# 2021 ANNUAL REPORT

MISSOURI BOTANICAL GARDEN

17

On the cover: *Origami in the Garden* sculpture "Master Peace" is a stunning addition to the summer beauty of the Central Axis. photo by Cassidy Moody

Page 1: *Rosa* 'Harpageant" EASY DOES IT in the Gladney Rose Garden photo by Sundos Schneider

Back cover: *Seiwa-en*, the Japanese Garden, after a spring rain photo by Tom Incrocci

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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

# FROM THE PRESIDENT



The Missouri Botanical Garden experienced a year of anticipation in 2021. Each year, of course, we anticipate the coming seasons and look forward to events and activities that showcase our living collections and bring our community together.

In 2021, that anticipation turned toward our *Gateway to the Garden* campaign, and the incredible progress made toward the grand opening of the new Jack C. Taylor Visitor Center. Tremendous progress was made on this transformational project during the continued struggles of a global pandemic.

We are honored that you—our steadfast supporters and champions—are undertaking this journey with us. We deeply appreciate your kindness and patience as the Garden has adapted to the challenges of a two-year pandemic, which we continue to navigate each day.

Like you, the Garden is resilient. We are creative and responsive. We persevered, and even innovated, because you showed up again and again to support our shared goal: to make sure the Missouri Botanical Garden continues to thrive, now and for the future.

In 2021, we did so with a record number of wild-sourced plants in our living collections. We did so by describing more than 150 species of plants new to science. We did so by providing education programs to more than 196,000 in-person and virtual attendees. We did so by answering 10,000 horticulture and home gardening questions for our community.

And we did all of it with your support.

Through the year, Shaw Nature Reserve continued to experience record visitor attendance while collecting a record amount of native plant seed for ongoing restoration projects. The Sophia M. Sachs Butterfly House held dozens of events and programs while welcoming the community into their expansive new Entomology Lab.

We also brought our community the successful *Origami in the Garden* exhibition, which inspired many to return to the Garden to safely explore and relax in nature. With the safety of our staff and visitors top of mind, we welcomed the return of the Garden's beloved festivals and the now-iconic winter light display of Garden Glow, with limited tickets available and careful spacing in the vendor and performance areas.

Each visitor could watch the construction of the Taylor Visitor Center and the surrounding visitor complex as it literally rose before their eyes. Over the course of the year, the scope of this incredible project truly took shape.

I so appreciate the enthusiasm and generosity the Garden's friends have shown for this undertaking. It is yet another way you show your dedication to our Garden and our critical mission to protect plants and enrich life. I am grateful to celebrate our successes with you, and I look forward to many festive occasions together in the year to come!

Teter Wyse pubba

Dr. Peter Wyse Jackson President

# FROM THE CHAIR



W riting my final letter as Chair of the Board of Trustees is more challenging than I would have anticipated. I certainly never foresaw that I would be at the helm during a global pandemic, which has changed the way we all live and work. As I look back over the past five years, I am struck by the Garden's resilience. I have been amazed and appreciative of the Garden's proactive vision during these unprecedented times.

This organization is extraordinary. In the face of significant challenges, the Garden continued to engage with and care for the community. We received nearly six million online visitors in 2021—a record. We described more than 150 new plant species. And we witnessed the highest attendance ever at Garden Glow.

It is your support that keeps the Garden as a central and vital part of our community.

You provide the foundation for so many different initiatives. As this report makes clear, the Garden is on solid financial footing because of your continued investment and commitment.

The *Gateway to the Garden* campaign is enabling us to construct a new welcome to the Garden, the transformational Jack C. Taylor Visitor Center. This center will greatly enhance our visitor experience and will be a cornerstone in the evolving resurgence of our community.

As chair, I have had a unique window into all the Garden does for the people of our community—and across the globe. We educate, research, cultivate, build, plant, grow, and even entertain. We welcome visitors from our local neighborhoods, every state, and countless countries. We do so at our historic campus in St. Louis City, at the Sophia M. Sachs Butterfly House and Litzinger Road Ecology Center in St. Louis County, and at Shaw Nature Reserve in Gray Summit.

The Garden leads critical work around the globe. We are in a race against time to discover and conserve plants before they are lost to extinction. Entire ecosystems are threatened by changes to our climate, global conflicts, and other barriers. Together, we are making a difference.

Thank you for trusting me with the Garden's work and legacy.

David M. Hollo Chair of the Board of Trustees

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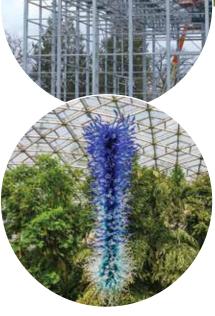
# TRANSFORMATION

# GATEWAY to the GARDEN

G ateway to the Garden, the largest capital project in the history of the Missouri Botanical Garden, made incredible progress in 2021. The campaign will allow the Garden to amplify our leadership as stewards of the planet and continue to provide inspiration and education to each visitor. The Jack C. Taylor Visitor Center is the centerpiece of the *Gateway to the Garden* campaign.

Phase Two of the Taylor Visitor Center construction began in January 2021 with the sustainable demolition of Ridgway Visitor Center. The process included careful planning, industrial recycling, and reuse of materials and fixtures. As a result, the landfill waste from the project was less than half of the amount reclaimed or recycled.

The iconic *Blue Chandelier, 2006* by Dale Chihuly was carefully removed before demolition. After cleaning and inspection, it was installed in the Climatron<sup>®</sup> on a custom suspension frame in the summer, to the delight of visitors.



(top) Emerson Conservatory (bottom) *Blue Chandelier, 2006* 

"As a former CEO of Enterprise Holdings and a champion for St. Louis, I understand that this investment in the Garden will reap dividends for decades to come," says Pam Nicholson, longtime Garden member and campaign supporter. "Transformational projects like the Jack C. Taylor Visitor Center are the building blocks for the resurgence of our community. Neighbors, tourists, scientists—all our visitors—will understand the significant role the Garden plays locally, nationally, and internationally. Cal and I are happy to participate in this incredible project."

> Sustainability continued through the second phase of the Taylor Visitor Center project. Much of the concrete cement, rock, and sand used in the project is sourced from local quarries, reducing transportation emissions. The limestone and granite cladding on the building's exterior walls is sourced from a quarry in Ste. Genevieve, Missouri.

Construction progress, winter 2021

Two cisterns were installed to capture and store up to 50,000 gallons of rainwater to irrigate the surrounding gardens. Low-flow water systems and state-of-theart mechanical systems will reduce energy needs and expenses. The completed Taylor Visitor Center complex will achieve LEED (Leadership in Energy and Environmental Design) Gold certification.

Special care was taken with the landscape impacted by construction. Sculptures within the area were removed for cleaning and storage. Many of the Garden's famous azaleas and rhododendrons are temporarily housed offsite during construction. Some plants were moved to new homes within the Garden grounds. A towering Shumard oak (*Quercus shumardii*) located close to the site of the new Emerson Conservatory was nearing the end of its life. It was harvested and sent to a local artist to become a statement seating area and custom family-style table in Sassafras, the restaurant of the Taylor Visitor Center.

Specimens from the Garden's living collections will also be displayed in Sassafras through a series of custom panels. The Plant Records team spent months collecting and drying plants to create



(top) Sassafras dining area (bottom) Botanical panel detail

massive panels displaying species in artistic and scientific arrangements. One panel highlights rare plants in our care, another showcases the historic water lily collection, and another features plants with culinary and medicinal uses. Through the extensive Living Collections Management System (LCMS) database, many of the dried specimens in these panels can be linked back to the exact plant of origin.

Work progressed on creating the full entry experience, including the soaring glass of the main lobby and the adjoining Garden Gate Shop and Sassafras restaurant spaces, the Farr Auditorium and nearby meeting rooms, the structure of the Emerson Conservatory, and the framework for the outdoor gardens, pathways, and dining terrace.

"The Taylor Visitor Center opens a new chapter for the Missouri Botanical Garden," says Garden president Dr. Peter Wyse Jackson. "With these wonderful new facilities for visitors, we will bring new dimensions to our service to the community, demonstrating the importance and beauty of plants—and of the Garden and our mission."

# PROTECTION

(top) new orchid species, *Ypsilopus iversenii*, Tanzania (bottom); new milkweed species, *Matelea falcata*, Mexico

## WORLD-LEADING PLANT SCIENCE

hile headquartered in St. Louis, the Missouri Botanical Garden's plant science and conservation efforts take place across more than 30 countries on five continents. Our resources have an even greater reach, which has been particularly valuable during the pandemic.

Tropicos<sup>®</sup>—the most comprehensive plant science database in the world, founded and maintained by the Garden—has been a global resource for nearly four decades. In 2021, researchers across the planet were able to continue science and conservation work with the help of 4.8 million specimen records and 925,000 images freely available online. The database added more than 77,000 new specimens and 168,000 images in 2021, largely through digitization grants supported by the National Science Foundation.

In addition, the 7.7 million physical specimens of the Garden's Herbarium are an incomparable resource for the global scientific community. Last year, the Herbarium sent 25 loans containing 1,500 specimens to researchers at institutions across the world. Beyond St. Louis, the Garden made significant contributions to botanical research and conservation efforts, particularly in Latin America and Africa.

In Bolivia, the Madidi Project reached a milestone twentieth anniversary. The Garden and Herbario Nacional de Bolivia launched the project as a long-term collaboration to document plants in the previously unexplored region of Madidi National Park. It has been discovered to be one of the richest botanical hotspots in the world, with more than 5,000 reported species.

The Madidi Project is now focused on the ecology and evolution of plants in the region, particularly how climate change affects Andean forests and their species. One key finding published in 2021 shows that Andean forests act as carbon sinks, capturing more carbon than they emit.

"The work in Madidi, through the Garden's Center for Conservation and Sustainable Development (CCSD), has made remarkable contributions to our understanding of tropical ecosystems and the dynamics of biodiversity," says Dr. Christopher Davidson, a longtime supporter of the CCSD and the Madidi Project. "The discoveries over the decades have shown how valuable studies of ecosystems like Madidi are for monitoring the health of the entire planet."

In Africa, researchers in Gabon have been identifying endemic species across the richly forested country. Two papers published in 2021 detail a new methodology for identifying rare and endemic species in areas set for logging, to promote sustainable forest management.

Working with the Forest Stewardship Council (FSC), Garden researchers developed and tested an efficient, reliable new two-step process to identify species of high conservation value. The successful trial shows it is a cost-effective way for forestry companies and their partners to manage land sustainably while protecting populations of threatened species. The FSC is interested in expanding this method across Central Africa and possibly on a global scale. (top) new Ebony species, *Diospyros antsirananae*, Madagascar; (right) *Propithecus verreauxi* (in lemur family), Analavelona, Madagascar; (left) protecting precious woods in Madagascar

On the island of Madagascar, the Garden has worked closely with Malagasy collaborators for nearly 40 years. Our teams have established 12 protected conservation sites in this unique biodiversity hotspot to safeguard important threatened forest habitats and the animals they support, including endangered lemur species.

Garden researchers described and named 40 species of ebony and two species of rosewood in Madagascar in 2021. They estimate around 250 species of ebony and 100 rosewood species are native to Madagascar, including more than 100 species that can produce valuable timber. All of these slow-growing species are endemic and at least half are threatened, primarily due to land clearing for subsistence agriculture and illegal harvesting.

The Madagascar Precious Wood Project has been gathering information on all species of rosewood and ebony in Madagascar so the government can sustainably manage this valuable resource.

"The Precious Wood Project is one of many successful partnerships between the Garden and the people of Madagascar," says Dr. James C. Aronson, who has supported the Garden's work on the island for decades. "Together, they identify and protect the resources of the island, improving the environment for all."

# CULTIVATION

# HORTICULTURE

issouri Botanical Garden Horticulture staff balance the art and science of botanical display, making significant contributions to both in 2021.

The William T. Kemper Center for Home Gardening features demonstration gardens focused on homeowner needs and interests. The Lucy and Stanley Lopata Prairie Garden is undergoing a multi-year renovation due to an increased interest in native plantings. It will provide examples of the best ornamental native and nativar plants, creating habitat for native species while maintaining an attractive landscape aesthetic. The project is funded in part through a grant from the Stanley Smith Horticultural Trust. "Opportunities for breakthroughs like this are an important feature of the Garden's world-leading horticultural efforts," say Bill Gilbert and his wife Helen. "We are personally invested in supporting the resources needed to cultivate the very best horticulturists for both the beauty of display and the protection of the world's plant species."

(above) Plants grow at the Oertli Nursery for use in Garden landscapes.

(top) Garden staff, Brooke Fontz repots plants in the Oertli Hardy Plant Nursery. (bottom) Fraser fir, *Abies fraseri* seedling

Garden researchers and horticulturists are learning more about conserving one of the most popular Christmas tree species, Fraser fir (*Abies fraseri*). The tree is in danger of going extinct in the wild. In 2019, Garden horticulturists collected 17,000 Fraser fir seeds from the Appalachian Mountains and added them to the Garden's Seed Bank at Shaw Nature Reserve. A year later, the seeds were sampled for viability testing.

Only two of the seeds successfully germinated. Examining the seeds with an x-ray machine revealed infestation—insect damage that wasn't apparent to the naked eye. The x-rays also showed more of the seeds were simply empty.

Despite the challenges, the Garden was able to propagate eight seedlings in 2021. These trees are being cared for at the Oertli Family Hardy Plant Nursery. Horticulturists will monitor their progress through the summer heat, recording data for future conservation efforts. Viable seeds will remain in the Seed Bank—safeguarding this species for many years to come.

The Oertli Nursery is also growing more than 45,000 plants for the landscapes surrounding the new Jack C. Taylor Visitor Center. Nearly half of the 350 species on display will be new to the Garden, and many are rare or endangered. That includes species like *Parrotia subaequalis*, a critically endangered Chinese ironwood from Nanjing, and *Betula uber*, a birch considered one of the rarest trees in North America. "The resources of the Oertli Nursery are essential for continuing conservation horticulture," says Andrew O'Brien. "Lori and I are proud to support this important work—and the training of the next generation of horticulturists to protect endangered plants in our region and beyond."

Conservation horticulture is also focused on native Missouri species, such as the threatened eastern prairie fringed orchid (*Platanthera leucophaea*). Working with the Missouri Department of Conservation and the U.S. Fish and Wildlife Service in 2021, horticulturists hand-pollinated the orchids in northern Missouri.

Horticulturists then collected immature seed from ten plants, which germinated in the Garden's

Rare Karomia gigas tree

flowered for the first time

in the Garden's greenhouse



Pollinating the Eastern prairie fringed orchid, *Platanthera leucophaea* 

micro-progagation labs. Mature seed was collected for the Seed Bank. Horticulturists intend to display this beautiful native in the Garden's living collections.

> The Garden's conservation horticulture work received national recognition in 2021. National Geographic covered the first-known flowering of *Karomia* gigas in the Garden's greenhouses. Native to Tanzania, fewer than two dozen *Karomia gigas* trees are known to exist in the wild. The Garden is working with Tanzanian partners to conserve these trees in place (*in situ*) and outside their natural habitat (*ex situ*).

Only a handful of the thousands of seeds sent to the Garden in 2018 were viable. They produced 29 seedlings representing the genetics of seven wild trees, about one third of the known population. In 2021, one of these seedlings reached maturity and produced a flower—the first flower of this critically endangered species ever observed by plant scientists or horticulturists.

# CONNECTION

(above) Kids learn about plants and our environment in education programs and explore nature in the Doris I. Schnuck Children's Garden.

## EDUCATION and SUSTAINABILITY

T hroughout 2021, Missouri Botanical Garden Education and Sustainability staff focused on engagement across both physical and digital platforms. Members and visitors were delighted with the reopening of interpretive sites including the Doris I. Schnuck Children's Garden, Brookings Interpretive Center, and Tower Grove House—albeit with some modifications for safety and social distancing.

A limited number of in-person classes were also offered again, alongside virtual programs. Partnerships with Phipps Conservatory and Lewis Ginter Botanical Garden provided an opportunity to bring top-tier speakers to the Garden's audience virtually in addition to the wide array of recurring class offerings.

The Green Living Festival was virtual in 2021, as it was in 2020. The Festival marked its twelfth anniversary by offering three days of programming in June exploring the topics of energy and efficiency, NatureScaping, and



planet and personal wellness. Each day provided a collection of panels, workshops, family activities, and exhibitors. The virtual event was free with the generous support of event sponsors.

Long-running Education and Sustainability programs achieved significant milestones in 2021. The American Alliance of Museums awarded the Garden a Sustainability Excellence Award, celebrating the efforts of the EarthWays Center. The award recognizes efforts to champion sustainable practices in facilities, programming, and exhibits. The Garden was honored in the programming category for the Green Business Challenge, the expansive and long-running green business mentorship program.

The Green Business Challenge uses a voluntary program to assist businesses of any size in creating positive, sustainable changes. The 12 years of the program have provided networking, mentorship, and shared resources to hundreds of local businesses. Positive outcomes include the removal of invasive species and reintegration of native species on business campuses, citywide greenhouse gas inventories, and the diversion of over 1.4 million pounds of electronic waste from landfills. Community involvement, education, and scalability Employees of Graybar, Challenge have resulted in a continuously Presenting Sponsor, working a St. Louis expanding program incorporating Area Food Bank distribution day. every facet of sustainability.

"Graybar is proud to be both a longterm participant and a sponsor of the Green Business Challenge," says Timothy E. Carpenter, Vice President-Treasurer and Corporate Council representative of Graybar. "For more than a decade, this program has provided invaluable resources to businesses of all types and sizes across our community, creating a healthier, more sustainable environment for everyone."

The ECO-ACT Environmental Leadership Education program marked 40 years of helping St. Louis-area youth forge meaningful connections with the natural world. Since 1981, ECO-ACT has helped high school juniors and seniors connect with ecology, education, and local environmental issues. ECO-ACT has long been supported by The Saigh Foundation, which endowed the program in 2007.



ECO-ACT participants explore ecology, education, and local environmental issues.

High school students in ECO-ACT create and teach ecology lessons to fourth grade students to connect younger children to these topics. Through the school year, ECO-ACT students research and present on local environmental issues and attend outdoor adventure activities that increase their ecology knowledge, strengthen their communication and teamwork skills, and boost their confidence.

> For Garden educators, the success of the ECO-ACT program manifests through its longevity and its impact on participants. Students who have taken part in the program regularly cite their experience as instrumental in fostering or advancing an interest in nature. Many ECO-ACT alumni have gone on to find careers in environmental stewardship, creating a legacy that protects and improves our community for generations to come.

ohotos by Lisa DeLorenzo, Kat Niehaus, and Demi Striglos

# RESTORATION



(top) American Wild Ensemble performs at Bascom House (bottom) McMillan Prairie Overlook construction

# SHAW NATURE RESERVE

issouri celebrated its state bicentennial in 2021, and Shaw Nature Reserve honored the anniversary with the launch of Explore MOre, inspiring hikers to explore Missouri's native habitats. A record number of visitors took the opportunity to enjoy the healing power of nature and the safety of wide-open spaces during the ongoing pandemic, and general attendance increased to more than 65,000.

In August, the historic Bascom House served as the backdrop for a performance by the American Wild Ensemble. As part of the bicentennial celebration, the ensemble commissioned six composers connected to the state to write new works inspired by Missouri history, culture, and musical traditions. The performers were joined by the former state poet laureate Karen Craigo.

The bicentennial year also served to launch visitor enhancement projects. Work began on the Abigail Arla McMillan Prairie Overlook in September, which features a cantilevered pavilion providing a shady respite for visitors to enjoy the spectacular view of the surrounding prairie. Adjacent to the Whitmire Wildflower Garden, the Ozark Ethnobotany Garden continued to take shape. The dry-stacked stone wall bordering the garden was completed in 2021, and work began on the reconstruction of the David Thornley Orthwein Log Cabin at the entrance to the area.

In 2021, the Nature Reserve's ecological restoration team grew to six positions, part of a strategic plan to bring the Nature Reserve's full 2,400 acres into active management by 2030. Three highly skilled and accomplished women joined the team as restoration technicians through grant-funded support from the Robert J. Trulaske Jr. Family Foundation, Bellwether Foundation, the U.S. Fish and Wildlife Service and The Conservation Fund.

"Ecological restoration is critical for protection and recovery of endangered species such as Indiana bats," says Clint Miller, Midwest Regional Director of The Conservation Fund. "Shaw Nature Reserve sets an exemplary standard for the benefits of strategic investment in restoration of native biodiversity on protected lands."

The Ecological Restoration Endowment also continued to grow, with support from the Edward K. Love Conservation Foundation and generous private donors, ensuring staffing is sustained to provide exemplary stewardship of the Nature Reserve's natural communities.

With this increased capacity, the ecological restoration team invested record hours in invasive species control.



Ozark Ethnobotany Garden construction, adjacent to Whitmire Wildflower Garden

They applied prescribed fire in acres never before burned by Nature Reserve staff and collected a record 677 pounds of seed from 246 native plant species. Collected seeds will be sown and used for restoration projects throughout the Nature Reserve in 2022.

All programs at Shaw Nature Reserve work to foster responsible stewardship, protection, and enjoyment of the natural world. Education programs, both formal and informal, provide opportunities for visitors of all ages to explore and learn.

Pandemic restrictions in 2021 meant many schools participated in virtual programs. Shaw Nature Reserve's Virtual Ecosystem Explorations were recognized by researchers from

(top) Ecological restoration technicians collected 677 pounds of seed (bottom) Managing native landscapes with controlled burns

Virginia Tech and Clemson University's evidence-based learning network for providing excellent pre-program activities, including multiple learning styles, and actively engaging students.

Environmental education at the Nature Reserve is supported by Mysun Charitable Foundation, which funds both field trip programs for under-resourced schools and the Shaw Institute for Field Training (SIFT) program.

SIFT students dedicated more than 500 hours in support of restoration and research projects at the Nature Reserve in 2021. The career-focused program connects students with diverse professionals in environmentally focused fields and hands-on, meaningful projects focused on research and conservation.

"Young people need connections to nature and time spent outdoors," says Adam Glassberg, trustee of the Mysun Charitable Foundation. "Trustees of the Mysun Charitable Foundation are proud to support Shaw Nature Reserve by providing thousands of St. Louis-area students with quality nature-based education programs."

# EXPANSION

## Sophia M. Sachs BUTTERFLY HOUSE

V isitors to the Sophia M. Sachs Butterfly House enjoyed a full calendar of events and activities in 2021, with continued best practices focused on the health and safety of visitors to indoor venues. Education programs and events as diverse as Morpho Mardi Gras, the Pollinator Plant Sale, Firefly Festival, Winter Jewels, and dozens of others were all hosted for curated crowds with great success.

The Tropical Conservatory, where as many as 80 butterfly species in free flight live among 150 tropical plant species, is the heart of the Butterfly House. In 2021, the Tropical Conservatory unveiled an exciting new reason to visit: the expansion of the Entomology Lab.

The Butterfly House began welcoming visitors to the new Entomology Lab in September, capping one of the largest expansion projects in the Butterfly House's history. A grand opening ceremony was held as part of Evelyn E. Newman Founder's Day on September 18. (above) Malachite butterfly, *Siproeta stelenes*; guests "Under the Big Top" and at "Fancy Tea"



In addition to tripling staff work space, the new area gives visitors a firsthand look at the care and cultivation of the Butterfly House's diverse living insect collection. Interpretive elements guide visitors through the four stages of the butterfly lifecycle, the differences between butterflies and moths, and the international journey butterflies take to arrive at the Butterfly House.

Visitors can interact with entomologists through the viewing windows as they watch the daily care of the butterflies and other invertebrates. Animal feedings, the unpacking of new butterfly shipments from across the world, and more are now on display like never before.

The expanded Entomology Lab was made possible in part through a grant from the Institute of Museum and Library Sciences (IMLS), as well as through generous private donations and general operating support.

"The Entomology Lab truly brings science and these fascinating insects up-closeand-personal for Butterfly House visitors," says Dr. Alissa Campbell Shaw, Senior Manager of Global CSR and Community Engagement for International Paper, one of the funders of the Entomology Lab. "It is so important for our community, especially for children, to understand the vital role these pollinators play in our lives—and to see the scientists and staff who care for them." With this larger space, the Butterfly House team can maximize care of the invertebrate collections. The new lab allows the Butterfly House to support the U.S. Fish and Wildlife Service by housing confiscated invertebrates, which were entering the country illegally. The invertebrate collections are growing through these acquisitions and acceptance of collections from insect zoos that closed in 2021. These acquisitions allow the Butterfly House to grow the collections in a strategic way while preventing the insects from being euthanized.

In addition to acquisitions, breeding programs are ramping up for species including elephant beetles and giant African flower beetles. Plans are underway for additional breeding programs focused on rare and endangered species.

"As longtime Garden volunteers and members, we have enjoyed the Butterfly House for years," says Jan Hermann, who attended the grand opening of the Entomology Lab with her husband and fellow volunteer, Carl. "We love sharing all it has to offer with our friends and family. The new Entomology Lab is a wonderful improvement for both the scientists and the public."



# EXPLORATION

Origami in the Garden sculpture installations

# SPECIAL EXHIBITIONS

O ne of the most exciting aspects of visiting the Missouri Botanical Garden is exploring—discovering seasonal displays, experiencing a cool breeze or the warm sun, seeking colorful plants in bloom, and being open to surprises.

In 2021, Garden visitors were invited to explore both indoors and outdoors with two special exhibitions. Across the Garden grounds, *Origami in the Garden* brought museum-quality metal sculptures to the landscape and explored the Japanese art of paper folding. More than 282,000 Garden visitors enjoyed the displays from April 17 through October 10.

*Origami in the Garden* captured the delicate nature of paper in metal on a grand scale. The 18 monumental works featured flying birds, painted ponies, emerging butterflies, floating boats, and a majestic tower that created the illusion of 1,000 peace cranes. The Folded Forest display in Brookings Exploration Center allowed guests to be a part of the exhibit, creating their own origami art for the display. Origami After Hours showed *Origami in the Garden* in a whole new light: sunset. Visitors enjoyed an afterwork walk with friends and family, along with patio drinks and live music on Thursday and Friday evenings in the summer months of June through August. The sculptures of *Origami in the Garden* featured dramatic lighting, allowing guests to enjoy new views of each piece as the sun went down.

With the support of event sponsors, *Origami in the Garden* was included with admission.

"We're happy to support this special exhibition that brought the beauty of art and nature together at the Garden for all to enjoy," says Karen Green, Trustee of the Pohlmann Legacy Foundation and one of the event sponsors. "The exhibition, originally set for spring of 2020, was well worth the wait, inspiring visitors of all ages to spend time outside with these incredible folded metal sculptures."

A unique exhibition awaited Garden visitors within the Stephen and Peter Sachs Museum as well. Beginning in May and running ten months, *Grafting the Grape: American Grapevine Rootstock in Missouri and the World* introduced visitors to the Garden's long history of supporting grapevines and winemaking around the world.



A mix of Garden artifacts, contemporary art, herbarium specimens, and technology combined in this exhibition to tell the story of *Vitis vinifera*, the most beloved winemaking grape in the world. Drinking wine from this species would not be possible without the research, identification, and development of 19th-century Missouri botanists, entomologists, and viticulturists.

An unknown insect, grape phylloxera, found its way from the American Midwest to the vineyards of Europe in the 1850s, devastating the wine grape crop. The Garden's first botanist, Dr. George Engelmann, and Missouri state entomologist Charles V. Riley identified the phylloxera as the cause of the devastation. Engelmann and Riley then worked with viticulturists to promote grafting the European grapevine (the scion) onto American rootstock to allow European winemaking to continue.



"The In-Between" art installation as part of *Grafting the Grape* 

The fascinating display was accompanied by extensive virtual and digital offerings, including virtual wine tastings, a book club, a six-part lecture series, and numerous blog posts. Thanks to a generous grant from the Melinda J. McDaniel Charitable Trust, UW, Bank of America, N.A., Trustee, the Garden can now digitally capture spaces in 360-degree-detail to create virtual tours. A complete virtual tour of *Grafting the Grape* was created in stunning detail.

"The Sachs Museum is such a unique space for this rich and detailed exhibition," says Linda Lockwood, Senior Vice President of Institutional Services at Regions Bank and Chair Emeritus of the Corporate Council. "The Corporate Council learned much and gained an appreciation for the role both Missouri and the Garden played in the global history of wine. We were proud to sponsor the exhibition and host a winethemed book club in partnership with St. Louis Public Library."

# DEDICATION

# EXEMPLARY SERVICE

The combined efforts of Missouri Botanical Garden staff and volunteers around the world are essential to the Garden's ability to carry out our global mission and serve as a pillar of the cultural community in our region. This dedication and talent were particularly vital in 2021, as the continuing pandemic required flexibility, patience, and creativity in all aspects of our work.

Several Garden staff retired in 2021 after exemplary terms of services. The Garden is grateful for their years of commitment to our mission.



Flowering dogwood, Cornus florida 'Red Pygmy'



James Cocos 26 years with Horticulture



Blanche "Babs" Wagner 25 years with Horticulture



**Peter Hoch** 44 years with Science and Conservation



**Brenda Zanola** 20 years with Institutional Advancement



James Solomon 40 years with Science and Conservation

### **Not Pictured:**

Judy Servais 31 years with Human Resources

Michael Westmoreland 27 years with Information Technology The Garden also made a significant commitment to diversity and inclusion in 2021. Amanda Shields joined the senior leadership team as the Garden's first Director of Diversity, Inclusion, and Belonging. The broad and critically important portfolio of this vital leadership position includes establishing policies and programs making our commitment to diversity and inclusion increasingly clear at the Garden and in our community.

The Garden actively worked to center voices of color in 2021 as part of this commitment. During the national Black Botanists Week event in July, the Garden's Twitter and Instagram feeds were hosted by Black members of the Horticulture team.



Horticulture staff Daria McKelvey and Matthew Norman host the Garden's Twitter and Instagram feeds on Black Botanists Week.



"I've been volunteering for 40 years in the Horticulture Answer Service. Being in such a beautiful Garden environment and working with interesting and friendly people has been a great experience for me."

-Charmaine Hutchings, Missouri Botanical Garden volunteer

In addition to the dedicated staff, the Garden is honored to be supported by nearly 700 volunteers each year. In 2021, the following volunteers reached significant service milestones.

50 Years Barbara O'Brien

45 Years Sharon Dougherty

### 40 Years **Charmaine Hutchings**

Mary Pelot

### **35 Years**

**Christy Jones** Nadine Kouba Linda Traina

### 30 Years

Joan Dellbringge Nancy Kirchhoff **Phyllis Pieper** Louis Stark

### 25 years

Ima Bote Ann Earley Nancy Gelb **Bill Grant** Pamela Hardy William Lenz, Jr. Sandra Marler

Bob Noe Sue Quirk Mary Ann Swaine **Phyllis Weidman** 

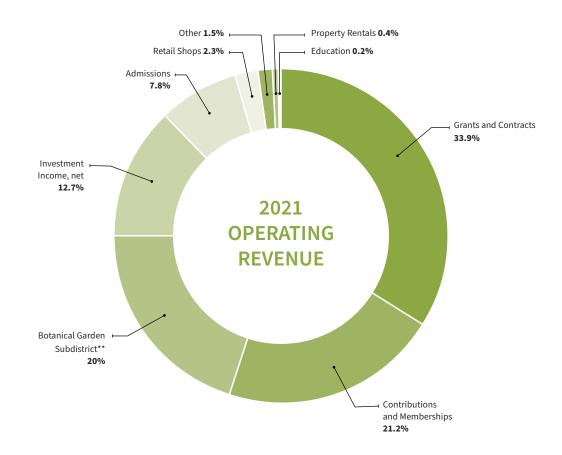
### 20 Years

**Cindy Cross Evie Dickerman** Carolyn Gildehaus **Carol Gravens** Karl Kleekamp Jack Lane Steven Linford Terry Milne

Alison O'Brien Ve'Niecy Pearman-Green Brian Sadlo Ron Schlapprizzi Joy Stinger Harold Tennyson Jan Thomas Kathryn Young **Richard Young** 

# FINANCIAL INFORMATION

(fiscal year ended September 30, 2021\*)



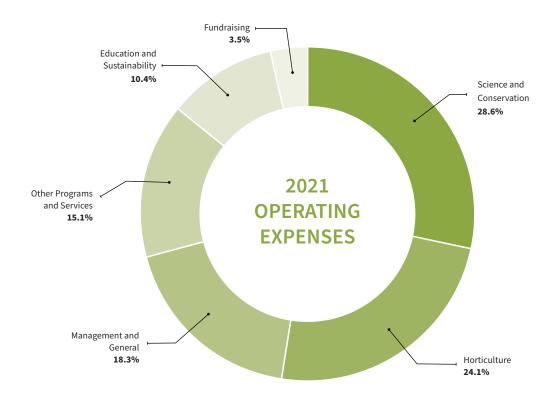
### 2021 Operating Revenue

Total Operating Revenue	\$52,475,740
Property rentals	218,947
Education	131,025
Other	774,807
Retail shops	1,192,776
Admissions	4,068,079
Investment income, net	6,659,908
Grants and contracts	17,807,499
Contributions and memberships	11,110,033
Botanical Garden Subdistrict	\$ 10,512,666

### 2021 Operating Expenses

Program Services	
Science and conservation	\$ 10,964,384
Horticulture	9,265,840
Education and sustainability	3,990,038
Other	5,792,451
Total program services	30,012,713
Supporting Services	
Management and general	7,037,568
Fundraising	1,349,690
Total supporting services	8,387,258
Total Operating Expenses	\$38,399,971
	+;;

\* The Missouri Botanical Garden changed its fiscal year in 2019.



### 2021 Fund Balances

Operating Fund	
Total operating support and revenue	\$ 52,475,740
Total operating expenses	(38,399,971)
Total operating transfers	(7,807,337)
2021 Operating Fund excess/(deficit)	6,268,432
2021 Pension liability adjustment	(26,658)
10/1/20 Operating Fund balance	5,146,608
9/30/21 Operating Fund	11,388,382
Endowment Funds	192,504,690
Land, Building, and Equipment Fund	120,555,700
Capital Campaign Fund	37,551,786
Gift Annuity Fund	12,465
Total All Funds	\$ 362,013,023

#### \*\*Botanical Garden Subdistrict

Since 1972, residents of St. Louis City and County have generously supported the Metropolitan Zoological Park and Museum District (ZMD). The ZMD is a property tax-supported district that distributes funds through five cultural subdistricts, which include the Botanical Garden Subdistrict. The Botanical Garden Subdistrict has provided support for the Missouri Botanical Garden since 1983. The Garden is grateful for the continued support of the Botanical Garden Subdistrict and the residents of St. Louis City and County.

Financial information used in this report was obtained from the 2021 Missouri Botanical Garden audited consolidated financial statements. These financial statements can be obtained by visiting mobot.org/reports.

# THANK YOU for your support

## ZOOLOGICAL PARK AND MUSEUM DISTRICT

The Metropolitan Zoological Park and Museum District (ZMD) is a tax-supported cultural district governed by an eight-member board of directors, each appointed for a four-year term by the Mayor of the City of St. Louis and the St. Louis County Executive.

Robert E. Eggmann, Chair Darnetta Clinkscale, Vice Chair Christine A. Chadwick, Immediate Past Chair Thomas C. Mummert, Treasurer Michelle Harris, Secretary Thomas J. Campbell, Board Member Pat Coleman, Board Member Jill Nowak, Board Member

## **BOTANICAL GARDEN SUBDISTRICT**

The ZMD levies an annual tax on property on behalf of five subdistricts, including the Botanical Garden Subdistrict. The subdistrict contracts with the Garden to provide botanical services.

Diego Abente Yemi Susan Akande-Bartsch, PhD Adrian E. Bracy Charlotte Hammond Sal Martinez Marcia B. Mellitz Lydia Padilla Kristin Thompson Poelker Francis Yueh Hillary B. Zimmerman

### Nonvoting Advisory Members

Stacy Edwards James F. Hoffmeister Gerre Kraemer Daniel J. Welsh

### BOARD OF TRUSTEES MISSION COUNCILS AND ADVISORY GROUPS

The Garden's Board of Trustees oversees several mission councils and advisory groups focused on specific areas of governance. We are grateful to the following members supporting the Trustees through these councils and groups.

#### **Community Relations**

Advisory Group Kirk A. Imhof, Chair Jackie Joyner-Kersee Lee C. Kling Mary Ann Lazarus Dennis E. Lower Brian A. Murphy Andrew A. O'Brien William E. Reininger, Jr. LaTonia Collins Smith, EdD Duane Williams Francis Yueh

#### **Conservation Mission Council**

Cynthia S. Peters, Co-Chair John Saunders, Co-Chair Daniel A. Burkhardt Mabel L. Purkerson, MD Ginger Smith Robert B. Smith Nancy Ylvisaker Hillary B. Zimmerman

#### Education Mission Council

Carolyn W. Losos, Co-Chair Lisa Trulaske, Co-Chair Bonnie Barczykowski Maxine Clark Julie Fickas, EdD Deborah Holmes, PhD Diane P. Lochner Roxanna Mechem Lydia Padilla Robert Shaw Frederick Steele Carey Tisdal

#### Horticulture Mission Council

David W. Kemper, Chair Yemi Susan Akande-Bartsch, PhD Mrs. Walter F. Ballinger II Daniel A. Burkhardt Prissy Evans Timothy W. Gamma Christopher Koster Nancy Martin Ross Lori Samuels Nancy R. Siwak Andrea Van Cleve Josephine Weil

#### Science Mission Council

Michael K. Stern, PhD, Chair Elizabeth A. Kellogg, PhD Ward M. Klein Marcia B. Mellitz Kenneth A. Olliff, PhD Mabel L. Purkerson, MD Scott C. Schnuck Julian Schuster, PhD

### Shaw Nature Reserve

Advisory Group L. B. Eckelkamp, Jr., Chair Daniel A. Burkhardt Jennifer Fakes Doug Ladd Sproule Love Parker B. McMillan William L. Miller, Sr. David T. Orthwein Kei Y. Pang

#### William L. Brown Center Advisory Group

William T. Brown, Co-Chair Bernd (Ben) Sehgal, Co-Chair Lila A.T. Akrad, Esq Michael J. Balick, PhD Alicia Brown-Matthes John de la Parra, PhD M. Ehsan Dulloo, PhD Allison Miller, PhD Natalie Mueller, PhD Ari Novy, PhD



(above) Fall color of the Full moon maple, *Acer japonicum* 'Vitifolium' (left) Daffodil, *Narcissus* 'Delnashaugh' in the Doris I. Schnuck Children's Garden

### MEMBERS' BOARD

The Members' Board leadership group organizes the activities and events that enhance and encourage membership, expand awareness in the community, and increase financial support for the Garden's mission.

Stephanie K. Littlefield, President Joan Ball Tammy Behm Deborah Callihan Pauline Cella Megan Clinton Susan A. Cohen Janelle Criscione Jeanie C. Davis Mary Kay Denning Ellen Dubinsky Kathy Durel Patty Erker Kim Gamel Carola Gloyd Irene Hasegawa Barbara Hilton Sandra J. Holmes Laure B. Hullverson Cindy Hults June Hutson\* Maureen R. Jennings Ginny Johnson Ellen E. Jones\* Celeste D. Kennedy Kristen Cornett Knapp Sally Kriegel Martha LaFata Janet B. Lange Anne Lathe Holly Liebig Mary V. Longrais\* Megan S. Maher Parker B. McMillan Janet Mika Denise Miller Isabelle C. Morris Sue B. Oertli Julia L. Peters William J. Rable Jan Simons Raiser Sue M. Rapp Marsha J. Rusnack Nancy L. Sauerhoff Ron Schlapprizzi Susan Schoeninger Susie Littmann Schulte Teresa Schulz Pat Seeler Carol A. Squires Nora R. Stern Elizabeth Teasdale David Tognoni Jane S. Tschudy Linn Wells Debra K. Windus Pamela Wingbermuehle

\* deceased

### YOUNG FRIENDS COUNCIL

The Young Friends Council leadership board engages young professionals of the St. Louis community with the global network of the Garden, developing events and initiatives to grow a younger Garden audience.

Meghan Santen, Chair Eryn C. Bassett, Co-Chair Erica L. Agnew Gwen Arenberg Jack Arnold Trey Bartsch Laura Bentele Kimberly M. Bousquet Erin B. Davis Ashley Diaz Lauren Dierkes Mallory Fisk Douglas Gaehle Elizabeth Garner Jesse J. Gray Hillary R. Gredell Ashley Hoolihan Matthew Hutchinson Anne Hyde Richard Jerelds Erin Jones Rachel L.S. Jones Kyle R. Juvers Mary Kate Keenoy Jessica King Tina Liu Anne Luckey Ford Manion

Andrew J. Martin Evan Martin Lauren Maul Jennie Meresak Jennifer Merritt Chelsea Mérta Susan R. Meyer Laura Miller Jessica Nelson, MD Jessica K. Neumeyer Kevin O'Shaughnessy Emma Prince Rebecca Punselie Katy Robertson Brittany Root Kyle Rosborg Nathan Russell Brenna Slavens Brinkley M. Smith Arathi Srikanta Erin Sullentrup Kate Tichelkamp Mary Tiernan Courtney Vomund Elizabeth U. Wells Lee Wilber Athanasia Xeros

### CORPORATE COUNCIL

The dedicated representatives of the Corporate Council collaborate with the Garden to further relationships with the business community through education, sustainable business programs, volunteer opportunities, and special events.

Linda L. Lockwood, Chair, Regions Bank Neil Adams, Raymond James Pamela Anders, Ameren Corporation Emily L. Andrews, U.S. Green Building Council-Missouri Gateway Chapter Jesse Appleton, Banner Public Affairs Nicholas Arb, Guarantee Electrical Company Robyn Ast-Gmoser, Thompson Coburn LLP Julie E. Bahr, Clayton Financial Group Robert M. Bain, Stinson LLP Michael Bernard, Centene Corporation Danielle Bohler, Ronnoco Beverage Solutions Patrick Bousquet, Knight Nicastro MacKay, LLC Thaddeus E. Brija, Renaissance Financial Corporation Brian Bush, CBRE Timothy E. Carpenter, Graybar John Caulfield, Sovereign Insurance Group Larry Corley, Maritz Holdings, Inc. Kenneth H. Crawford, Argent Capital Management Jade DeBusk, HBM Holdings Company Jeanne M. Dee, Anders CPAs + Advisors Christi M. Dixon, Bayer Melissa P. Earthman, The Northern Trust Company

Jay Ellington, CDG Engineers Lisa Filkins, Hager Companies Timothy W. Gamma, Gamma Tree Experts Gregory J. Gorman, Nidec Motor Corporation Brad Goss, SmithAmundsen LLC Diane K. Grimsley, Tarlton Corporation Surendra K. Gupta, American Radiolabeled Chemicals, Inc. Arthur Hiemenz, Hunter Engineering Company Jesse Hill, Edward Jones Jenny L. Hoelzer, Commerce Bank David Hunnius, RBO PrintLogistix Thompson Knox, SteadyRain, Inc. Carleen S. Kramer, Catering St. Louis, Inc. Claire LaFont, Husch Blackwell LLP Tracy Lauer, Anheuser-Busch Kevin J. Lee, Mid-America Transplant C. Eric Lobser, Spire Diane P. Lochner, PGAV, Inc. Jeania M. Lowery, Bank of America Jody Lurk, UHY LLP Kelly A. Malone, Caleres Walter B. McClellan, Office Essentials, Inc.

Theresa Nikolaus, UMB Bank Gayla A. Nunn, ABNA Engineering, Inc. Steve O'Rourke, StraightUp Solar Christi A. Reiter, Cass Information Systems, Inc. / Cass Commercial Bank Ann D. Rice, Safety National Casualty Corporation Megan Ridgeway, Arcturis Julie Ring, MiTek Inc. Dustin R. Ruch, ACERTUS Christoph H. Schmidt, CSI Leasing, Inc. Shawn E. Schukar, Ameren Corporation Lacey Searfoss, Thompson Coburn LLP Deborah A. Seidel, Bunge Julie Steininger, Standing Partnership Julio Suarez, Anheuser-Busch Peter D. Van Cleve, Bryan Cave Leighton Paisner Steve H. Wang, Protiviti Inc. J. Nicci Warr, Stinson LLP Robert M. Williams, Jr., Williams Patent Crusher & Pulverizer Co., Inc. Joseph Winters, International Paper

# GARDEN NUMBERS

### VISITORS

Attendance at all locations	843,906
Highest daily attendance in 2021	4,777 (October 1)
Highest nonevent attendance	4,096 (May 30)
Lowest nonevent attendance	18 (February 16)

MEMBERS	
Member households	43,811
Total number of member visits	302,052

PERSONNEL	
Number of staff	406
Volunteers	605
Volunteer Supervisors	131
Total Volunteer Hours	22,325

### COMMUNICATIONS

Total online visits	9,266,551
Unique online visitors	5,941,401
Total visits via mobile device	3,189,324
Total email subscriber base	139,046
Social network followers	324,185

### HOME GARDENING

Horticulture Answer Service	Calls: 3,483 Questions: 4,102
Online email gardening questions answered	2,342
Hours volunteerd by Master Gardeners	38,819
New certified Master Gardeners	58

### HORTICULTURE

Total accessions	31,444
Wild source accessions	7,848
Total taxa/unique types of plants	17,470
Total rare or threatened (endangered) species	1,476
Total accessions in the Seed Bank	2,462
Total genera	2,267
Total species	8,775
Total plantings	54,307

### EDUCATION

Education program participation (including virtual)	196,921
Students/teachers participating in education programs	14,496
Teachers using workshops and instructional material	1,186
Scouts and leaders in education programs	380
Adults in adult education programs	5,829
Youth and families in education programs	1,079
Seniors, special needs, others in horticultural therapy education programs	5,266
People engaged via community-based programming	10,168
Visitors experiencing drop-in education opportunities	158,518

### EDUCATION VENUE ATTENDANCE

Visitors to the Children's Garden	41,999
Visitors to Brookings Exploration Center	(closed)
Visitors to Tower Grove House	30,847
Visitors to the Dana Brown Overnight Center at Shaw Nature Reserve	440

### SCIENCE and CONSERVATION

Staff publications	193
New species described	158
Countries where fieldwork is done	presence in 35 countries
Graduate students	7, from 3 countries
Herbarium total specimens	7,730,000
Mounted specimens added to Herbarium	54,520
TROPICOS®	specimens: 4,838,414 plant names 1,369,991 hits/year: 61,445,570
Articles published in MBG Press's two journals, <i>Annals</i> and <i>Novon</i>	<i>Novon</i> articles: 31 <i>Annals</i> articles: 19
New books added to the Peter H. Raven Library	Books: 1,349 Journals: 1,547
Interlibrary loans provided	224
Interlibrary loans received	209
Reference questions	1,504
Visitors to the Sachs Museum	10,875

# MANAGEMENT TEAM



**Dr. Peter Wyse Jackson** President (314) 577-5110



Robert Woodruff Chief Operating Officer



Keith Archer Chief Operating Officer (314) 577-5141 karcher@mobot.org



**Dr. James Miller\*** Senior Vice President, Science and Conservation



Andrew Wyatt Senior Vice President, Horticulture and Living Collections (314) 577-9426 awyatt@mobot.org



Glenda Abney Interim Vice President, Education and Director, EarthWays Center (314) 577-0288 gabney@mobot.org



Teresa Clark Vice President, Human Resources (314) 577-5183 tclark@mobot.org



**Jennifer Mulch** Controller



Patty Arnold Vice President, Institutional Advancement (314) 577-9495 parnold@mobot.org



Chuck Miller Vice President, Information Technology and Chief Information Officer (314) 577-9419 cmiller@mobot.org



Deniz Piskin Vice President, Facilities and Construction (314) 577-5131 dpiskin@mobot.org



Olga Martha Montiel Vice President, Conservation and Sustainable Development (314) 577-9412 omontiel@mobot.org

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Vice President,

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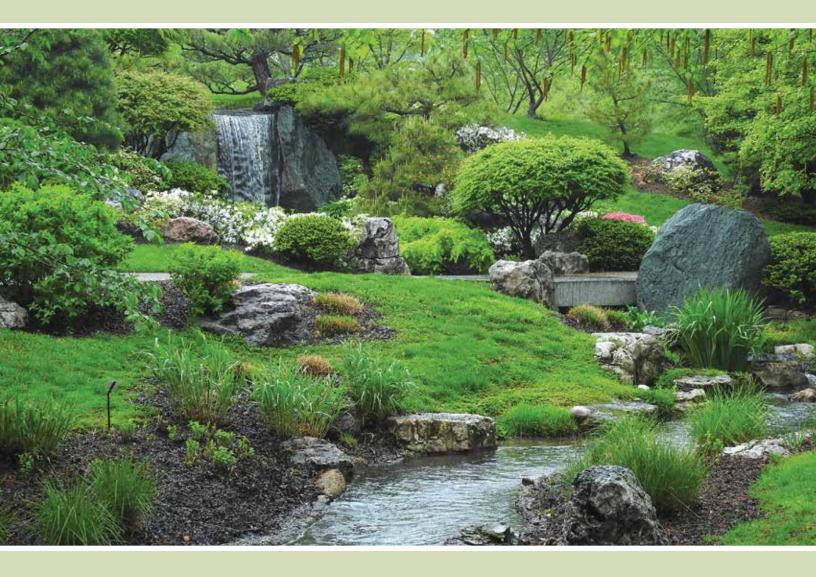
Jennifer Mullix Director, Sophia M. Sachs Butterfly House (314) 577-0894 jmullix@mobot.org



Amanda Shields Director of Diversity, Inclusion, and Belonging



Paul Brockmann\* Consultant, Construction





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