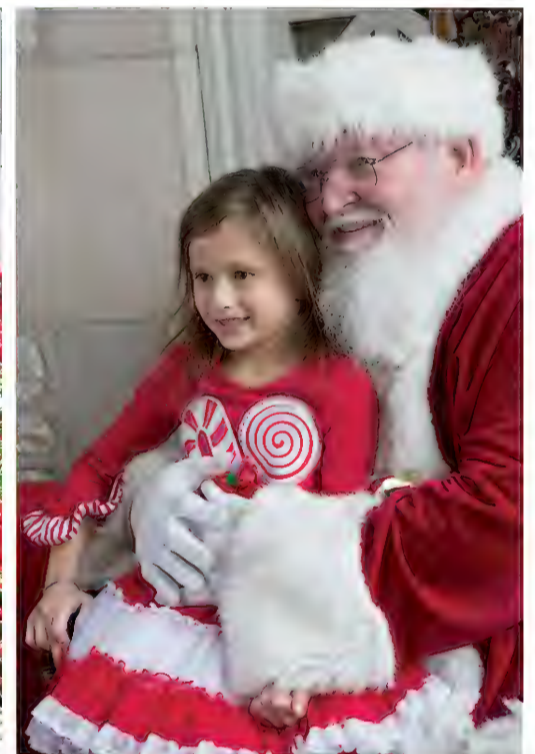
Member Speaker Series: Autumn Gardening

Tuesday, October 17 | 11 a.m.–noon | Shoenberg Theater
Let autumn gardening “fall into place” with speaker June Hutson, a horticulturist, garden designer, and retired supervisor for the Kemper Center for Home Gardening. Registration required; space is limited.



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Information and registration at (314) 577-5118 or www.mobot.org/memberevents unless otherwise noted.



photos by Lisa DeLorenzo Hager, Ning He, Tom Incrocci, and Mary Lou Olson

Ghouls in the Garden

Sunday, October 29 |
11 a.m.–2 p.m.

Bring your costumed kids for themed trick-or-treating through the Garden. Includes admission to the Children's Garden. Registration required; membership level determines number of event entries.

Member Speaker Series: Holiday Decorating

Thursday, November 9 |
11 a.m.–noon |

Shoenberg Theater |
Supported by Dorothy Stephens

Botanicals Design Studio offers tips and demonstrations to help you decorate your home for the holidays. Registration required; space is limited.

Garden Glow Member Preview

Friday, November 17 |
5–10 p.m. | Presented by Wells Fargo Advisors

This special members-only preview evening includes both Garden Glow and Gardenland Express. Come see what's new with both holiday venues. Timed tickets. \$12 member adults; \$6 member children. Registration required.

Breakfast with Santa

Saturday, December 2 |
8 a.m. | Ridgway Visitor Center

Visit with Santa as he makes his yearly stop at the Garden for our members-only breakfast. Enjoy making crafts and opportunities to take photos with Rudolph, Frosty, and Mrs. Claus. \$20 member adults; \$15 member children. Registration required.

special events

Japanese Festival

September 2–4

Experience thunderous rhythms of the taiko drums, the thrilling *shishi-mai* dance, and more at this three-day cultural event. Join or renew your membership at the festival and get in free. Sponsorship by BioKyowa, Inc., Boeing Company, Nidec Motor International, Inc., Novus International, Inc., and TOYOTA Bodine. More at www.mobot.org/japanesefestival.



Shaw Wildflower Market

September 8 | 4–7:30 p.m.

Shaw Nature Reserve

Shop for locally produced native plants, food, and crafts. \$5 adults; \$3 seniors; free for members. More at www.shawnature.org/wildflowermarket.

Spirits in the Garden

October 27 | 6–9 p.m.

Celebrate All Hallows' Eve with the spirit of Henry Shaw as you enjoy botanical spirits from local distilleries and wineries, a costume contest, a murder mystery, circus performers, and ghost stories. \$20 members; \$30 nonmembers. Cash bar and food for purchase available. Attendees must be at least 21. More at www.mobot.org/spirits.




October 6–8

Join us for a weekend of fall fun! More than 120 food producers and crafters offer baked goods, flowers, herbs, handcrafted items, baskets, wooden toys, custom jewelry, and more. Enjoy live music and a kids' corner with crafts and fall activities. Join or renew your membership at the Market and get in free.

www.mobot.org/market

Booterfly House

October 1–31 | 10 a.m.–3 p.m. | closed Mondays

Butterfly House

Celebrate all things creepy and crawly this October. Meet new frightful friends in the Scorpion's Lair, watch out for Botanicals Gone Mad in the conservatory, and spy on spectacular spiders with Little Miss Muffet. All events included with admission. More at www.butterflyhouse.org.



Fest-of-Ale

October 13 | 6–9 p.m.

Join the Young Friends of the Garden for the 10th annual Fest-of-Ale. Enjoy offerings from the region's microbreweries, food for purchase, and live music. Attendees must be at least 21.

\$30 members; \$40 nonmembers.

Registration required:

(314) 577-5118 or www.mobot.org/festofale.

Holiday Wreath Display and Auction

November 17–January 1

Monsanto Hall

View unique creations donated by some of the area's finest floral designers. Wreaths are sold by silent-auction bidding with proceeds benefiting the Garden's Horticulture Department.



Garden Glow

November 18–January 1

Member Preview | November 17

Presented by Wells Fargo Advisors.

Garden Glow's fifth anniversary will provide new experiences and traditional favorites. More at www.mobot.org/glow. Member tickets available online* and on-site September 18. General public tickets available September 25.

*service fee applies

From gardening tools and unique toys to vintage items and local products, the Garden shops have just what you're looking for.

Look for these icons to know where each event or sale is taking place.



Garden Gate Shop

4344 Shaw Blvd.
St. Louis, MO 63110
Monday–Sunday
9 a.m. to 5:30 p.m.
(314) 577-5137



Butterfly House Gift Shop

15193 Olive Blvd.
Chesterfield, MO 63017
Tuesday–Sunday
10 a.m. to 4 p.m.
(636) 530-0076 ext. 15



Little Shop Around the Corner

4474 Castleman Ave.
St. Louis, MO 63110
Tuesday–Saturday
10 a.m. to 4 p.m.
Sunday, noon to 4 p.m.
(314) 577-0891

Plan Your Holiday Events at the Garden



It's never too early to start making plans for the holidays. Plan your corporate holiday party this year at the Garden! Your guests can enjoy Garden Glow, make s'mores on the patio at the William T. Kemper Center for Home Gardening, and enjoy member pricing during their event. For more information and to book your event, call Katie at (314) 961-7588, ext. 290.

First Fridays

First Friday of the month | 🌿

Discover something new—from book signings to food samplings to trunk shows. More at www.mobot.org/shop.

Staff and Volunteer Sale

September 6–8 | 🌿 🦋 🪑

As a thank you for making the Garden a world-class institution, all Garden staff and volunteers receive an extra 10% off their purchases.

Bug Hunt Sale

September 16 and 17 | 🦋

Receive 20% off all bug exploration toys and supplies, such as nets, containers, and more.

Fall Bulb Sale

September 19 | 🌿

Now is the time to stock up and plant next spring's beautiful bulbs. Bulbs available until supplies last.

Around the World Wine Dinners

Third Thursday of the month | Through October | 6:30 p.m. | Spink Pavilion

Travel to wine-producing regions through a five-course dinner paired with a different wine from the same region. \$70 (plus 18% service charge and tax). Advance reservations required: (314) 577-0200.

Member Double Days

October 1 and 2 | 🌿 🦋 🪑

All Garden members receive 20% off purchases or double card punches.

Wicked Wings and Wine

October 18 and 25 | 🦋

Get 20% off your purchase in the gift shop during the Wicked Wings and Wine event.



Café Flora

Through October 29 | 10 a.m.–2 p.m. | Open Saturdays and Sundays

Enjoy a delicious brunch at the iconic Spink Pavilion with a beautiful view. Visit www.mobot.org/brunch or call 314-577-0238.

Trunk Show

November 10–12 | 10 a.m.–5 p.m. | 🌿

Visit the Garden Gate Shop's trunk show featuring Lisa Lohman's wide variety of earrings, necklaces, and bracelets. Member discounts apply.

» staff pick



Glass Art Pumpkins

More glass! Check out the newest fall products of hand-blown glass art pumpkins by Jack Pine Studios. The collection is offered in assorted colors, in three sizes, and made from glass, precious metals, and enamels. Prices range from \$59.99 to \$299.99. Available at the Garden Gate Shop.

commemorative gifts

April–June 2017.

A commemorative gift is a wonderful way to honor family and friends. Gifts of \$50 or more are listed in the *Bulletin*. For more information about giving opportunities at the Missouri Botanical Garden, please call (314) 577-5118 or make a commemorative gift at www.mobot.org/tributes.

In Honor of

Mrs. Sandra Aebel

Ms. Susan Boedy

Dr. David I. Berland MD

Mr. and Mrs. Donald F. Barr

Ms. Jenni Boyd

Mrs. Linda C. Boyd-Shell

Paul and Jackie Carey

Ms. Judith Bender

Frank R. Chamblin

Ms. Mary E. Chamblin

Susan Cobbledick

Martin J. O'Brien

Mary Gail Dalton

Ellen and Henry Dubinsky

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Barbara P. Lawton (left)
with daughter Cindy Gilberg.

In Memoriam: Barbara P. Lawton

Barbara P. Lawton, a former Garden employee and longtime member of the St. Louis Master Gardener's Program, passed

away this June. As the Garden's Manager of Publications, Barb edited the *Bulletin* from 1967 to 1972. An award-winning writer, author, speaker, and photographer, she wrote extensively on gardening and horticulture for a wide range of publications, including regular contributions to *Gateway Gardener* and *Outdoor Guide*. She and her late daughter, Cindy Gilberg (right), co-authored *Shaw Nature Reserve: 85 Years of Natural Wonders* (2010).

The Garden is honored to count Barb among our friends. Her family has requested donations be made to the Garden in her honor.

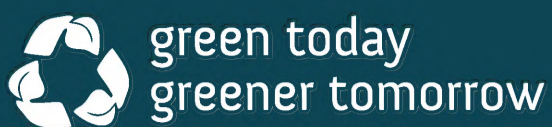


In Memoriam: Priscilla Robb McDonnell

Tireless supporter of the arts Priscilla "Pris" Robb McDonnell passed away this July.

Pris was well-known for her friendliness and generous spirit. She was one of the founding members of Opera Theater St. Louis, served in leadership positions for nearly a dozen arts organizations, and received several prestigious awards for her work. The Garden is among the many St. Louis arts and culture organizations which benefitted from her generosity. Pris and her late husband Sandy were Garden members and supporters for more than 50 years. Their gifts supported projects and programs across the breadth of the Garden's work, from special events to creation of the *Flora of North America*.

We honor Pris for her lifelong support of the arts and the St. Louis community.



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MISSOURI BOTANICAL GARDEN

calendar

www.mobot.org/events

september | october | november



Best of Missouri Market
October 6–8
www.mobot.org/market

Ghouls in the Garden

October 29 | 11 a.m.–2 p.m.

Free for members | Registration required

Bring your pirates, your witches, ghosts, and wolves—they can meet ours! Children dressed in costumes enjoy treats from themed stations around the Garden to fill their souvenir Ghouls treat bag! Free admission to the Doris I. Schnuck Children's Garden included.

www.mobot.org/memberevents

FEST-OF-ALE



October 13 | 6–9 p.m.

\$30 members | \$40 nonmembers
\$15 designated driver* | Registration required

*designated drivers do not receive a tasting glass

Join the Young Friends of the Missouri Botanical Garden for the tenth annual Fest-of-Ale! This event celebrates local beer as the region's microbreweries bring their best offerings to the Garden for sampling. Ticket price includes a commemorative tasting glass, beer sampling, and live music. Food for purchase. All attendees must be at least 21.



All proceeds benefit the Doris I. Schnuck Children's Garden.

www.mobot.org/festofale



Shaw Wildflower Market

(at Shaw Nature Reserve)

September 8 | 4–7:30 p.m.

Free for members | \$5 nonmembers

www.shawnature.org

BUG BALL

(at the Butterfly House)

October 27 and 28 | 5:30–7:30 p.m.

\$12 members | \$14 nonmembers

Step into the wonder and beauty of butterflies, insects, spiders, and their other many-legged friends! Your little bugaboos can play games, create spook-tacular crafts, and take home lots of loot after they visit our hand-painted Treat Houses.

www.butterflyhouse.org

september 2017

average temperature: low 60° | high 80°
average precipitation: 2.96 in.

What's in bloom?



Bluebeard



Lily turf



Evergreen azalea

9/2–9/4 **Japanese Festival**
September 2: 10 a.m.–8 p.m. | \$
September 3: 10 a.m.–8 p.m. | \$
September 4 (Labor Day): 10 a.m.–5 p.m. | \$

9/6–9/8 **Staff and Volunteer Sale** at the shops | GGS, BHGS, LS

9/8 **Shaw Wildflower Market** | 4–7:30 p.m. | \$ SNR

9/10 **Magical Miniature Gardens**
11 a.m.–1 p.m. | 🏠 BH

9/16–9/17 **Bug Hunt** | 10 a.m.–3 p.m. | BH

9/19 **Member Speaker Series: Celebrating 40 years of the Japanese Garden**
11 a.m.–noon | 🏠 🏠 ST

9/19 **Fall Bulb Sale** | while supplies last | GGS



october 2017

average temperature: low 48° | high 68°
average precipitation: 2.76 in.

What's in bloom?



Chrysanthemum



Spider mum



Primrose

10/1–10/31 **Butterfly House** | 10 a.m.–3 p.m. (closed on Mondays) | BH

10/6–10/8 **Best of Missouri Market**
October 6: 6–9 p.m. | \$
October 7: 🏠 Members-Only Shopping Hour | 8–9 a.m.
October 7: 9 a.m.–5 p.m. | \$
October 8: 9 a.m.–5 p.m. | \$

10/13 **Fest-of-Ale** | 6–9 p.m. | \$

10/17 **Member Speaker Series: Autumn Gardening**
11 a.m.–noon | 🏠 🏠

10/18 **Wicked Wings and Wine** | 5:30–7:30 p.m. | 🏠 \$ BH

10/25 **Wicked Wings and Wine** | 5:30–7:30 p.m. | 🏠 \$ BH

10/27–10/28 **Bug Ball** | 5:30–7:30 p.m. | 🏠 \$ BH

10/27 **Spirits in the Garden** | 6–9 p.m. | \$

10/29 **Member Event: Ghouls in the Garden**
11 a.m.–2 p.m. | 🏠 🏠



november 2017

average temperature: low 37° | high 54°
average precipitation: 3.71 in.

What's in bloom?



Cranesbill



Self heal



Sky blue aster

11/1–12/31 **Winter Jewels** | 10 a.m.–3 p.m. (closed on Mondays, Christmas Eve, and Christmas Day) | BH

11/4–11/5 **Doris I. Schnuck Children's Garden Seasonal Closing** | 9 a.m.–3 p.m. | \$ CHD

11/9 **Member Speaker Series: Holiday Decorating**
11 a.m.–noon | 🏠 🏠 ST
Supported by Dorothy Stephens

11/9–11/17 **Member Appreciation Days**

11/10–11/12 **Trunk Show** | 10 a.m.–5 p.m. | GGS

11/15–12/31 **Victorian Christmas at Tower Grove House**
Wednesdays–Sundays | 10 a.m.–4 p.m.

11/17–1/1 **Holiday Wreath Display and Auction**
9 a.m.–4 p.m. | RVC

11/17 **Garden Glow Member Preview** | 5–10 p.m.
🏠 \$ 🏠
Presented by Wells Fargo Advisors

11/18–1/1 **Garden Glow** | 5–10 p.m. | Closed Christmas Eve and Christmas Day | \$
Presented by Wells Fargo Advisors

11/18–1/1 **Gardenland Express** | 9 a.m.–4 p.m. | \$ RVC
Presented by Wells Fargo Advisors



your garden



When and how do I aerate my cool-season grasses?

Fall is a great time to enjoy a breath of fresh air. It is also a great time to provide the same for your cool-season turfgrasses, and you can provide that breath of fresh air by core aerating your lawn.

Core-aerating is a lawn maintenance practice that is best done on grasses when they are beginning their most active period of growth. Cool-season grasses are best done in the early fall.

A core-aerating machine removes small cores of soil and deposits them on your lawn. You can rent one that is either self-propelled or pulled behind a lawn tractor. Whether you do it yourself or have it done by a turf professional, the benefits include:

- Reduces soil compaction.
- Helps control lawn thatch.
- Aids in the infiltration of air, water, and nutrients into the soil.
- Encourages deeper rooting of grass plants.
- Helps prevent fertilizer and pesticide runoff.
- Provides an ideal site for improved varieties of grass when overseeding.
- Provides a moist, shaded location ideal for grass seed germination.

The core-aerating machine may also be used to prepare the soil for seeding when doing a complete lawn renovation. If using the machine for this purpose, several passes in different directions are needed in order to provide good seed-to-soil contact.

More advice and tips at www.mobot.org/gardeninghelp.



Plant Societies' Shows and Sales

Get the latest information about your favorite plant society's show and sale by visiting www.mobot.org/plantsocieties.

Key (All events take place at the Garden unless otherwise noted.)

BH	Butterfly House	KC	Kemper Center for Home Gardening	🌿	Sassafras
BHGS	Butterfly House Gift Shop	LS	Little Shop Around the Corner	🏠	Members-only event
CA	Cohen Amphitheater	MC	Monsanto Research Center	🏠 🏠	Double punches for Garden Gate Shop Rewards Card
CBEC	Commerce Bank Center for Science Education	MH	Monsanto Hall (in RVC)	🏠	Reservations required
CHD	Children's Garden	RVC	Ridgway Visitor Center	\$	Fee required
CL	Climatron lawn	SNR	Shaw Nature Reserve		
GGS	Garden Gate Shop	SP	Spink Pavilion		
JE	Jordan Education Wing (in RVC)	ST	Shoenberg Theater (in RVC)		

photos by (front) Lisa DeLorenzo Hager, JJ Mueller, Kat Niehaus, and Tom Incrocci (this page) Karen Fletcher, Tom Incrocci, and Sundos Scheider.