



SUSTAINABILITY DIVISION

2023 YEAR END SUMMARY



MISSOURI BOTANICAL GARDEN

The Sustainability Division plays a pivotal role in the Garden's efforts to address challenges such as climate change, biodiversity loss, habitat vulnerability, and improving the well-being of plants, people, and all living things. Bridging the gap between understanding these issues and implementing practical solutions, the Sustainability Division's work supports clean air, water, and soil. These are the necessary building blocks for the triple bottom line of thriving and sustainable natural environments, robust and prosperous economies, and supportive and resilient communities.

"Each year we continue on this journey towards a more sustainable future. In 2023, the Sustainability team at the Missouri Botanical Garden made substantial progress in cultivating growth of our team and with internal greening efforts. Additionally, our Division strengthened its focus on regional outreach more than ever before as we continued to reach out to our community enriching lives and landscapes alike."

Glenda Abney,
Vice President of Sustainability
Missouri Botanical Garden



Highlights of our accomplishments in 2023 include:

- The Sustainability Division team expanded and evolved with Katherine Golden stepping into the role of Senior Manager of Sustainability Initiatives, a new Sustainability Data Coordinator (Elijah Narimalla) was hired, and the Outdoor Youth Corps Instructor (Olivia Dove) became a full-time position.
- The Sustainability team increased engagement in sustainability programs and educational opportunities by 25% this year.
- As an intern, prior to joining the Garden as the Sustainability Data Coordinator, Elijah led the collection and input of data to complete the Garden's first Greenhouse Gas Inventory for the buildings and campus within the City of St. Louis. The Garden will be working on a deeper dive, with increased data gathering for its second inventory coming in 2024.
- The team celebrated green living with the traveling Green Living Festival in collaboration with all five St. Louis Metropolitan Zoological Park and Museum District organizations. Each location hosted a full day of workshops, exhibitions, tours, and family activities. This series of events welcomed 27,229 visitors who learned how to live greener, healthier, more sustainable lives.
- Our work in green workforce development continued with programs such as Outdoor Youth Corps (OYC), Outdoor Leadership Corps (OLC), paid internships, building performance certification trainings, workshops and more. Together these green industry programs provided sustainability-learning experiences to 467 individuals including youth, emerging leaders, and green industry professionals.
- The Shaw Series program returned with a Brining Training Workshop helping municipalities and landscape professionals learn how to utilize brining to reduce the amount of road salt used during winter weather events helping to reduce chloride in local waterways and improve water quality.
- The Sustainability Education team expanded its focus on climate change education. The team co-led the 2023 Sustainability Institute for Educators – Climate Connections, participated in several professional learning opportunities, and was selected to co-lead the Midwest-St. Louis regional cohort for Climate Generation's 2024 Summer Institute for Educators.



EDUCATION AND COMMUNITY ENGAGEMENT

43,658 PEOPLE ENGAGED IN SUSTAINABLE SOLUTIONS

27,229 FESTIVAL GUESTS

5 POP-UP GREEN LIVING FESTIVALS

St. Louis Metropolitan Zoological Park and Museum District (ZMD) organizations collaborated with the Garden to host pop-up Green Living Festivals at each of the five sites. Each event celebrated sustainability with workshops, exhibitions, tours, and family activities bringing solutions for greener, healthier lives to our community. Support for the 2023 Green Living Festival include: Presenting Sponsor - Ameren Missouri, Workshops and Tours Sponsor – Spire, Naturescaping Sponsor – Missouri Department of Conservation, and Festival Friends – EFS Energy, Missouri Department of Natural Resources, Missouri Gateway Green Building Council, MSD Project Clear, St. Louis Composting, and the St. Louis-Jefferson Solid Waste Management District.

34,884 COMMUNITY LEARNERS AND PARTNERS

438 COMMUNITY EVENTS, CLASSES, PROJECTS, AND REGIONAL INITIATIVES

The Sustainability Division continued to serve as a community resource connecting individuals and community organizations to sustainable solutions through classes, tours, and support of regional sustainability initiatives. Staff expertise helped advance food waste reduction, promote recycling educational campaigns, engage in climate change education, educate about energy efficiency improvements, and much more.

56 GREENER BUSINESSES

2,260 ENGAGED PROFESSIONALS

The 2023 St. Louis Green Business Challenge, a program of the Missouri Botanical Garden, helped deliver Triple Bottom Line results (fiscal, social, and environmental) to businesses of all types and sizes across the St. Louis region. The Garden participated at the Champion level for the innovative work in expanding sustainability tracking and conducting our organization's first Greenhouse Gas Inventory.

4,210 SUSTAINABLE STUDENTS

216 CLASSES AND PROGRAMS

Sustainability education programs increased student engagement by 20% and provided engaging hands-on outreach programs and community resources for K-12 students in topic areas including: waste reduction, recycling, composting, climate change education, energy efficiency, and stormwater management.

211 EMPOWERED EDUCATORS

12 WORKSHOPS

Engaging workshops helped regional educators build a better understanding of sustainability issues and how to bring these topics to life through classroom projects, activities, and integrated curriculum.

125 RAINFOREST PROJECTS INSTALLED

\$405,198.32 IN RAINFOREST REBATES AND GRANTS AWARDED

MSD Project Clear and Deer Creek Watershed Alliance's programs, coordinated by Sustainability Division staff, helped facilitate the installation of 96 lawn alternatives, 36 rain gardens, 14 rain barrel installations, 13 permeable paver features, and 3 woodland restoration projects through grants and rainforest rebates. Each of these local projects helps capture rain where it falls, helping reduce runoff and flooding, prevent pollution, and restore water quality and stream habitat.

53 YOUTH AND EMERGING PROFESSIONAL PARTICIPANTS

4,343 PAID HOURS

Sister programs, Outdoor Youth Corps (OYC) and Outdoor Leadership Corps (OLC), offered 154.5 paid workday training experiences across 57 unique work and field trip sites throughout the St. Louis region. Together, these Crews removed more than 3.54 cubic yards of trash and 25 acres of invasive species from public lands and waterways; planted more than 294 trees and shrubs, and planted over 2,000 native plants.

ADVANCING OUR GARDEN GREEN INITIATIVES

74% OF WASTE DIVERTED FROM LANDFILLS

AT GARDEN EVENTS | 7 EVENTS

The Garden dedicated staff and volunteer time to Zero Waste efforts for Garden signature events. Across these seven events, 5.8 tons of food waste and compostable service ware was diverted from landfills. A combined 60,931 visitors attended Garden events that featured a Zero Waste station.

371.25 HOURS OF ZERO-WASTE AMBASSADOR VOLUNTEERS

SERVICE TO THE GARDEN | \$11,806 WORTH OF VOLUNTEER SERVICE

Volunteers contributed significantly to Garden sustainability projects including supporting the Green Living Festival, serving as Zero Waste Ambassadors at signature events, helping to sort recycling behind the scenes and more!

261 MEGAWATTS OF SOLAR ENERGY PRODUCED

EQUIVALENT TO THE ELECTRICITY USED BY 23 HOMES IN ONE YEAR

The Garden continued to evaluate its use of energy, energy efficiency, and renewable energy systems. The Garden's many solar arrays including systems installed on the Jack C. Taylor Visitor Center, Commerce Bank Center for Science Education, Kemper Center pergola, and Brookings Interpretive Center serve as part of the Garden's commitment to renewable energy. The Commerce Bank Center for Science Education building received its ENERGY STAR recertification, demonstrating how this building meets strict energy performance standards, saves money, and reduces greenhouse gas emissions compared to similar non-certified buildings. Looking forward, the new Sustainability Data Coordinator will allow for more tracking of energy production, consumption, and efficiency in the future.

38.7 TONS OF GREENHOUSE GAS EMISSIONS REDUCED BY USE

OF GARDEN'S EV STATIONS | OVER 3,300 UNIQUE USERS

The amount of use across all 10 Garden EV charging stations highlights the growing adoption of EVs and their positive environmental impact. The Garden also worked with Ameren Missouri to provide its first electric vehicle Ride and Drive event and two virtual EV 101 workshops to celebrate National Drive Electric Week.

7.21 TONS OF PULP PAPER, ELECTRONICS, AND OTHER MISCELLANEOUS ELECTRONICS WASTE RECYCLED RESPONSIBLY

The amount of pulp paper, electronics, and miscellaneous waste like batteries, bulbs, and cables the Garden recycled and reused in 2023 weighs nearly as much as the largest Tyrannosaurus rex which weighed in at approximately 7.7 tons!

93 GARDEN STAFF MEMBERS ATTENDING GRUB N' GREEN

LEARNING SESSIONS | 6 GRUB 'N GREEN LUNCH AND LEARNS HELD

The Garden's Grub 'n Green Lunch and Learn series provides opportunities for Garden staff to learn more about sustainable topics. This year, Grub 'n Green topics included Airly Foods & food packaging waste, Mosquito Alert & citizen science, a tour of the Garden's Climate Garden, sustainable dining with the Green Dining Alliance, wolf conservation efforts, and sustainably derived perfume and essential oils.

MISSOURI GATEWAY GREEN BUILDING COUNCIL (MGGBC)

Missouri Gateway Green Building Council (MGGBC) is a community of members, advocates and practitioners that gives voice to their commitment to improve human health, support economies and protect the environment through green buildings. MGGBC is an affiliate organization within the Sustainability Division of Missouri Botanical Garden. In 2023, MGGBC successfully launched a new brand, website, and CRM system. These changes support the organization's broad scope of work from green building education to green schools to advocacy and policy. The new logo continues to incorporate a river theme and represents the triple bottom line of sustainability, economic viability, healthy environment, and nurturing social community, while tying directly to MGGBC's new tagline: Connecting people, places, and planet.



MGGBC continued to be a valuable resource to the community and building professionals through networking and educational programming by way of unique educational events, coffee break sessions, member socials, and emerging professional & branch happy hours. Included in these 2023 educational programs was the return of MGGBC's LEED building tour, sessions on incentives available through the Inflation Reduction Act, a Carbon Positive Solutions Showcase, and a partnership with the national U.S. Green Building Council and the St. Louis Green Business Challenge on the intersection of LEED and ESG (Environmental-Social-Governance). MGGBC also co-hosted happy hours, tours, and continuing education sessions with the newly re-energized Mid-Missouri and Ozarks Branches.

In 2023, MGGBC worked to strengthen its partnership with Missouri Environmental Education Association (MEEA) and its commitment to greener, healthier schools by bringing all of its green schools programming under the Show-Me Green Schools umbrella providing better structure, resources, and recognition to support every Missouri PreK-12 school in becoming a green school – no matter their starting place. The Show-Me Green Schools umbrella includes: Green Schools Quest, Missouri Green Schools, and the U.S. Department of Education Green Ribbon Schools program.

Having launched in spring 2022, the Building Energy Exchange St. Louis (BE-Ex STL) continued to grow this year – working to address the barriers of implementing high performance building strategies and assisting building owners and operators in complying with the City of St. Louis' Building Energy Performance Standard. In 2023, BE-Ex STL launched a successful Owner & Operator series, co-hosted an ENERGY STAR Treasure Hunt at City Hall with the Mayor's Office to identify energy saving opportunities, and began participating in the Advancing Equitable Building Decarbonization pilot project.

50 EVENTS & COFFEE BREAKS | 1,052 ATTENDEES

Attendees participated in educational, networking, and community service events. Topics included the WELL Building Standard, building codes, energy efficiency, materials certificate program life-cycle assessment tools, LEED Communities and net-zero, the IRA, and more.

11 OWNER AND OPERATOR TRAININGS

BE-Ex STL hosted trainings to help owners and operators of buildings in the region learn how to implement energy efficiency and high-performance building strategies. BE-Ex STL also expanded its advisory board with five (5) new members.

3,199 STUDENTS | 249 FACULTY AND STAFF | 54 SCHOOL/MENTOR TEAMS

54 school and mentor teams participated in the 2022-2023 Green Schools Quest, implementing low and no cost sustainability projects at local schools. In addition to these teams, Quest schools engaged many community members in school sustainability projects as mentors and regional experts in sustainable solutions.

46 MISSOURI GREEN SCHOOLS RECOGNIZED | 1 GREEN RIBBON SCHOOL HONOREE

Missouri Green Schools increased participation by over 10% in 2023. Missouri Green Schools are committed to improving the health and wellness of students and staff, lowering environmental impact, and providing place-based education. Patrick Henry Downtown Academy in St. Louis Public Schools won national recognition as a U.S. Department of Education Green Ribbon awardee – the first St. Louis Public School to be recognized by this program.

OUR 2023 TEAM

Glenda Abney	Hope Gribble*
Emily Andrews*	Jaclyn Jezik
Stacy Arnold	Allison Joyce
Bryn Blackburn	Jennifer Krause
Freddie Brandt*	Jill Maes
Deborah Rogers Curtis*	Anna McAtee
Dominic Derfler	Maggie McCoy
Olivia Dove	Elijah Narimalla
Maeve Elder*	Angelina O'Donnell
Fletcher	Jean Ponzi
Tiffani Homer	Richard Reilly
Katherine Golden	Malachi Rein*
Joyce Gorrell	Jessica White

*Missouri Gateway Green Building Council staff

INTERNS AND OUTDOOR LEADERSHIP CORPS

Julia Erker	Payton Ginestra
Elijah Narimalla	Allen Jasowicz
Kate Sherman	Rose Mertens
Julia Beckner	Briana Robles
Amber Blackmon	Nate Schulhofer
Alberto Linares-Cervantes	Pam Taylor
Madi Windsor	Persia Taylor
	Kelli Walker

**SPECIAL THANKS TO OUR
WONDERFUL VOLUNTEERS
AND ZERO WASTE
AMBASSADORS!**



MISSOURI BOTANICAL GARDEN

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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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