

BIODIVERSITY

BETTER WORLD

Wild Ideas Worth Sharing

St. Louis, MO April 26-May 1, 2015

BGCl's 9th International Congress on

Education in Botanic Gardens





To discover and share knowledge about plants and their environment in order to preserve and enrich life. *mission of the Missouri Botanical Garden*

green today greener tomorrow

The Missouri Botanical Garden's mission is driven by the need to protect and conserve plants and their ecosystems. Inspiring and educating people about the benefits of being good environmental stewards through responsible use of natural resources and establishing sustainable communities locally and throughout the world is vital to achieving the Garden's mission. Likewise, the Garden strives to be a model of sustainable choices and operations throughout our facilities and at all our sites.

Visible highlights of sustainable operations start in our parking lot with large-scale rain gardens planted with native plants alongside multiple types of porous pavement systems. Food waste composting in our green-certified café, single-stream recycling of 80 percent of non-organic solid waste, and water bottle refilling stations encourage our visitors to be "green." Behind the scenes, we have implemented water-saving irrigation systems, renewable energy, and energy efficiency measures as well as an institutional green-products purchasing policy. Check out www.mobot.org/sustainability for more details.

Sustainability-in-Action during the BGCI congress includes:

- Refillable water bottles: All Congress delegates receive a reusable water bottle which can be conveniently filled at multiple drinking fountains and hydration stations. Be sure to use your bottle throughout the week.
- Lanyard: Congress lanyards are crafted with 100% bamboo fiber and recycled-content plastic hooks. And it can be reused.
- Reusable Bag: The Missouri Botanical Garden soft-sided bag will hold all your Congress goodies through the week. Afterwards, roll it up into the attached sleeve to be used later.
- Local Foods: Many menu items through the week are locally sourced from growers and vendors within the region.

- Waste Diversion: All by-products of food service will be collected throughout the week to be either recycled or composted.
- Print Program: Designed to be a permanent reference document, this booklet has been printed on 100% post-consumer recycled paper manufactured with wind power.
- Name Badge and Luggage Tag: Made to be reused. However, when it reaches the end of its useful life, be sure to recycle.
- Delegate Directory: In lieu of a printed document, electronic versions of the delegate directory will be available after the Congress.

On behalf of Botanic Gardens Conservation International and the Missouri Botanical Garden, welcome to the 9th International Congress on Education in Botanic Gardens. We're pleased to have such a strong showing of botanical garden educators and other professionals from across the U.S. and around the world participating in this year's congress, which addresses the timely and universally important theme—*Wild Ideas Worth Sharing: Biodiversity for a Better World*.

While the topic of biodiversity is increasingly finding its way into decision making beyond the field of conservation and into areas of business, technology, economics, and government, it remains a niche issue for the vast majority of citizens. Concerns about public health, security, social justice, jobs, economies, education, and governance dominate our world conversations. The foundation of each and every one of these concerns—our planet's biodiversity, upon which all life depends—too rarely gets linked to these issues. Why is that?

We hope this and other important questions are addressed this week. To be clear, however, this congress is not about why things aren't happening. It's about making things happen. It's about thinking of each of our roles and our gardens as forces of nature! It's about raising the bar for botanical garden education in ways that help each of us to motivate behavioral changes in individuals and cultural changes in the communities we serve.

We invite each one of you to think of this congress as an opportunity to reflect upon your role in this shift. What are we doing now? How could we do things differently? How could our gardens serve as stronger catalysts of change and transformation? How can each of us best apply our skills, knowledge, purpose, and passion to help improve the quality of life for all?

This year's congress has brought together in St. Louis an impressive diversity of voices, perspectives, wild ideas, and insights—more than 35 countries are represented. Take full advantage of each day to listen to your peers and other professionals, soak up the stories, challenge your colleagues, and ultimately, personalize a path forward for you, your garden, and your community.

Thank you for joining us!

Dr. Peter Wyse Jackson President, MBG

Sheila Voss Vice President, Education, MBG Dr. Paul Smith Secretary General, BGCI

Dr. Asimina Vergou Head of Education, BGCI

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About BGCI





Botanic Gardens Conservation International (BGCI) is an international organization that exists to ensure the worldwide conservation of threatened plants, the continued existence of which are intrinsically linked to global issues including poverty, human well-being, and climate change.

BGCI represents over 700 members—mostly botanical gardens—in 118 countries. It aims to support and empower members and the wider conservation community so that their knowledge and expertise can be applied to reversing the threat of extinction facing at least 25 percent of all plants.

To do this, BGCI supports the development and implementation of global policy—specifically the Global Strategy for Plant Conservation (GSPC)—at a global, regional, national, and local level. It works in a catalytic way, through its secretariat in London and regional offices in the U.S. and China, to deliver the objectives of the GSPC. In support of this objective, BGCI produces a range of resources and publications, organizes regular international gatherings, and develops a number of direct conservation programs.

Its vision is a world in which plant diversity is valued, secure, and supporting all life. To create this world, BGCI's mission is: "To mobilise botanic gardens and engage partners in securing plant diversity for the well-being of people and the planet."

About the Congress





Every day, extraordinary new species of life are discovered, named, and introduced to the world. Every day, species that none of us even know about anonymously go extinct. Every day, ecological connections and relations between all life on Earth are uncovered. *Every day*.

Biodiversity enables life as we know it, from our first breath to our last. It sustains the network that feeds, protects, employs, cures, and restores us. As one of the world's most purposeful and passionate advocates for biodiversity conservation, botanical gardens around the globe share their plants with millions of people every day. They do so in ways aimed at broadening public awareness, deepening scientific knowledge, building skills and capacity for more sustainable living, sparking interests, shaping values, and cultivating the will to act among communities.

Every day, botanical gardens do this worthy work, and as a global network of peers, we get better when we have the opportunity to connect with each other, learn from each other, challenge each other, ask big questions, and together, strengthen our impact.

In this spirit, BGCI's 9th International Congress on Education in Botanic Gardens is focused on leveraging this vibrant network of global botanical gardens to think big about how we can best engage people in biodiversity issues and look into the future of education in botanical gardens.

About the Garden





Founded in 1859, the Missouri Botanical Garden serves as a center for global botanical research, premier horticultural display, exemplary science education, and highly popular community events. Playing host to more than one million visitors each year, the Garden and its St. Louis-area sites engage a diversity of people ranging in age, ability, background, and culture through the universally resonant theme of plants and the natural world. Beyond its home base of St. Louis, the Garden's mission is at work around the world, including active science and conservation projects in North America, South America, Mesoamerica, Africa, and the Asia/Pacific region.

Garden scientists, horticulturists, and educators work to strengthen scientific expertise and build community capacity to protect and manage biodiversity before it's too late. With close to half of the world's plants facing extinction, and less than one in six yet studied for potential benefits, the stakes are higher than ever. How a community can come to value biodiversity and live more sustainably are among the defining questions of our time. The Garden's unique DNA—its science-driven mission to document and share information about plants, its history and heritage, and its unparalleled commitment to community sustainability locally and globally—equips it to enthusiastically play host to BGCI's 9th International Congress on Education in Botanic Gardens and welcome delegates from near and far.

Venues





Ridgway Visitor Center

The Ridgway Visitor Center is the main entrance to the Missouri Botanical Garden and is recognizable by its large, barrel-vaulted ceiling inspired by the Crystal Palace of the 1851 Great Exhibition in London, which Garden founder Henry Shaw visited. *Missouri Botanical Garden Blue Chandelier* by renowned glass artist Dale Chihuly hangs from the atrium. In 2012, the Garden renovated the free parking lots adjacent to the Visitor Center to feature areas of porous asphalt, concrete, and brick paving along with bioswales for parking lot rain water.

Stairs or an elevator take you to the upper level to access the Garden grounds. You can inquire about becoming Garden members at the Membership Services Desk or check with the officer stationed at the Security Desk for lost and found items. The lower level includes the 380-seat Shoenberg Theater, the Garden Gate Shop, Grigg Lobby, the Orthwein Floral Display Hall, and the Jordan Education Wing, which includes the Beaumont, Missouri, Botanical, and Garden rooms. The upper level includes Monsanto Hall, the Garden's café Sassafras, Spink Gallery, and the primary access to the rest of the Garden. See detailed maps on pages 12 and 13.





Spink Pavilion

Built in the 1920s, Spink Pavilion originally served as a public gatehouse entrance into the Missouri Botanical Garden. Stylistically inspired by traditional classical architecture, this beautifully restored pavilion is situated on the grand plaza overlooking the three large reflecting lily pools, the Miles Sculpture Garden, and the world-renowned Climatron*. Seasonal display beds along all sides of the lily pools brighten the area with flowers, including tulips, pansies, and unusual summer annuals.

A popular venue for wedding receptions and other special events, Spink Pavilion was recently renovated to increase the building's efficiency, including the heating and cooling systems, lighting and plumbing systems, roof, and interior finishes. The thermally efficient glass and aluminum storefront system allows for an unobstructed view of the outdoor landscaping and the Climatron, another of the Garden's architectural masterpieces.

During the renovation, 92 percent of the construction waste was diverted from the landfill by being recycled or repurposed, which contributed to Spink Pavilion earning its Leadership in Energy & Environmental Design (LEED) certification from the U.S. Green Building Council.

Venues





William T. Kemper Center for Home Gardening

The Center for Home Gardening opened in 1991 with the vision to be the top resource center for Missouri Botanical Garden members, visitors, and the broader St. Louis community, supporting the practical and aesthetic use of plants in and around the home through education programs, collected resources, and a variety of display gardens.

It is the home for the St. Louis Master Gardener Program, a partnership with the University of Missouri Extension, and the more than 300 active Master Gardeners who every year give to the community over 30,000 service hours. It also includes 23 demonstration gardens and an 8,000-square-foot resource center with classroom space, a demonstration kitchen, Terrace Café, and horticulture displays. Over the years, it has provided guidance to gardeners through the Plant Doctor desk, the Answer Service, the Garden's website, emails, and hundreds of expert-led gardening classes. These offerings make the Center for Home Gardening the largest nonprofit gardening center of its kind in the U.S.





Shaw Nature Reserve

Shaw Nature Reserve, a division of the Missouri Botanical Garden, is in the region known as the Ozark Border and is approximately 32 miles southwest of the Garden. Missouri is known for its rich and beautiful collection of natural habitats as well as for its complex and diverse geology. Since the 2,441-acre Reserve sits at the juncture of several of these major Midwestern habitats, the diversity of both plant and animal life is significant. This natural diversity provides an exceptional outdoor classroom for scholars and students as well as casual observers. In recognition of its worth as an educational resource, the Reserve was designated a National Environmental Education Landmark by the U.S. Secretary of the Interior in 1972.

The Missouri Botanical Garden's land purchase in 1925 began the legacy of the Reserve. Originally established as a safe refuge for the plant collection from the coal smoke pollution of the 1920s, its role in the community has evolved through the years—from nature reserve to a place to walk, hike, relax, and study nature. It has become a premier educational, research, and habitat restoration and reconstruction site. See page 66 for details about this week's field trip to Shaw Nature Reserve.

Venues





DON'T FORGET!
Enjoy a complimentary tram ride and 20% off at the Garden Gate Shop, Sassafras, and Terrace Café when you present your congress ID.

Shop, Dine, and Tour

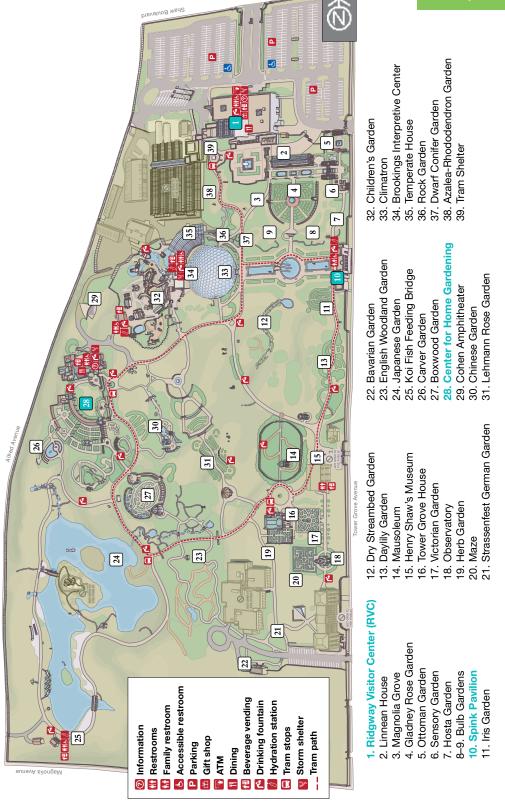
From exclusive gifts to tasty cuisine, the Missouri Botanical Garden offers a variety of affordable shopping and dining options designed to enrich your experience.

The Garden Gate Shop, located in the lower level of the Ridgway Visitor Center, is open daily from 9 a.m. to 5 p.m. It stocks home furnishings, plants, books, apparel, souvenirs, and garden accessories for all your gardening or gift needs. Proceeds benefit the Missouri Botanical Garden.

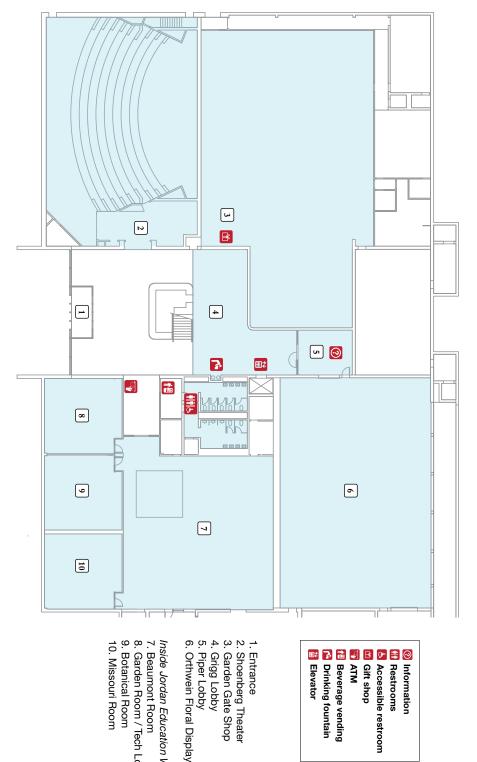
Sassafras, the Garden's café located in the uppper level of the Visitor Center, is open daily 9 a.m. to 4 p.m. and serves lunch from 11 a.m. to 3 p.m. Seasonal menus include delicious Garden-themed salads, sandwiches, soups, and snacks. Terrace Café is located in the Center for Home Gardening and features a menu of sandwiches, snacks, and desserts. It is open from 10 a.m. to 3 p.m.

Explore the Garden's history, plants, and seasonal highlights with a Garden Docent through a personalized walking tour. Tours occur daily at 11 a.m. and 1 p.m. and meet in the upper level of the Visitor Center. You can also explore the Garden with a narrated tram tour departing every hour on the hour from 10 a.m. to 4 p.m.

Missouri Botanical Garden Main Campus



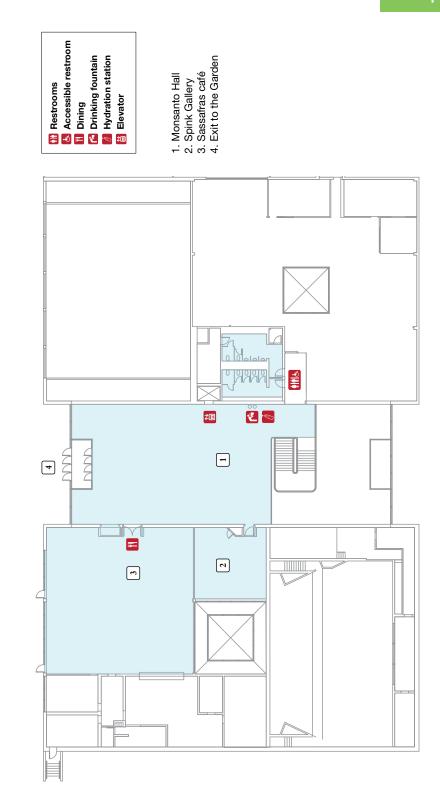
Ridgway Visitor Center (RVC) - First Floor



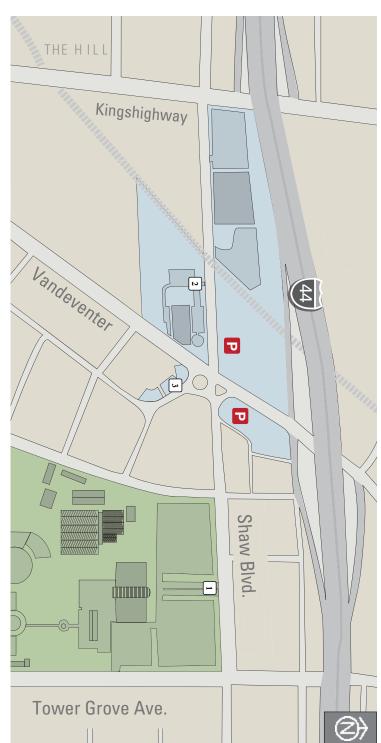
- 6. Orthwein Floral Display Hall
- Entrance
 Shoenberg Theater
 Garden Gate Shop

Inside Jordan Education Wing:
7. Beaumont Room
8. Garden Room / Tech Lounge

Ridgway Visitor Center (RVC) - Second Floor



Missouri Botanical Garden



Missouri Botanical Garden
 Monsanto Center
 Little Shop Around the Corner

Missouri Botanical Garden 4344 Shaw Boulevard St. Louis, MO 63110 (314) 577-5100

The Week At A Glance

Friday		Plenary Address		Coffee and Posters			Concurrent Sessions		9	Luncn		Closing Ceremony							C	or	ıg	
Thursday	7	Plenary Address Coffee and Posters		Coff	Concurrent Sessions		Conc	-	Lunch			Concurrent sessions		Coffee and Posters		Concurrent Sessions			: ::::::::::::::::::::::::::::::::::::	Nature Nocturne	Evening at Missouri	
Wednesday	7	Plenary Address	Coffee and Posters			Concurrent Sessions			Luncu						Biodiversity,	Bluegrass, and	Shaw Nature Reserve					
Tuesday	-	Fienary Address	Coffee and Posters			Concurrent Sessions			Lunch			Concurrent Sessions			Coffee and Posters			Concurrent Sessions				
Monday		Plenary Address	Coffee and Posters			Concurrent Sessions			Lunch			Concurrent Sessions		Coffee and Posters			Concurrent Sessions		Networking			
Sunday	ouis																					
	9–9:30 a.m.	9:30-10 a.m.	10-10:30 a.m.	10:30-11 a.m.	11-11:30 a.m.	11:30 a.mnoon	noon-12:30 p.m.	12:30-1 p.m.	1–1:30 p.m.	1:30-2 p.m.	2-2:30 p.m.	2:30-3 p.m.	3-3:30 p.m.	3:30-4 p.m.	4-4:30 p.m.	4:30-5 p.m.	5–5:30 p.m.	5:30-6 p.m.	6–6:30 p.m.	6:30-7 p.m.	7–8 p.m.	

Monday, April 27

RVC: all session rooms			Networking				6–6:45 p.m.
RVC: Shoenberg Theater	7.		RVC: Beaumont Room		RVC: MoBot Rooms		
Horticulture:	Pecha Kucha Conversations between Education and Horticulture: Planting Ideas for the Future	Pecha Kucha Conversations between Edu Planting Ideas for the Future	limate Change to	Panel session Communicating Climate Change to Diverse Audiences	Unstructured	Panel session The Importance of Unstructured Children's Play	4:30–6 p.m.
) Hall (poster showcase)) RVC: Sassafras café (coffee) and RVC: Monsanto Hall (poster showcase)	NC: Sassafras café (c	Coffee and Poster Showcase	Cof			3:30–4:15 p.m.
Depart from RVC	Depart from RVC	Depart from RVC	Spink Pavilion	Kemper Classroom	RVC: MoBot Rooms	RVC: Spink Gallery	
MBG Tour Experience the Japanese Garden	MBG Tour The Garden's Conservatories	MBG Tour Sustainability at the Garden	World Café MBG Teen Network: Energizing Next-Gen Thinkers, Doers, and Problem-Solvers	Workshop Crucial Role of Volunteers as Garden Interpreters	Workshop The Future of Botanical Gardens Education: Developing a Strategy	Panel Innovative Public Garden Engagement Activities	2–3:30 p.m.
RVC: Orthwein Floral Display Hall	RVC: Orti		Lunch				12:30–2 p.m.
Depart from RVC	Depart from RVC	Spink Pavilion	RVC: Beaumont Room	RVC: Spink Gallery	RVC: MoBot Rooms	RVC: Shoenberg Theater	
MBG Tour The Garden's Herbarium and Peter H. Raven Library	MBG Tour The Garden's William L. Brown Center and Sacred Seeds Program	Workshop What Plants Are You Wearing Today?	Workshop Enlisting Formal Educators as Partners in Conservation through Citizen Science	Panel Developing Audiences to Gardens through Art	Panel Innovative Ways to Connect Children with Nature	Panel Conserving, Preserving, and Training the Next Generation of Botanical Garden Horticulturists	11 a.m 12:30 p.m.
Monsanto Hall (posters)	RVC: Sassafras café (coffee) and RVC: Monsanto Hall (posters)	RVC: Sassafr	Coffee and Posters				10–10:45 a.m.
RVC: Shoenberg Theater		Dr. Asimina Vergou,	Plenary Address Featured Speakers: Dr. Peter Wyse Jackson, Dr. Paul Smith, Dr. Asimina Vergou, and Sheila Voss	ร: Dr. Peter Wyse ปล	Featured Speaker		9 –10 a.m.

Tuesday, April 28

RVC: Shoenberg Theater	onsanto Hall (posters)	MBG Tour The History and Heritage of the Missouri Botanical Garden	Depart from RVC	RVC: Orthwein Floral Display Hall	MBG Tour The Garden's Living Collections	Depart from RVC	dall (poster showcase)	MBG Tour Behind the Scenes of Lantern Festival	Depart from RVC
·	RVC: Sassafras café (coffee) and RVC: Monsanto Hall (posters)	Workshop Voicing the Garden	Spink Pavilion	RVC: Orthw	MBG Tour The Garden's Conservatories	Depart from RVC) and RVC: Monsanto F	MBG Tour Behind the Scenes of Lantern Festival	Depart from RVC
วเกิด์ท, and Catherine	RVC: Sassafras ca	Workshop Inclusive Programming: Engaging Visitors of All Abilities	RVC: Botanical Room		Workshop Education Hopes and Dreams of U.S. Gardens	Kemper Classroom	RVC: Sassafras café (coffee) and RVC: Monsanto Hall (poster showcase)	MBG Tour Behind the Scenes of Lantern Festival	Depart from RVC
Plenary Address , Dr. Rebeca Quiñonez-F	Coffee and Posters	Panel INQUIRE: International Collaborations for Inquiry-Based Science Education	RVC: Spink Gallery	Lunch	Workshop Phenomenological Approaches in Learning with Plants	Spink Pavilion	Coffee and Poster Showcase	Panel Agents of Change: Reconnecting People to Nature through Biophilic Design and Art	Spink Pavilion
Plenary Address Featured Speakers: Dr. Peter Raven, Dr. Rebeca Quiñonez-Piñón, and Catherine Werner	Coff	Panel Visitors, Educators, and Innovative Methods in Botanical Gardens: Perspectives from Educational Research	RVC: Shoenberg Theater		Workshop A New Sustainable Educational Toolbox for Botanical Gardens, Parks, and Arboreta	RVC: Beaumont Room	Coffee an	Panel Native Plants and Environmental Culture	Kemper Classroom
		Panel Engaging the Public: Science Communication Initiatives at Botanical Gardens	RVC: Beaumont Room		Panel Knowledge Management: Bring the Information Highway to Garden Pathways	RVC: Botanical Room		Panel Getting Ahead of the Roadblocks in Plant Science Education	RVC: MoBot Rooms RVC: Shoenberg Theater
		Panel Botanical Gardens, Technology, and Innovative Ways to Connect People with Nature	RVC: Missouri Room		Panel Interpretation Worth Sharing: Inspiring and Educating for a Better World	RVC: Missouri Room		Panel Training for Employment in Botanical Gardens	RVC: MoBot Rooms
9–10 a.m.	10–10:45 a.m.	11a.m 12:30 p.m.	10:30	12:30-2 p.m.	2-3:30 p.m.		3:30-4:45 p.m.	5-6:30 p.m.	

Wednesday, April 29

	1:30–9 p.m.	12:30– 1:30 p.m.		11 a.m 12:30 p.m.	10–10:45 a.m.	9–10 a.m.
			Learning RVC: Shoenberg Theater	Panel Staff and Student Exchanges for Professional Development and		
			AVC: Beaumont Room	Panel Working with Communities to Improve		
Workshop Bu Perspe	Biodiver Field		Spink Pavillion	Workshop CSI Missouri: A Forensic Biology Workshop		Featured
Workshop Becoming the Woods: A Forest School Perspective on the Making of Citizens	Biodiversity, Bluegrass, and Bar-B-Que Field Trip to Shaw Nature Reserve	Lunch	Botanical Garden RVC: Botanical Room	Workshop The Arabian Desert's Botanical Bounty: Poems to Celebrate Cotor's Ourspic	Coffee and Posters	Plenary Address Featured Speaker: Dr. Akpezi Ogbuigwe
Forest School Citizens	r-B-Que serve		Education Kemper Classroom	e of nsory	RVC: Sassafra	gbuigwe
		RVC: Orth	RVC: Missouri Room	shop g with Your	RVC: Sassafras café (coffee) and RVC: Monsanto Hall (posters)	73
		RVC: Orthwein Floral Display Hall	Spink Gallery	Technology Showcase	Monsanto Hall (posters)	RVC: Shoenberg Theater

Thursday, April 30

Plenary Address Egatured Speakers: Dr. Bainer Busemann, Dr. Caw, Equiper Marky Cornell	ee) and RVC	Workshop Glimate Building Models to Build Leaders in Biodiversity The Understanding: Practical Conservation: Working He Approaches to Pollination Together for Botanical Pe Garden Environmental Lite	Neither Classicom Spring raving NVC. Beautiful North Separation NVC. Corthwein Floral Display Hall	Workshop MBG Tour M Green The Passionate Fact: The Garden's Living Ce Storytelling Science Collection for Garden's Living Garden's Living Garden's Living	Kemper Classroom Spink Pavilion Depart from RVC Depart from RVC	Coffee and Poster Showcase RVC: Sassafras café (coffee) and RVC: Monsanto Hall (poster showcase)	Workshop Workshop nce Increasing Youth Grow W Environmental The Dev Engagement through of Educ sessful Location-Based and Cor search Mobile Games Success s Learning	RVC: MoBot Rooms RVC: Beaumont Room Kemper Classroom Spink Pavilion	Communities in Nature Nocturne at the Missouri History Museum Featured Speaker: Dr. Bernadette Lynch	Norld Café Engaging Vour Community: Who's Missing from Vour Garden?
Featured Speakers: Dr	- ממנת כל כלימה כלי	Works Connecto Company	NVC. Splink Gallery	Morkshop Botanical Gardens Inspiring a (Building Generations, Revolution Communities, and Careers	RVC: Beaumont Room Kemp	Cof	Works Bringii to Life to Cre Maints Educa Collab	RVC: Spink Gallery RVC: N	Communities in Natur Featured	World Coff Back
		Panel Innovative Uses of Bis Online and Computer- Cc Mediated Teaching to the Expand Audiences and Bc Facilitate Learning Ou			RVC: MoBot Rooms		·	RVC: Shoenberg Theater		
9–10 a.m.	10–10:30 a.m.	10:45 a.m.– 12:15 p.m.	12:15–1:45 p.m.	1:45– 3:15 p.m.		3:15–4 p.m.	4:15– 5:30 p.m.		6–10 p.m.	

Friday, May

4–6 p.m.	3–5 p.m.	2–3 p.m.	1–2 p.m.		11:30 a.m 1 p.m.	10:30– 11:15 a.m.	9–10:30 a.m.
				RVC: Shoenberg Theater	Panel BiodiverseCity St. Louis: Cultivating Community Partnerships		
				Spink Pavilion	Panel Planting Seeds During the Early Childhood Years		
Coach Transp	Explore			RVC: Spink Gallery	Panel Education Research in Botanical Gardens: Case Studies from China and Austria		Featured Speakers
Coach Transportation to Airport or Host Hotel	Explore the Garden on Your Own	Closing Ceremony	Lunch	RVC: Beaumont Room	Workshop Interpretive Master Plan Development at Public Gardens: Three Case Studies from Finland, Australia, and the United States	Coffee and Posters	Plenary Address Featured Speakers: Gil Penalosa and Dr. Joe E. Heimlich
Hotel				RVC: MoBot Rooms	Workshop Tackling "Organizational Inertia" and Perceptions about the Social Role of Botanic Gardens	RVC: Sassafras c	E. Heimlich
		RV	RVC: Orthw	Depart from RVC	MBG Tour Experience the Japanese Garden	RVC: Sassafras café (coffee) and RVC: Monsanto Hall (posters)	RV
		RVC: Shoenberg Theater	RVC: Orthwein Floral Display Hall	Depart from RVC	MBG Tour Center for Home Gardening	onsanto Hall (posters)	RVC: Shoenberg Theater

Panel Session

In a panel session, the convener introduces the speakers who then present their views on a particular topic. There will be time for discussion with the participants at the end of the session.

Workshop

This type of session is structured for in-depth exploration of one topic. The session is practical and interactive, and actively involves all the participants. The workshop can be a science demonstration, a game, a show, or a short training course.

Roundtable Session

This session has an extended number of speakers (4–20). Each speaker sits at a roundtable and presents his or her idea. This is followed by an in-depth discussion at each table. Time is left at the end to bring together all the different ideas discussed at each table. This session also requires a convener to facilitate the session and reconvene the participants at the end.

World Café

Participants are seated around tables, and a series of conversational rounds begin. At the end, the whole group gathers to share outcomes. Find more information on what a World Café is and guidelines on how to organize one by visiting www.theworldcafe.com and searching for Café To Go or at www.theworldcafe.com/pdfs/cafetogo.pdf

Pecha Kucha

This fast-paced session has six presenters who each talk about a given topic using 20 slides for 20 seconds each to illustrate a point. The session will conclude with a group discussion.

Project Poster Showcase

This is a showcase of education projects and other public engagement activities, each described in a poster and presented by one participant.

Technology Showcase

An enhanced poster showcase, this session will exhibit innovative technologies being applied for public engagement and education. Presenters will demonstrate their work with posters, stands, and tablets. Delegates will have the opportunity to try the technology out for themselves, and the session will end with a group discussion.

Congress Keywords

Unlike most conferences, thoughts and discussions at the 2015 BGCI Education Congress have been conceptualized around keywords and not themes/tracks. In particular, this congress has been designed to rally around common areas of interest, with the intent of enabling cross-over learning, innovative idea sharing and generation, and renewed energy and cohesion around shared purpose. The following keywords reflect universal priorities botanical garden educators share, regardless of a garden's size, resources, or geographic location:

TL = Teaching and Learning

SC = Science Communication

TE = Technologies for Engagement and Learning

SV = Strategy and Future Vision for Greater Impact and Change

CE = Social Inclusion and Community Engagement

RE = Research and Evaluation

PD = Professional Development

The keywords illustrate major issues we will be discussing in the congress and are pertinent to education in botanical gardens in a variety of ways:

- Teaching techniques and learning experiences (TL) in botanical gardens vary greatly, from highly structured experiences for school groups to adult and family self-guided activities facilitated by the garden interpretation.
- Different types of science communication (SC) showcase the value of plant science to society, enable the public to interact with the scientists, and aim to inspire the next generation of botanists.
- Fast-pace advancements in technologies (TE) enable new ways for gardens to engage with the public on-site and allow them to reach a wider online community.
- Botanical gardens develop new strategies and future vision (SV) and build new partnerships that aim to bring change at a large scale.
- Community engagement and addressing issues of social inclusion (CE) and equality
 are crucial if botanical gardens aspire to stay relevant to the whole spectrum of
 modern society.
- Different methods of research and evaluation (RE) provide evidence of the impact of botanical gardens' education work and inform practice to better meet people's needs and expectations.
- Educators, whether well-established or in the early days of their careers, benefit from professional development (PD). Attending courses, becoming part of a professional learning community, participating in conferences, and networking at events all contribute to improving practice.

Monday, April 27

Plenary Address | 9 to 10 a.m.

Shoenberg Theater

An Evolving Agenda for Botanical Garden Education in a Rapidly Changing World

Dr. Peter Wyse Jackson

Botanical gardens worldwide have been at the forefront of efforts made over the last few decades to raise public awareness of the value of biodiversity while also becoming global leaders in safeguarding plant diversity, particularly as champions for the Global Strategy for Plant Conservation. Early botanical garden education generally focused on providing information about botanical gardens and plant science, but our collective focus today has shifted toward promoting environmental protection, plant conservation, and more sustainable living. This shift has been driven by our increased knowledge about the threats to biodiversity, consequences of its loss, and the role that better-informed governmental policies and institutional strategies play in achieving successful, long-lasting biodiversity conservation. Nevertheless, we are increasingly aware of what is required for stemming biodiversity loss on a local-to-global scale: behavioral change by individuals, organizations, and governments, with a focus on the economic, socio-political, demographic, and cultural factors affecting biodiversity and quality of life for all. Featuring examples of some of the ways the Missouri Botanical Garden is adopting this approach, this presentation argues that the role of botanical gardens in motivating and supporting such behavioral change is both our greatest challenge and most significant opportunity for transformative impact in the coming years.

Building a Global System for the *Ex Situ* Conservation of All Plant Diversity: The Role of BGCI in Educating Policy Makers, Plant Conservation Practitioners, and Broader Society

Dr. Paul Smith

A botanical garden-centered global system for the *ex situ* conservation and management of all plant diversity would aim to collect, conserve, and cultivate samples from all of the world's plant species as an insurance policy against their extinction in the wild and as a source of plant material for human innovation, adaptation, and resilience. This aim is based on the assumption that there is no technical reason why any plant species should become extinct given the array of conservation and management techniques available to the botanical garden community (seed banking, cultivation, micropropagation, etc.). To build this system, BGCI will work with its members to:

- Promote the role and importance of botanical gardens to policy makers and funders.
- Build capacity within the botanical garden community to conserve plant diversity, prioritizing rare, threatened, and useful plant species.
- Build capacity to value, conserve, and manage plant diversity in wider society.

Giving examples of how BGCI already works with its members to educate policy makers, plant conservation practitioners, and the general public, Dr. Smith will set out ways in which the botanical garden community might agree on a common vision for such a global system, and how BGCI's support might be scaled up accordingly.

Welcome Remarks and Congress Logistics

Dr. Asimina Vergou and Sheila Voss

Monday

Posters and Coffee 10 to 10:45 a.m.

Posters on display in Monsanto Hall Coffee served in Sassafras café

Sessions | 11 a.m. to 12:30 p.m.

PANEL (TL, PD)

Conserving, Preserving, and Training the Next Generation of Botanical Garden Horticulturists

Shoenberg Theater

Globally, fewer individuals are pursuing horticulture and botany as a profession, leading to a serious skills shortage in botanical garden horticulturists. Botanical gardens across the globe are faced with the significant challenge of succession planning in their staff, while fewer programs in the world are actively recruiting, promoting, and highlighting the importance of this profession. Select gardens in North America (Longwood Gardens, Missouri Botanical Garden, The New York Botanical Garden, and Niagara Parks) and the United Kingdom (Royal Botanic Gardens Edinburgh and Royal Botanic Gardens, Kew) are combining innovative and immersive experiential learning opportunities with hands-on curriculum to provide sufficiently broad knowledge of horticultural and botanical practices. Graduates of these programs are equipped with the experience, knowledge, and skills to communicate the value of plants to various audiences. The panel will bring different perspectives on horticultural training.

Convener: Brian Trader, Longwood Gardens

Panelists: Ian Edwards, Royal Botanic

Gardens Edinburgh
Charles Hunter,
Niagara Parks Botanical Garden
Charles Yurgalevitch,
The New York Botanical Garden
Tim Hughes, Royal Botanic
Gardens, Kew
Andrew Wyatt,

Missouri Botanical Garden

PANEL (TL, SV)

Innovative Ways to Connect Children with Nature

Missouri and Botanical Rooms

While education programming at botanical gardens aims to improve children's knowledge about the natural world, many programs overflow with information-rich activities, resulting in little or no time for thoughtful reflection, hands-on play, discovery, imagination, or inquiry. Too often, these programs create only a superficial connection between students and the outdoors, sacrificing quality of experience and personal growth for curriculum coverage and outcomes. This session will reflect on programs that are helping children build an appreciative rapport with nature. Robin Moore and Nilda Cosco will discuss putting "nature play" theory into practice, while Odelia Aroshas will describe a discovery trail at Jerusalem Botanical Gardens. Kit Harrington will share stories from the Fiddleheads Forest School. while Alexander Amirtham will describe eco-club schools within India's GREENS Biodiversity Sanctuary. Lastly, Emma Ausford will share how dramatic play can cultivate environmental connectedness. Panelists will also discuss challenges and barriers faced in the creation of innovative programming.

Convener: Emma Ausford,

Devonian Botanic Garden

Panelists: Robin Moore.

North Carolina State University

Nilda Cosco,

North Carolina State University

Odelia Aroshas,

Jerusalem Botanical Gardens Kit Harrington, University of

Biodiversity Sanctuary, India

Washington Botanic Gardens Alexander Amirtham, GREENS

Emma Ausford.

Devonian Botanic Garden

PANEL (TL, CE)

Developing Audiences to Gardens through Art

Spink Gallery

Art in botanical gardens takes many forms—from giant sculpture exhibitions by international artists to eco-craft workshops and art activities for kids. Discover how four botanical gardens use art to grow new audiences, increase visitor numbers, and broaden visitor experience. Ireland's largest outdoor sculpture exhibition is one of the National Botanic Gardens' most popular annual events. Chicago Botanic Garden's adult art education program attracts people who would not normally visit the garden. In Mexico, bucolic tales are used to convey key concepts and core values using a network of artists and storytellers, while in Xishuangbanna Tropical Botanical Garden, a series of plant art activities have been developed to help the increasingly urbanized population re-engage with plants.

Convener: Felicity Gaffney, National Botanic Gardens of Ireland

Panelists: Beth Pinargote,

Chicago Botanic Garden
Emiliano Sánchez Martínez,
Cadereyta Regional Botanic Garden
Ximin Wang, Xishuangbanna
Tropical Botanical Garden

WORKSHOP (PD, TL)

Enlisting Formal Educators as Partners in Conservation through Citizen Science Beaumont Room

The Urban Advantage (UA) program in New York City is a collaboration between eight science-rich cultural institutions and the NYC Department of Education. A major component of the program is professional development for middle-school science teachers. This workshop will introduce a new

UA model for using native plant collections at botanical gardens to learn about the impact of climate change on native plant communities and ecosystems. Participating UA teachers engage in activities designed to deepen their understanding of current research, provide an introduction to phenology, introduce online citizen science projects, guide teachers in drawing conclusions about changing ecosystems, and underscore the importance of preserving native plant ecosystems. Participants will explore the strategies used and learn about the benefits and challenges of enlisting educators as both agents of change and allies in the fight for maintaining the biodiversity of native plant communities and ecosystems.

Convener: Candyce Johnson,

Brooklyn Botanic Garden

WORKSHOP (TL, SC) What Plants Are You Wearing Today? Spink Pavilion

In this workshop, we will share experiences from Madrid and Oslo on how to engage audiences with what their clothes and textiles are made of to make the public more aware of how important plants are. We will demonstrate how we present the plant fiber theme to the public, for example, through traditional methods to make fibers from plants as with the preparation of fibers from flax, through drying, removal of seeds, retting, scutching, heckling, and spinning. Participants will have the opportunity try these techniques for themselves as well as seeing how we present the dying process.

Convener: Kristina Bjureke, *Natural History Museum, University of Oslo*

Contributors: María Bellet Serrano, Real Jardín Botánico Madrid

Program

Monday

MBG TOUR

Behind the Scenes:

The Garden's William L. Brown Center and Sacred Seeds Program

Tour departs with a Garden Docent from the Ridgway Visitor Center, maximum of 20.

Conveners: Rainer Bussmann, Director
Ashley Glenn, Sacred Seeds
Program Manager and American
Indian Ethnobotany Program
Manager

MBG TOUR

Behind the Scenes: The Garden's Herbarium and Peter H. Raven Library Tour departs with a Garden Docent from the Ridgway Visitor Center, maximum of 20.

Conveners: Jim Solomon,

Associate Curator and Curator of the Herbarium Doug Holland, Director of the Peter H. Raven Library

Lunch | 12:30 to 2 p.m.

Orthwein Floral Display Hall

Sessions 2 to 3:30 p.m.

PANEL (TL, SV)

Innovative Public Garden Engagement Activities

Spink Gallery

Engaging society with plants and the environment is essential to ensure sustainability for the future. This session will highlight innovative methods that can be employed to engage various stakeholders and encourage behavioral change. First, Tara Moreau will share examples from the Sustainable Communities Field School in Canada, modeled after the United Nations Food and Agriculture Organization's Farmer Field Schools. Tamar Arbel-Elisha will describe Ramat Hanadiy Memorial Garden

and Nature Park's recently launched outreach initiatives in collaboration with neighboring villages and towns to address environmental concerns on a regional scale. Zhe Zhang will share Shanghai Chenshan Botanical Garden's efforts to promote harmony between human development and nature in one of the fastest-growing cities in the world. James Locklear from Omaha's Lauritzen Gardens will detail a recently launched plant conservation program focused on the Great Plains region of the U.S. All attendees will gain a broader world view of community conservation efforts.

Convener: James Locklear, Lauritzen Gardens

Panelists: Tara Moreau,

University of British Columbia
Tamar Arbel-Elisha,
Ramat Hanadiv Memorial Gardens
and Nature Park
Zhe Zhang, Shanghai Chenshan
Botanical Garden
James Locklear, Lauritzen Gardens

WORKSHOP (SV, TL)

The Future of Botanical Gardens Education: Developing a Strategy

Missouri and Botanical Rooms

While complex global issues like food, energy, poverty, and social justice can be overwhelming, botanical gardens are well-positioned to mobilize people and organizations to creatively address and overcome the biggest challenges of our time. BGCI wants to consult botanical gardens and the organizations it serves, and to co-develop its new education strategy. We will look at current trends in gardens around the world and the wider museum sector as well as opportunities and global challenges. Do you have a vision for the future of education in botanical gardens? Have you been developing your own education strategy? Have you been reflecting on what you could do differently

and what organizational change or external support you need? Join us to discuss, debate, and imagine the focus of botanical garden education for the future and how BGCI can help make the journey possible. In this interactive workshop, Paul Smith, Secretary General of BGCI, and the BGCI education team invite you to share your ideas to help us shape our future as an organization that develops the capacity of botanical gardens in public engagement.

Convener: Paul Smith, BGCI

Panelists: Asimina Vergou, *BGCI*Liliana Derewnicka, *BGCI*Paul Smith, *BGCI*

WORKSHOP (TL, CE) Crucial Role of Volunteers as Garden Interpreters

Kemper Classroom

Volunteers can be crucial to the performance of a botanical garden, with some institutions' volunteer-to-staff ratio reaching 9:1. At Fairchild Tropical Botanic Garden (FTBG), volunteers cover many areas including interpreting the Garden's programs and collections. The process of involving volunteers as Garden spokepersons or as we like to call them, Garden Ambassadors, is not an easy one. This workshop is designed to share with participants one of the models that FTBG uses to support volunteers to carry out the Garden's mission. During the session we will discuss the steps taken to prepare Garden Ambassadors for FTBG's Weekend Educator Program. The process begins with the Volunteer Services Department's identifying the right person for the job and introducing them to the Garden's mission through core classes. Next, the Visitor Experience Department staff creates and presents training on various topics for the Weekend Programs, implements and evaluates the program, and

reinforces volunteers' knowledge through continuous training.

Convener: Gaby Orihuela,

Fairchild Tropical Botanic Garden

WORLD CAFÉ (TL, CE) MBG Teen Network: Energizing Next-Gen Thinkers, Doers, and Problem-Solvers

Spink Pavilion

How do we best engage teens so that they grow into environmentally literate, conservation-minded citizens and leaders? Join this World Café to explore questions about how best to inspire the next generation of scientifically minded adults who practice stewardship. Learn about Missouri Botanical Garden's (MBG) Teen Network, designed to create a stronger social connection and sense of belonging among participants. Through this program, the Garden ensures experiences are mission-focused, integrates teenfriendly technologies, provides leadership opportunities, enables choice, and ensures a stable staff mentoring connection. Help us explore ideas for engaging teens by adding your questions and ideas to the mix.

Convener: Meg Hoester,

Missouri Botanical Garden

Contributors: Lydia Toth,

Shaw Nature Reserve
Aileen Abbott,
Shaw Nature Reserve
Eric Swanson,
Missouri Botanical Garden
Jennifer Laquet,
Missouri Botanical Garden

Program

Monday

MBG TOUR

Behind the Scenes:

Sustainability at the Garden

Tour departs with a Garden Docent from the Ridgway Visitor Center, maximum of 20.

Convener: Jean Ponzi, EarthWays Center Green Resources Manager

MBG TOUR

Behind the Scenes:

The Garden's Conservatories

Tour departs with a Garden Docent from the Ridgway Visitor Center, maximum of 15.

Convener: Deb Lalumondier, Senior Horticulturist

MBG TOUR

Experience the Japanese Garden

Tour departs with a Garden Docent from the Ridgway Visitor Center, maximum of 15.

Convener: Greg Cadice, Senior Horticulturist

Posters and Coffee 3:30 to 4:15 p.m.

Poster Showcase in Monsanto Hall Coffee served in Sassafras café

POSTER SHOWCASE

Botanical Acclimation Garden of Rabat for Genetic Resources Conservation, Education, and Research (RE, TL)

The botanical garden in Rabat, (JEB-Rabat) reopened in June 2013 and continues to play the role for which it was created in 1914; it is a place for relaxation and appreciation of nature. The Botanical Acclimation Garden is a genetic reservoir of national and introduced plants. In 1919, its mission was to introduce, acclimate, diversify, and develop national and exotic crops. The scientific dimension of the National Institute for Agricultural Research (INRA) has enabled the development of JEB which includes a strategy for earning national

and international recognition. Today the garden is used in INRA's research, which seeks to encourage scientific research, innovation, appreciation of plants, learning sessions, and collaboration.

Convener: Meriem Mdarhri Alaoui, National Institute for Agricultural Research, Morocco

Expanding a Botanical Garden's Role in Building Sustainable Communities by Connecting All Audiences (CE, SV)

Missouri Botanical Garden's EarthWays Center embraces the mission of the Garden to preserve and protect plants, but with a slightly different focus. The EarthWays Center approach focuses on human behavior and generating momentum for positive change toward building a sustainable future through action in the community, including K–12, higher education, and other nonprofit audiences, as well as municipalities, homeowners, professionals in the built environment, businesses, and green industry professionals. Congress participants will learn new ideas to use when integrating sustainability in their core mission and ways to grow their role within their community beyond traditional botanical community members.

Convener: Katherine Golden, Earth Ways

Center, Missouri Botanical Garden

From Macro to Micro: A Journey through the Plant World (TL, CE)

The project "From Macro to Micro: A Journey through the Plant World" aims to give visitors, including people with sensory impairments, access to the plant world. The project has three facilities that bring the public closer to the plants, starting from a broader perspective (macro) going to the more detailed (micro). This includes a "Trail of the Senses" with informational signs and guiding

ropes, The Sensory Garden, which consists of flowerbeds harboring medicinal and edible plants, and the Model Hall with microscopic plant structures represented by 22 models illustrating the anatomical structure at different levels of observation.

Convener: Flávia Faria, Museum of Natural History and the Botanical Garden of the Federal University of Minas Gerais

Contributors: Alessandra A. Resende; Luiz Carlos Vianna, Jr.; Rosy Mary S. Isaias; Naiara N. S. Zanetti; Carlos E. Braga; and Alisson B. Teixeira

An Interpretive Cart on Biomimicry: How Do We Use What We Learn From Nature? (TL, SC)

Nature contains many "talents" that people are learning to mimic. The process of biomimicry has created many of the everyday items we use and is developing into a field of study for scientists to create ideas for further investigation. The Missouri Botanical Garden is developing a mobile educational cart for multiple areas that contains three different lessons on botanical biomimicry. Geared for differing age groups—Velcro® for preK-4, Lotusan® paint for ages 3-9, and artificial photosynthesis for ages 6–12—lessons vary from items already in widespread use to emerging technology. This new interpretive cart is an example of using interactive science lessons to teach the concept of biomimicry. When it debuts this year, visitors will be challenged to come up with their own biomimicry idea. During the poster showcase session, delegates will be encouraged to offer insights and ideas for this new visitor engagement initiative.

Convener: Jim Biggs, Earth Ways Center, Missouri Botanical Garden

Sessions 4:30 to 6 p.m.

PANEL (TL, SV)

The Importance of Unstructured Children's Play

Missouri and Botanical Rooms

Evidence is growing that shows how outdoor play, especially within green environments, benefits children's social, behavioral, and physical development. This session will compare different approaches for enabling nature play at botanical gardens and arboreta. Some gardens are concerned about potential damage to collections as a result of unsupervised play, as well as the repercussions if a child is hurt. Panelists will discuss how risks are managed and integrity of their sites maintained. Kylie Regester will describe how play-based philosophy comes to life at the Royal Botanic Gardens Melbourne, and Sandy Tanck will describe an effort in Minnesota to cultivate community values around "nearby nature-time, every day." Panelists will also be asked how these efforts enhance their engagement with local communities.

Convener: Ian Edwards, Royal Botanic Garden Edinburgh

Panelists: Kylie Regester, Royal Botanic Gardens Melbourne Sandy Tanck, University of Minnesota Landscape Arboretum

PANEL (SC, CE) Communicating Climate Change to Diverse Audiences

Beaumont Room

Climate change poses an existential threat to the flora and ecosystems botanical gardens showcase and conserve. With unique credibility as trusted, nonpartisan science and conservation educators, botanical gardens are well-positioned to inspire people to engage in climate change solutions. Kayri Havens will share how knowing your audience and

Program

Monday

leveraging the power of scientific agreement will yield effective communication with elected officials and the public. Adrián Cerezo will describe a new approach by emphasizing how the U.N. Sustainable Development Goals can be applied to climate change interpretation. Lynne Nemeth will explain outreach efforts that use cutting-edge research in Arizona to engage a variety of audiences. Sonja Skelly will share how an innovative interpretation program at Cornell allows the public to be a part of a climate change demonstration garden. APGA's Sarah Beck will moderate this discussion of how botanical garden programs and partnerships enhance climate change awareness and focus on solutions.

Convener: Sarah Beck, American Public
Gardens Association

Panelists: Kayri Havens,

Chicago Botanic Garden
Adrián Cerezo, Saint Louis Zoo
Lynne Nemeth, The Arboretum at
Flagstaff
Sonja Skelly, Cornell Plantations
Sarah Beck, American Public
Gardens Association

PECHA KUCHA

Conversations between Education and Horticulture: Planting Ideas for the Future

Shoenberg Theater

Horticulture and Education are two great strings to the botanical garden's bow. Nurturing dialogue among educators and horticulturists is essential to cultivating a synergy between the departments. What are the benefits of establishing collaborations between education and horticulture, to the individuals, their departments, the organization as a whole, and of course, the garden's visitors? What makes an effective

collaboration between horticulture and education? And how do we take these relationships forward? Peter Wyse Jackson leads a fast-paced Pecha Kucha session to answer these questions with the help of botanical garden senior management, horticulturists, and educators from China, the U.S., Australia, Spain, U.K., and Finland. Ximin Wang, Romi Ige, Phil Petitt, María Bellet Serrano, Julia Willison, and Pertti Pehkionen will each present 20 slides for 20 seconds on collaborative projects between education and horticulture, discuss the benefits that come from close relationships of this nature and how to develop them, and go over the challenges involved.

Convener: Peter Wyse Jackson,

Missouri Botanical Garden

Panelists: Ximin Wang, Xishuangbanna
Tropical Botanical Garden
Romi Ige, Brooklyn Botanic Garden
Phil Petitt, Royal Botanic
Gardens Sydney
María Bellet Serrano,
Real Jardín Botánico Madrid
Julia Willison, Royal Botanic
Gardens, Kew
Pertti Pehkionen, Finnish Museum
of Natural History, (LUOMUS),
Kaisaniemi Botanic Garden

Networking | 6 to 6:45 p.m.

Ridgway Visitor Center, all session venues

Tuesday, April 28

Plenary 9 to 10 a.m.

Shoenberg Theater

Welcome and Introductory Remarks

Dr. Peter H. Raven (pre-recorded video message)

Monarch Butterfly Conservation: Thinking Globally, Acting Locally

Dr. Rebeca Ouiñonez-Piñón and Catherine Werner

The recovery of the iconic monarch butterfly, with its unique migratory pattern, depends largely on two objectives: (1) restoring milkweeds and nectar plants along the migration route from Canada to Mexico and (2) protecting the pine-oyamel forest in central Mexico, where monarchs overwinter. Accomplishing these objectives will require close collaboration between many partners in Canada, the U.S., and Mexico. Forests for Monarchs is an eight-year-old program that has planted more than four million native trees within the Monarch Butterfly Biosphere Reserve. The City of St. Louis launched Milkweeds for Monarchs: The St. Louis Butterfly Project in 2014 with the dual goals of creating monarch habitat in the urban core and making monarch butterflies accessible to more people. These two programs are prime examples of entities across the continent which are working both independently and collaboratively to expand monarch habitat and awareness in all stages of the butterfly's migration.

Posters and Coffee 10 to 10:45 a.m.

Posters on display in Monsanto Hall Coffee served in Sassafras café

Sessions 11 a.m. to 12:30 p.m.

PANEL (TE, SV)

Botanical Gardens, Technology, and Innovative Ways to Connect People with Nature

Missouri Room

Does the active use of mobile devices such as Apple and Android phones and tablets for interpretation in a botanical garden augment or distract from visitors' connection with nature? This session will explore the intersection between technology and understanding of the natural world. Hussein Keshani will advocate for technological tools for better-organized information presentation. Dene Grigar will explicate the definition and inescapability of technology and point out deficiencies and lost opportunities from not availing ourselves of all learning modes. Daniel Stern will then provide an example of how mobile technology can be used to enhance the information provided by botanical gardens and engage visitors with science. Finally, Lee Foote will describe the distractions and risks of superficiality and the compromised learning experience resulting from viewing through technology done poorly.

Convener: Lee Foote,

Devonian Botanic Garden

Panelists: Hussein Keshani,

University of British Columbia Dene Grigar, Washington State University Vancouver Daniel Stern, American Public

Gardens Association

Program

Tuesday

PANEL (SC, TL)
Engaging the Public:
Science Communication Initiatives
at Botanical Gardens

Beaumont Room

As sites of conservation and research, with millions of visitors worldwide, botanical gardens are perfectly placed to engage with the public and showcase their plant science expertise. Our public activities have been increasing in recent years, with an ever-growing drive to raise the profile of our research and its relevance to visitors. This panel session will showcase science communication activities at botanical gardens around the world to provide insight and top tips. Kaunas Botanical Garden in Lithuania is involved in a number of large-scale science communication projects, including the national science festival. Vilnius University Botanical Garden, also in Lithuania, works with collaborators to host a range of events that encourage interaction between scientists and visitors. Fairchild Tropical Botanic Garden in the U.S. has explored the role citizen scientists can play in research. The University of Oxford Botanic Garden and Harcourt Arboretum deliver public engagement and science communication training courses for researchers.

Convener: Kate Castleden, University of Oxford Botanic Garden

Panelists: Vida Mildaziene,

Kaunas Botanical Garden Silva Zilinskaite, Vilnius University Botanical Garden Carl Lewis,

Fairchild Tropical Botanic Garden Kate Castleden, University of Oxford

Botanic Garden

PANEL (TL, RE)

Visitors, Educators, and Innovative Methods in Botanical Gardens: Perspectives from Educational Research Shoenberg Theater

This session highlights the importance of research in botanical gardens and the variety and breadth of research work in different countries around the world. The researchers will present some key issues characterizing the relationship between people and plants in museums, botanical gardens, and public gardens. In particular, they will examine:

- The role of public gardens in addressing food sovereignty, cultural representation and engagement, capacity building, and social inclusion;
- Evaluation practices of Inquiry-Based Science Education (IBSE) for renewing science teaching in and out of the school;
- The role of botanical gardens as a resource to engage families with science;
- Children's propensity for biophilia and biophobia, and their attitudes toward conservation.

Panelists will outline their varying methods and highlight positive changes in professionals' knowledge and ability to improve the relationship between people and plants that comes with effective educational programs and rigorous evaluation practices.

Convener: Weizhe Zhang, Xishuangbanna Tropical Botanical Garden

Panelists: Weizhe Zhang, Xishuangbanna Tropical Botanical Garden Naomi Haywood, King's College London

PANEL (TL, SV)

INQUIRE: International Collaborations for Inquiry-Based Science Education Spink Gallery

The EU FP7-funded INQUIRE project: "Inquiry-Based Teacher Training for a Sustainable Future" was developed and implemented to support 14 botanical gardens and natural history museums to establish an international collaborative learning network. It also aimed to expand their understanding of Inquiry-Based Science Education (IBSE) while developing, implementing, assessing, and revising training courses for teachers and educators. The presenters in this panel will give insight into various aspects of INQUIRE. Suzanne Kapelari will outline the cultural psychology design-based research that was applied to learn more about how international educational reform-based projects need to be structured and implemented in order to initiate change in educational practice. Alla Andreeva, Costantino Bonomi, and Serena Dorigotti will describe how they put the INQUIRE ideas into practice when developing and delivering their courses at Museo delle Scienze (MUSE) in Italy.

Convener: Suzanne Kapelari, *Austrian Education Competence Center Biology, University of Vienna*

Panelists: Suzanne Kapelari, Austrian
Education Competence Center
Biology, University of Vienna
Costantino Bonomi, MUSE
Serena Dorigotti, MUSE
Alla Andreeva,
M. V. Lomonosov Moscow State
University Botanic Garden

WORKSHOP (CE, TL) Inclusive Programming: Engaging Visitors of All Abilities Botanical Room

As public botanical gardens, our collective role is to engage and inspire all visitors about plants and our natural world. But what steps are we taking to ensure visitors of all abilities can experience our gardens in meaningful and enriching ways? Fifteen percent of the world's human population, or an estimated 1 billion, live with a disability. They are the world's largest minority (www.un.org). How do we make our public programs more inclusive for all participants? How do we modify or adapt a program to work with an individual's abilities and not focus on the disability? In this handson workshop, participants will learn and discuss ways to engage people of all abilities while creating two botanically based projects. Participants will learn how to meaningfully facilitate flower arranging, nature printing, and nature journaling for diverse audiences.

Convener: Jennifer Smith,

Missouri Botanical Garden

Contributors: Donald Frisch,

Missouri Botanical Garden

Jeanne Carbone,

Missouri Botanical Garden

Program

Tuesday

WORKSHOP (CE, TE) Voicing the Garden

Spink Pavilion

Voicing the Garden began as a one-year oral history project to collect, celebrate, and share the stories of the people behind the plants those who have made, grown up in, or simply enjoyed the Cambridge University Botanic Garden—resulting in an archive of over 60 interviews. But Voicing the Garden has taken on a communal life of its own as paintings, poems, short stories, musical compositions, artifacts, and family photographs of visits continue to pour in. Exploring the online archive (www.voicingthegarden.com) reveals diverse experiences including how the botanical garden got some of the country's finest horticulturists off to their professional start and how the garden has been a lifechanging place. This workshop will discuss and employ oral history techniques learned during the project to engage participants with some of the Voicing project outcomes and look at how social media technologies can broaden the range of voices speaking up about their experiences.

Convener: Juliet Day, Cambridge University
Botanic Garden

Contributor: Felicity Plent, Cambridge University Botanic Garden

MBG TOUR

Behind the Scenes: The History and Heritage of the Missouri Botanical Garden Tour departs with a Garden Docent from the Ridgway Visitor Center, maximum of 30.

Conveners: Andrew Colligan, Archivist
Tyler Nowell,
Historical Interpretation Specialist

Lunch | 12:30 to 2 p.m.

Orthwein Floral Display Hall

Sessions 2 to 3:30 p.m.

PANEL (TL, SV)

Interpretation Worth Sharing: Inspiring and Educating for a Better World

Missouri Room

Today, botanical gardens are called upon to be global leaders in developing a sustainable world, emphasizing conservation and the responsible use of resources. Collectively, botanical gardens are obliged to better engage, involve, and empower our millions of visitors in promoting conservation and sustainability in homes and communities. This session will showcase three unique approaches to engaging a diverse visitor base using the best resource available: our gardens. Isabel Elena Muñoz Galvis will talk about the Cali Botanical Garden's efforts to create an openair laboratory for the exploration of life based on local stories, myths, and legends to help visitors understand how we live today. Abby Hird will present on the Care for the Rare program which offers free and versatile sign templates and a growing library of ready-touse species signs for every garden to talk about the conservation value of public gardens. Jennifer Wolff will also present an initiative by Missouri Botanical Garden called Natural Connections, a comprehensive package of visitor engagement tools using informal science education and "free-choice" learning techniques. Join us as we discuss these and other programs to explore the wonders of the natural world within our garden walls.

Convener: Abby Hird, BGCI U.S.

Panelists: Isabel Elena Muñoz Galvis, Jardín Botánico de Cali Jennifer Wolff, Missouri Botanical Garden

PANEL (SV, TE)
Knowledge Management:
Bring the Information Highway to
Garden Pathways

Botanical Room

In the information age, we quickly become overwhelmed with the vast amount of data stored in disparate locations across our organizations—from visitor services, marketing, and development to research, horticulture, and collections. This session will provide ideas for reining it all in and maximizing opportunities. The Morton Arboretum team defines knowledge management within the context of the public garden field and the opportunities it presents for packaging information to attract new audiences. Sue Wagner will provide an introduction to managing knowledge, disseminating the knowledge for use by a variety of audiences, and how to begin. Sai Ravichandran will demonstrate digital technology that results in systems deployed in gardens globally. Carissa Dougherty will share her experiences leading the Arboretum's knowledge sharing and management program, and working with staff to implement new initiatives. Attendees will be invited to join an ongoing best practices conversation over the course of the next year.

Convener: Sue Wagner,

The Morton Arboretum

Panelists: Sue Wagner, *The Morton Arboretum*Sai Ravichandran, *The Morton Arboretum*Carissa Dougherty, *The Morton Arboretum*

WORKSHOP (TL, SV)

A New Sustainable Educational Toolbox for Botanical Gardens, Parks, and Arboreta Beaumont Room

This workshop explores experiential educational programming elements necessary for a toolbox that can be used by any botanical garden, arboretum, or park to bring sustainability to its programs. Ideas discussed include preparation of curricula to optimize tools for thinking about and experiencing our natural environment; marketing studies; formulation of Specific, Measurable, Achievable, Realistic, and Timed (SMART) goals concomitant with evaluation methods; advisory councils composed of informed citizens from across the program's geographic range; and prioritizing of course subjects and marketing. Changes in practices by participants should contribute toward conservation and renewability of resources, reducing carbon footprint, and overall sustainability.

Convener: John J. Pipoly III, UF-IFAS/Broward

County Extension Education, Parks

and Recreation Division

WORKSHOP (TE, TL) Phenomenological Approaches in Learning with Plants

Spink Pavilion

Today, learning at all levels occurs mostly in technology-shaped environments devoid of living organisms. In this workshop, presenters will share new approaches designed to refocus education on the living world in its entirety. This includes bringing back living plants to children's rooms, fostering plantbased learning, and testing new forms of teaching using live plants. To complement the opportunities present in botanical gardens, a combination of live-plant based tools has been developed to overcome the ever-widening gap

Tuesday

between virtual and real life:

- BRYO: a single-plant model that's been tested with 15,000 children over the past two years
- The bottle garden: a semi-closed system suitable for primary and secondary school
- The ecosphere: a closed system suitable for secondary school

This workshop will orient participants to these easy-to-use instruments and demonstrate how they can deepen learning while also cultivating connections between gardens and youth.

Convener: Marcel Robischon,

Humboldt Universität zu Berlin

Contributor: Dieter Franz Obermaier

WORKSHOP (SV, TL)

Education Hopes and Dreams of U.S. Gardens: Focus Group Discussions on Developing Global Interactive Education Tools via BGCI

Kemper Classroom

Do you want to share your best educational ideas and lessons? Do you want to learn new techniques from others? This session will engage participants in small focus group discussions on how to exchange their best lesson plans and techniques in a library BGCI U.S. would curate for members. The results of the discussions will be aggregated and disseminated. The most effective ideas will be implemented by BGCI to continue to improve information sharing within the garden community in the U.S.

Convener: Kate Sackman, BGCI U.S.

MBG TOUR

Behind the Scenes:

The Garden's Conservatories

Tour departs with a Garden Docent from the Ridgway Visitor Center, maximum of 15.

Convener: Deb Lalumondier, Senior Horticulturist

MBG TOUR

Behind the Scenes:

The Garden's Living Collections

Tour departs with a Garden Docent from the Ridgway Visitor Center, maximum of 15.

Conveners: Andrew Wyatt,

Vice President of Horticulture

Becky Sucher,

Living Collections Manager Derek Lyle, Nursery Supervisor

Posters and Coffee 3:30 to 4:45 p.m.

Poster Showcase in Monsanto Hall Coffee served in Sassafras café

POSTER SHOWCASE

"Shelf Life"—Grow Your Own (TL, SC)

This poster will give delegates an overview of a visually striking educational display that links our lives to the plants we use. Based on the award-winning Shelf Life project devised by Michael Holland at Chelsea Physic Garden, where plants are grown in their corresponding product packaging, delegates will benefit from ideas and "top tips" on what works and what doesn't from over 10 years of experience. The Shelf Life project is also useful for demonstrating geographical origins of foods, nutritional facts, biodiversity—both within and between plant families, as well as "upcycling."

Convener: Michael Holland, Chelsea Physic Garden

MBG Scout Programs: Creating Mission-Driven Programs, Utilizing Garden Resources (TL, CE)

The Missouri Botanical Garden offers a diversity of scout programs that advance its mission while aligning with the Girl Scout and Boy Scout organizations. Topics range from plant science and gardening to sustainability and green living. Using Garden grounds as extended classrooms, programs feature outdoor exploration, making or building, demonstrations, and plantings. Broader audiences are engaged by offering experiences in different formats, including large group award and enrichment programs, badge workshops, skill center days, and overnight experiences. This poster summarizes lessons learned and the impact of experiences related to scout programming.

Convener: Kerri Liming,

Missouri Botanical Garden

The Role of Problem-Solving Frameworks in Creating Positive Effective Sustainable Solutions With Greater Impact (TL, RE)

With the increasing number of environmental problems facing our world, many students feel helpless to affect positive change. The Missouri Botanical Garden's EarthWays Center empowers students through programming that challenges them to affect real-world change by problem-solving and implementing action projects. To ensure student success, EarthWays uses a simple problem-solving framework known as the 8-Step Action Plan, enabling students to hone skills needed to effectively process information, build awareness of an issue, collaborate with others, make informed and effective action plans, and evaluate their impact. This poster will explore the use of the 8-Step Action Plan to address issues of plant conservation and ecological restoration.

Convener: Katherine Golden, *Earth Ways Center, Missouri Botanical Garden*

The Botanical Garden Goes to School (TL, SV)

This project was created by the Brazilian Botanical Gardens Network and deployed at the Natural History Museum and Botanical Garden of the Federal University of Minas Gerais. Its objective is to establish an educational process with the school community to promote the role of botanical gardens in biodiversity conservation and environmental sustainability. The methodology consists of two steps: the garden goes to the school and the school goes to the garden. First, the botanical garden exposes the project to the school manager and teachers. Then activities are carried out: teacher education, collective construction of sub-projects, and the implementation of sub-projects with students.

Convener: Alessandra Resende, Natural History Museum and Botanical Garden of the Federal University of Minas Gerais

Contributors: Flávia Santos Faria, Pedro Henrique Ribeiro da Silva, and Túlio César Teixeira Ferreira

The Changing Face of a Nigerian Foremost University Botanical Gardens (TL, SV)

The University of Ibadan Botanical Gardens was established in 1948. In recent years, the Gardens have transcended being a field laboratory for teaching and research purposes only. In the light of this, upgrading the status of the Gardens became necessary to realize its full potential and benefits to the public. The face-lifting of the Gardens plays an important role in educating and inspiring the public about the usefulness of plants in ethnobotany. The Gardens now serve as recreational, excursion, and lecture centers to the general public as well as being a field laboratory for our students and pupils from other schools.

Convener: Taiye Fasola, *University of Ibadan Botanical Gardens*

Tuesday

Regional Eco-Educational Importance and Potential of Batumi Botanical Garden (TL, CE)

Batumi Botanical Garden was founded in 1912 with its main function being to introduce subtropical flora and promote their economic and decorative application. After the post-Soviet crisis in 2009, the flow of visitors began to grow in number considerably. In 2014, the number of visitors reached 200,000. Regretfully, the Garden lacks schoolchildren and student visitors, caused by the absence of educational activities. The program of eco-educational events is a new sphere of activities for the Garden. Its aim is to raise awareness among young people and the general public of the importance of biodiversity and environment protection.

Convener: Tamaz Darchidze,

Batumi Botanical Garden

Sessions | 5 to 6:30 p.m.

PANEL (PD, SV)

Training for Employment in Botanical Gardens

Missouri and Botanical Rooms

The advancement of botanical institutions relies on the skills and passions of the individuals involved and on high-quality training and public engagement. This session will highlight the wealth of knowledge and passion in the horticultural sector, with panelists relaying their experiences to guide others in the development of training programs. Jessica Farmer, Adult Education Supervisor at the University of Washington Botanic Gardens, worked with over 1,300 attendees in 2014. Tracy Jessen of Halifax Public Gardens has experienced the realities of a career as a horticulturist. Anne-Cathrine Scheen, with experience in systematic botany and teaching plant science, feels the botanical garden management program at the Royal Botanic Gardens, Kew, will be of great benefit to her current role at

the Stavanger Botanic Garden. Neville Evans aspires to be a director of a botanical garden and is currently a Diploma Student at Kew.

Convener: Christopher Dunn,

Cornell Plantations

Panelists: Jessica Farmer, University of
Washington Botanic Gardens
Tracy Jessen, Halifax Public Gardens
Anne-Cathrine Scheen,
Stavanger Botanic Garden
Neville Evans,
Royal Botanic Gardens, Kew

PANEL (TL, SV) Getting Ahead of the Roadblocks in Plant Science Education

Shoenberg Theater

Botanical gardens are uniquely positioned to promote the formal study of plant science and address environmental issues. Yet we can never assume that students and teachers have the basic knowledge to understand them. In this session, Amy Padolf of Fairchild Tropical Botanic Garden (FTBG) and Philip Turvil from Royal Botanic Gardens, Kew, will share program highlights that demonstrate how botanical gardens are working to make plants relevant and interesting to young people. Amy will talk about FTBG's botany magnet high school, where students conduct botanical research and take college-level botany courses. Philip will discuss Kew's Grow Wild campaign, inspiring communities across the U.K. to transform local spaces by growing and enjoying native plants. Through projects like these, botanical gardens can get ahead of education roadblocks and engage with audiences who are considered difficult to reach.

Convener: Amy Padolf,

Fairchild Tropical Botanic Garden

Panelists: Amy Padolf,

Fairchild Tropical Botanic Garden

Philip Turvil,

Royal Botanic Gardens, Kew

PANEL (TL, CE)

Native Plants and Environmental Culture Kemper Classroom

Mexican botanical gardens are fundamental to implementing the Mexican Strategy for Plant Conservation 2012-2030, with most now dedicated to its objectives. This panel session will illustrate how they are working together to accomplish this and discuss the most imminent challenges for environmental education in Mexico. Beatriz Maruri Aguilar will present an overview of the native plant collections groundwork that Mexican botanical gardens have built and how this is being utilized in informal education. Norma Edith Corona Callejas will outline Mexican botanical gardens' environmental education action plan, and Verónica Franco Toriz will showcase activities that aim to encourage a plant conservation culture and reduce "plant blindness."

Convener: Beatriz Maruri Aguilar, Cadereyta Regional Botanical Garden

Panelists: Beatriz Maruri Aguilar, Cadereyta
Regional Botanical Garden
Norma Edith Corona Callejas,
Jardín Botánico Francisco Javier
Clavijero Instituto de Ecología
Verónica Franco Toriz, Xíitbal neek'
Regional Botanic Garden, Yucatán
Center for Scientific Research (CICY)

PANEL (SV, CE)

Agents of Change: Reconnecting People to Nature through Biophilic Design and Art Spink Pavilion

Increasingly, people live in environments far removed from what is considered "natural." resulting in a disregard for other species and the important connections between all life on Earth, which has ramifications for environmental and human health. Biophilic design is a powerful foundation for institutions to affect long-term behavioral changes. Richard Piacentini will demonstrate efforts at Phipps Conservatory and Botanical Gardens to incorporate art and biophilic design. Sonja Bochart will lead a guided meditation to help focus the group on ways to connect with the spirit of a building and appreciate the connection of art and beauty in the built environment. Emily Kalnicky will present an overview of research related to biophilia, connection to nature, and behavior change.

Convener: Richard Piacentini,

Phipps Conservatory and
Botanical Gardens

Panelists: Richard Piacentini,

Phipps Conservatory and

Botanical Gardens

Sonja Bochart, SmithGroupJJR

Emily Kalnicky,

Phipps Conservatory and

Botanical Gardens

MBG TOUR

Behind the Scenes of Lantern Festival Tour departs with a Garden Docent from the

Ridgway Visitor Center, maximum of 45.

Convener: Lynn Kerkemeyer, Special Events and Exhibit Manager

Wednesday, April 29

Plenary 9 to 10 a.m.

Shoenberg Theater

Educating for Sustainability and the Missing Human

Dr. Akpezi Ogbuigwe

Over the years, the basic lessons that can be learned from the wild have been entrenched in environmental education. Principle 19 of the Stockholm Declaration 1972 provides that "Education in environmental matters, for the younger generation as well as adults, giving due consideration to the underprivileged, is essential in order to broaden the basis for an enlightened opinion and responsible conduct by individuals, enterprises and communities in protecting and improving the environment in its full human dimension." Springing from the challenges of our current civilization, as nations contend with the growing pains of social, economic, political, and environmental malaise in one form or the other, we have "created" other forms of "education" in response, such as education for sustainable development, sustainability education, global citizenship education, climate change education, etc. What are we in search of? Could it be people that will live with a sense of responsibility for their decisions with respect for the rights of the next person and future generations? Yet if we fail at the simplicity of environmental education—learning from the diversity of nature—how do we hope to infuse the more complex dimensions of sustainability, climate change, and global citizenship education into the way we learn? All these are about securing the future of our environment and people through who we are and the way we teach, research, learn, and live. Can we indeed educate for a generation that will move in this direction? Are we that generation?

Posters and Coffee 10 to 10:45 a.m.

Posters on display in Monsanto Hall Coffee served in Sassafras café

Sessions | 11 a.m. to 12:30 p.m.

PANEL (PD, TL)

Staff and Student Exchanges for Professional Development and Learning Shoenberg Theater

Staff and student exchange programs present tremendous opportunities for professional development and shared learning. This session will cover the specifics of staff and student exchange programs, memoranda of agreement, visa requirements, funding, and benefits to the institutions and persons involved from a variety of perspectives. Doug Needham will describe Longwood Gardens' Bilateral Staff Exchange Memorandum of Agreement and the "Great Gardens of the World TRIAD Fellowship" program. Ed Schneider and Yuri Naumtsev will present two perspectives on an international garden partnership of cooperation, training, and staff exchange between the Minnesota Landscape Arboretum and the Botanical Garden of Tver State University.

Convener: Douglas Needham, Longwood Gardens

Panelists: Douglas Needham,

Longwood Gardens

Ed Schneider,

Minnesota Landscape Arboretum

Yuri Naumtsev, Botanical Garden of

Tver State University

PANEL (CE, SV) Working with Communities to Improve Well-Being

Beaumont Room

Botanical gardens all over the world are using their skills and resources to change people's lives. This session will illustrate, with case studies from four different continents, how botanical gardens are delivering projects that improve the well-being of participants. Phil Pettit will explain how The Community Greening Program at Royal Botanic Gardens Sydney is supporting communities of low socioeconomic status to improve their local environment. Haijia Chu will then discuss Wuhan Botanic Garden's project in which garden staff provide plants and training to local people to reduce the dust haze caused by pollution, which can have detrimental health effects. Finally, Armand Randrianasolo and John Collins Onyango will outline how both the Missouri Botanical Garden and the Maseno University Botanic Garden are improving the livelihoods of communities in Africa by training them to sustainably utilize plants to generate income. BGCI's strategic program Communities in Nature is encouraging botanical gardens to grow their social role. This session will demonstrate how botanical gardens are already working in a way that is in line with BGCI's aspirations.

Convener: Liliana Derewnicka, BGCI

Panellists: Phil Pettitt.

Royal Botanic Gardens Sydney
Haijia Chu, Wuhan Botanic Garden
Armand Randrianasolo,
William L. Brown Center,
Missouri Botanical Garden
John Collins Onyango, Maseno
University Botanic Garden

WORKSHOP (TL, SC) CSI Missouri: A Forensic Biology Workshop

Spink Pavilion

A murder has been committed at Missouri Botanical Garden! You have heard about the finding of a body and have seen the location. What we are asking you to do now is become a forensic biologist and perform some simple tests to see if you can decide which of the four suspects the police will charge with murder. During this workshop, using scientific equipment, you will be solving a crime using some handy clues (pollen, hairs, mud, and stains) from nature. This will give you all you need to create your own forensic biology workshop and have some fun, too.

Convener: Michael Holland, Chelsea Physic Garden

WORKSHOP (TL, SC)

The Science of Taste: A Sensory Approach to Botanical Education

Kemper Classroom

This interactive workshop will explore the direct importance of sensory experiences in plant science and botanical education along with its broader applications to genetics, cultural identity, and health. This workshop will guide participants through a series of activities to better understand their own unique sense of taste and smell, and how this varies based on a range of cultural and heritable factors. We will discuss the genetic basis of sensory perception, with a review of recent research and common misconceptions, and demonstrate the use of tinctures and plant extracts as botanical teaching tools for all ages.

Convener: Ashley DuVal,

Shoots and Roots Bitters

Wednesday

WORKSHOP (TL, SC)

The Arabian Desert's Botanical Bounty: Poems to Celebrate Qatar's Quranic Botanic Garden

Botanical Room

Anticipating the opening of Qatar's UNESCOsponsored Quranic Botanic Garden, I have been drafting poems featuring the ecology and flora of this tiny country. Since 2004, I have visited Qatar's desert regularly to observe and record its flora. As a PhD candidate at Lancaster University, I have chosen two questions to drive my research: Why have devout Muslims strayed far from the environmental ethic of the Ouran? And what can poetry and botanical gardens accomplish that a scientific treatise cannot? During this workshop, participants will be provided a selection of poems with botanical themes. We will explore the importance of gardens to poets and their readers. We also will explore the relationship between gardens and memory. Participants will be asked to write poems inspired by the Missouri Botanical Garden, their own gardens, or other gardens of which they hold fond memories.

Convener: Diane Woodcock, Virginia Commonwealth University in Qatar

WORKSHOP (TL, SC) Seeing with Your Pencil

Missouri Room

This summer, the Hortus botanicus in Leiden held an exhibition on prehistoric plants.
To enhance it, we hosted the "Oerplanten Atelier," a program of workshops on drawing, photography, etching, and monotype. Creating artwork forces one to look very carefully at the object you are portraying. During the workshops people began to ask questions (Why are these holes here?, Why does this part have this shape?), took photos of the spores they were studying

through the binocular microscope, and left gripped by the previously undiscovered world of plants. This interactive workshop will look at the relationship between art and nature and address the question of how art can be used to engage people with it. This workshop is suitable for maximum of 25 participants.

Convener: Hanneke Jelles,

Hortus hotanicus Leiden

TECHNOLOGY SHOWCASE (TL, TE) Using the Plant Heroes Program to Engage Students in Protecting Plants from Serious Pests and Diseases Spink Gallery

As part of its role in the Sentinel Plant Network, the American Public Gardens Association manages the Plant Heroes program (www.plantheroes.org) to engage young audiences in protecting the trees in their communities from serious plant pests and diseases. Integrating creative storytelling, online interactive learning resources, and citizen science for youth, Plant Heroes also houses a curriculum hub of lesson plans that educators can filter by age, subject, skills, and learning standards. This poster will provide delegates with an overview of Plant Heroes and share examples of how gardens have integrated the program into their work with local students and teachers.

Convener: Daniel Stern, *American Public Gardens Association*

Contributor: Annemarie Nagle

TECHNOLOGY SHOWCASE (TL, TE) Interactive Taxonomic Key for Identification of Urban Trees in Belo Horizonte, Minas Gerais, Brazil Spink Gallery

Urban trees have great importance for the urban ecosystem and the quality of human life. We aim to develop an educational workshop on identifying urban trees that occur in the Museum of Natural History and the Botanical Garden of the Federal University of Minas Gerais using an interactive taxonomic key to encourage public awareness of the trees' importance. We recorded the location and identity of the urban trees and built a database with vegetative morphological information, diagrams, and pictures. For the construction of the interactive taxonomic key, software that enables web users to perform interactive online identification was used. The pilot key, which includes 10 species, has been developed and is available online (www.icb.ufmg.br/chaveonline/chaves/ eudicotiledoneas.html).

Convener: Flávia Faria, Museum of Natural History and the Botanical Garden of the Federal University of Minas Gerais

Contributors: Ariadne Dias Caldas Lopes and João Renato Stehmann

TECHNOLOGY SHOWCASE (TE, CE) Community Mapping: Changing Perspectives and Shifting Norms Spink Gallery

Given the plethora of competing social and economic issues, what is the best way to engage communities on the topic of local biodiversity? This poster highlights a series of Garden-facilitated teacher workshops conducted in 2014. After visiting the Missouri Botanical Garden to see ecological landscape solutions and ideas, teachers used Google Earth and other resources to map their schoolyards in the context of their community. Participants were prompted with questions and concepts about local flora and fauna, landscape functions, current realities and challenges, and their own capacity to act. This mapping and visioning exercise was designed as replicable and scalable for a variety of audiences.

Convener: Sheila Voss,

Missouri Botanical Garden

EarthWays Center

Contributors: Jennifer Hartley,

Missouri Botanical Garden Meg Hoester, Missouri Botanical Garden Eddie Jones, Litzsinger Road Ecology Center Katherine Golden,

Wednesday

TECHNOLOGY SHOWCASE (TE, TL) Chacras de Coria Botanical Garden: Experiences to Expand Education Spink Gallery

The mission of Chacras de Coria Botanical Garden is predominantly educational. Aiming to expand public understanding of plants growing in Mendoza, a geo-referenced map of the specimens in the collections of the Botanical Garden of Chacras de Coria was made. On the website it will be possible to explore the evolutionary path, along which different species appear. This virtual Botanical Garden will have botanical descriptions, photos, videos, illustrations, and uses of each species, and will encourage people to visit the Garden and spread its mission. The map will provide a model for increasing communication with the public through online media.

Convener: Iris Peralta,

National University of Cuyo

TECHNOLOGY SHOWCASE (TE, TL) ARBOLAPP: An Interactive App for Tree Identification

Spink Gallery

A new app for smartphones to identify trees of the Iberian Peninsula has been launched. Aimed at the general public and schools, it expects to be a very useful tool for learning about trees and vegetation. The app covers a total of 109 trees of Spain and Portugal (Iberian Peninsula). It has two ways to approach the species: a guided (dichotomic) key and an open character key, both of which have attractive drawings to illustrate features and are written in accessible language. It also contains descriptions of every species, pictures, and maps of their location along with a helpful glossary.

Convener: María Bellet Serrano,

Real Iardín Botánico Madrid

Amat de León Arce, Esther García Guillén, Eduardo Actis Monserrat, Mónica Lara de Vigo, and Violeta Vicente Olmo

Contributors: Felipe Castilla Lattke, Elena

Lunch | 12:30 to 1:30 p.m.

Orthwein Floral Display Hall

Field Trip 2 to 9 p.m.

Biodiversity, Bluegrass, and Bar-B-Que Shaw Nature Reserve

See page 66 for event and session details.

Thursday, April 30

Plenary 9 to 10 a.m.

Shoenberg Theater

Welcome, Introductory Remarks, and Presentation of the 7th William L. Brown Award for Excellence in Genetic Resource Conservation to Dr. Cary Fowler

Dr. Rainer Bussmann, Director, William L. Brown Center

This award recognizes the outstanding contributions of an individual in the field of genetic resource conservation and use. It is administered by the William L. Brown Center (WLBC) at the Missouri Botanical Garden and is made possible through a generous endowment from the Sehgal Family Foundation, in cooperation with the family of Dr. Brown. Dr. Brown was a distinguished internationally recognized scientist, businessman, and humanitarian. Over the course of five decades, he devoted himself to the collection, preservation, understanding, and sharing of plant genetic resources in order to help meet the global demand for food. The William L. Brown Award recognizes an individual whose efforts and achievements reflect a concern for those issues that were important to Dr. Brown.

Preparing the Table: Climate, Conservation, and Agriculture

Dr. Cary Fowler, Global Crop Diversity Trust

Our global food system today faces a historically unprecedented combination of challenges, not the least of which has to do with climate. Should we take it for granted that our agricultural system will supply ever greater quantities of food? Or, should we instead begin to prepare to feed a world of 8 billion or more people? What tools and what options do we have? What can we learn from history? And what can we do concretely today to prepare agriculture for what lies ahead?

A World-Class Legacy

Marly Cornell, Author, Seeds for Change

Seeds for Change documents how Suri and Edda Sehgal, refugees who escaped dangerous and difficult circumstances as children, came to America as young adults from India and Germany respectively, met, fell in love, and went on to have more astonishing experiences as talented and visionary business leaders, generous philanthropists, and proud Americans. As a crop scientist, seedsman, and agricultural visionary, Suri became a respected and pivotal figure in the development of the global hybrid-seed industry. He and Edda have shared their resulting good fortune with those in need around the world. Their personal history is a chronicle of remarkable events and people, and their enduring lifelong commitment to helping others is their family legacy. Author Marly Cornell will share this couple's story and legacy brought to life through the work of the Missouri Botanical Garden's William L. Brown Center.

Note: *Seeds of Change* book signing in the Ridgway Visitor Center lobby immediately following this keynote session.

Posters and Coffee 10 to 10:30 a.m.

Posters on display in Monsanto Hall Coffee served in Sassafras café

Thursday

Sessions | 10:45 a.m. to 12:15 p.m. PANEL (TE, TL)

Innovative Uses of Online and Computer-Mediated Teaching to Expand Audiences and Facilitate Learning

Missouri and Botanical Rooms

There is great opportunity in innovative, web-based technologies to connect with learners far beyond our regional locations. These online technologies allow us to easily provide information to those that might never otherwise learn about the importance of horticulture, sustainability, and environmental stewardship. The panel will discuss and demonstrate a variety of online technologies for delivering high-quality horticulture programs and botanical information to expanded audiences. Gregory Kenicer and Jane Robertson of Royal Botanic Garden Edinburgh, will discuss PropaGate, a virtual learning environment for delivering distance and blended learning courses. Lori Trexler of Longwood Gardens will describe how live sessions are delivered to classrooms using interactive video conferencing. Elizabeth Farnsworth of the New England Wildflower Society will demonstrate an online tool for identifying native and naturalized plants of northeastern North America.

Convener: Susan Caldwell,

Longwood Gardens

Panelists: Gregory Kenicer, Royal Botanic

Garden Edinburgh

Jane Robertson, Royal Botanic

Garden Edinburgh

Lori Trexler, Longwood Gardens

Elizabeth Farnsworth,

New England Wild Flower Society

PANEL (CE, TL)

Biocultural Conservation in the Context of Botanical Garden Education and Outreach Programs

Spink Gallery

Just as floristic diversity is eroding, so too are cultural and linguistic diversity. Botanical gardens are uniquely positioned to actively engage in understanding the broader impact of environmental change to biocultural diversity to achieve biological, cultural, and economic resilience. This session will address biocultural diversity and conservation in the context of botanical garden education and outreach programs from various international perspectives. Speakers from the U.S. will relate their experiences working with cultural diversity in an urban context and how they engage the diverse civic community in biocultural awareness. This awareness includes an understanding of ethnobotany and ethnomedicine, with consequences related to improved public health, a point that will be made by two very different garden programs in the U.S. and Uganda. An example from Ireland, recording the uses of plants, illustrates how gardens can rekindle traditional knowledge, heritage, and folklore. Finally, greenspaces and playgroups provide an opportunity for garden education programs to link with indigenous populations and elders, as will be described from garden programs in Australia.

Convener: Christopher Dunn, *Cornell University*

Panelists: Susan Lacerte,

Queens Botanical Garden
Harreit Kokugonza,
Tooro Botanical Gardens
Peter Wyse Jackson,
Missouri Botanical Garden
Sharon Willoughby, Royal Botanic
Gardens Melbourne

WORKSHOP (CE, SC) Connecting Climate to Communities Kemper Classroom

Despite the increasing urgency to address climate change, engaging the pubic in climate action continues to be a challenge not just for botanical gardens, but also for the broader conservation community. It is especially important to activate minority and low-income communities, as they are underrepresented in the mainstream environmental movement, yet bear a disproportionate portion of the burden of climate impact. The Connecting Climate to Communities Initiative (C3I) is addressing this challenge using a positive-focused, assetbased approach to engagement and action around climate change. C3I partners will lead this workshop designed to provide tools and training to help conservation-focused organizations engage their communities with climate action by integrating it into ongoing initiatives. Participants will work together to apply those resources to an issue, challenge, or existing project of interest, and leave the workshop with a thumb drive of the tools used as well as the beginnings of a community engagement plan.

Convener: Jennifer Schwarz Ballard, Chicago Botanic Garden

Contributors: Jennifer Hirsch,

Chicago Botanic Garden
Susan Ask, Founder
Animalia Project
Stephen Laubach, University of
Wisconsin Madison
Katharine Larson,
Alliance for the Great Lakes

WORKSHOP (TL, SC)

Building Models to Build Understanding: Practical Approaches to Pollination Evolution Biology

Spink Pavilion

"Learning by doing" is an effective way of triggering understanding. Therefore, at the botanical garden of the University of Vienna we have developed a program in which participants construct models of flowers to illustrate co-evolution between flowers and pollinators. In this hands-on workshop, we present the different steps of the program:

- the construction of different flower types,
- the "consumption" of the "nectar" that is offered by different "flowers"—illustrated using different sized devices,
- the surprising results found by participants when investigating this, and
- the consequences, namely, the subsequently formulated hypotheses for co-evolution processes.

Convener: Michael Khien, *Core Facility Botanical Garden, University of Vienna, Austria*

Contributor: Martin Rose, Core Facility
Botanical Garden,
University of Vienna, Austria

ROUND TABLE (CE, SV)

Leaders in Biodiversity Conservation: Working Together for Botanical Garden Environmental Education

Beaumont Room

Botanical gardens around the world are playing increasingly important roles in promoting biodiversity conservation. Key to success is working together on common goals. Comprising of four thematic table discussions, this session offers an opportunity to explore how institutions can develop partnerships and collaborations to enhance

Thursday

their work. Katja Neves will lead a discussion on how networks of botanical gardens are working with each other and with national and regional governments, communities, and grass-roots movements in pursuit of social justice-oriented alternatives to mainstream biodiversity conservation. Tallie Segel will explore how interdisciplinary teaching pedagogies can be used to engage public audiences, with examples from the ABQ BioPark Botanic Garden. Judy duPlooy will discuss how partnerships between gardens in which skills are exchanged for funds and resources can engage more people with the work of small, remote botanical gardens. Hear the presenters' stories, share your own, and debate how effective relationships between and within organizations and disciplines can be established to help them achieve greater reach.

Convener: Katja Neves, Concordia University

Contributors: Tallie Segel,

Northern Arizona University Judy duPlooy, Belize Botanic Gardens

MBG TOUR

Behind the Scenes: The Garden's Herbarium and Peter H. Raven Library Tour departs with a Garden Docent from the Ridgway Visitor Center, maximum of 20.

Conveners: Jim Solomon,

Associate Curator and Curator of the Herbarium Doug Holland, Director of the Peter H. Raven Library

Lunch | 12:15 to 1:45 p.m.

Orthwein Floral Display Hall

Sessions | 1:45 to 3:15 p.m.

PANEL (TL, PD)

Training the Next Generation of Leaders in Botanical Gardens

Missouri and Botanical Rooms

There are few academic programs in the world that prepare individuals for leadership in botanical gardens. Of these, two have a long history of providing innovative, immersive experiences for botanical garden professionals: the Cornell Graduate Program in Public Garden Leadership and the Longwood Graduate Program in Public Horticulture. Alumni of both programs hold prominent positions at gardens across the U.S. and abroad. Brian Trader will describe the Longwood Graduate Program's emphasis on experiential learning and well-rounded exposure to diversity, while Amy Mawby will speak to how her Longwood experience prepared her for a career in public garden leadership. Melanie Sifton will share how the Cornell program prepared her for her current role at the Brooklyn Botanic Garden, with Sonja Skelly detailing the current goals of Cornell's program. All panelists will provide their personal and professional perspectives on how graduate programs in public horticulture could better prepare future leaders.

Convener: Brian Trader,

Longwood Gardens

Panelists: Brian Trader,

Longwood Gardens
Amy Mawby, Tyler Arboretum
Sonja Skelly, Cornell Plantations
Melanie Sifton,

Brooklyn Botanic Garden

PANEL (CE, SV)

Botanical Gardens Building Bridges Between Generations, Communities, and Careers

Beaumont Room

Botanical gardens have the capability to do much more than focus on plant conservation. Their sites, skills, and resources can have social benefits. This panel session will explore how botanical gardens can create links between individuals, preserve local knowledge, and open the door to new career opportunities. Lior Gottesman will first explain how Jerusalem Botanical Garden's Hub for Social-Environmental Activism is not only promoting social-environmental entrepreneurship and sustainable behavior, but is also breeding relationships within the community to build cooperation and a close-knit network. Dareen Mehdi will then discuss how Oman Botanic Garden aims to preserve ethno-botanical knowledge within the country to restore the legacy that is slowly disappearing and bridge the gap between this traditional knowledge and the younger generations. Finally, Costantino Bonomi from Museo delle Scienze (MUSE) will explain how the internships and placements they offer are allowing young people from disadvantaged backgrounds to experience working in a museum setting and therefore have access to new careers. Discover how gardens can work for the environment and society, which is the goal of BGCI's Communities in Nature Program.

Convener: Asimina Vergou, BGCI

Panellists: Lior Gottesman,

Jerusalem Botanical Gardens

Dareen Mehdi,

Oman Botanic Garden

Costantino Bonomi, MUSE

WORKSHOP (TL, PD) Inspiring a Green Revolution

Kemper Classroom

When students make connections with the natural world by collecting and interpreting data from their local community using established and emerging technologies, the process of exploration could change their outlook on the role they play in improving our world's natural systems. This workshop is for educators who work with students in grades 6 through 12 to create scalable interactive explorations that develop pathways for students to design solutions for tomorrow. This session will share how the Botanical Research Institute of Texas uses its urban youth platform, Green Revolution, to develop innovative leaders through environmental project-based learning (PBL). Participants will develop questions and ideas to ignite critical thinking skills and foster student engagement in nature in their own communities. Participation in Environmental STEM (Science, Technology, Engineering, and Math) activities and 21st century skills, via collaboration, will be part of this session to authenticate the PBL experience.

Convener: Christina Middlebrook, *Botanical Research Institute of Texas*

Contributor: Pat Harrison, *Botanical Research Institute of Texas*

Thursday

WORKSHOP (SC, CE)

The Passionate Fact: Storytelling Science Spink Pavilion

A naturalist's life holds a wealth of experience. This living knowledge is humus for stories. Storytelling is the most accessible way for humans to digest information, reflect upon it, and sustain memory. While this is true for any listener, Susan Strauss will give examples of what techniques and stories are particularly effective with different audiences. A variety of story forms will be presented to help find the right story for a particular audience or teachable moment. Participants will explore the picture-making capacity of language, how to create sensory experience through language, narrative intrigue, power of metaphor, characterization, the musical structure of phrases, and the use of voice. Good storytelling engages and feels inclusive of any audience. Susan will perform excerpts from her botanical performances, such as Secrets of the Dark Forest: Tree Stories; When Venus Blushes: Plant Stories; and Seeds from the Sun: Stories of Agricultural Wisdom.

Convener: Susan Strauss, Storyteller



The Garden's Living Collection

Tour departs with a Garden Docent from the Ridgway Visitor Center, maximum of 15.

Conveners: Andrew Wyatt,

Vice President of Horticulture Becky Sucher, Living Collections Manager Derek Lyle, Nursery Supervisor

MBG TOUR

Behind the Scenes:

Center for Home Gardening

Tour departs with a Garden Docent from the Ridgway Visitor Center, maximum of 30.

Conveners: Glenn Kopp,

Information Services Manager

June Hutson,

Horticulture Supervisor

Posters and Coffee 3:15 to 4 p.m.

Poster Showcase in Monsanto Hall Coffee served in Sassafras café

POSTER SHOWCASE

Numeracy in the Landscape (TL, SC)

"Numeracy," or proficiency with numbers and measures, involves gathering, interpreting, and presenting data, as well as solving numerical problems. This poster will explore some of the many links between the wonderful worlds of nature and mathematics and will feature many ideas—from shapes, pattern, and symmetry to tessellation, measuring, and sorting. It will also feature a selection of cross-curricular links, ideas for spin-off activities, and resources to help make this relevant subject accessible to all and prove that even the smallest amount of green space can be useful for interpreting the natural world in novel and creative ways.

Convener: Michael Holland, Chelsea Physic Garden

Journey of Plant Kingdom: An Interesting Summer Camp (TL, SC)

Botanical gardens are important centers for education. Nanjing Botanical Garden, the first national botanical garden in China, has emphasized environmental education since the late 1990s. Its environmental education programs have been carried out in scientific guides, exhibitions, lectures, training courses, popular science books, materials, and a variety

of other activities. Journey of Plant Kingdom is a very popular summer camp designed mostly for primary school students and held in collaboration with Yangtze Evening Paper, one of the most influential local newspapers in Nanjing. It has been warmly welcomed by children and their parents due to its rich hands-on activities of collecting and processing specimen, carrying out tissue culture, searching for Green Treasure, growing potted plants, picking tea leaves, making crafts with plant materials, and observing insects (cicada and firefly) at night. The three-day "journey" has been regarded as a memorable, interesting experience, and its success is attributed to good organization, effective promotion, and successful collaboration with local media. As one model of Nanjing Botanical Garden's educational program, it won the Liang Xi Prize of Popular Science (in the Activity category) by the Chinese Association of Forestry in 2013.

Convener: Mei Li, Nanjing Botanical Garden Mem. Sun Yat-Sen

Trees with Knees, Shew's Loos, and Monkey Brains: The Weird and Wonderful World of Plants (TL, CE)

This poster highlights a summer-long program aimed at sparking family learning through trails, backpacks, natural play, and gardening clubs. Weekly summer trails were developed around the theme of "The Weird and Wonderful World of Plants," featuring trail maps, themed self-led activities, quirky illustrations, curious facts about plants, battle cards to collect, stickers, and badges to take home. Example: "Be a Bee," inspired by the Garden's Bee Borders, asked families to spend a day in the life of a bee, seeking out bees' favorite plants and places. This poster highlights the multiple trails developed and summarizes evaluation and feedback received.

Convener: Felicity Plent, Cambridge University Botanic Garden

Contributors: Bronwen Richards, Cambridge
University Botanic Garden
Sally Lee, Cambridge University
Botanic Garden

A World of Experience between Nature, Culture, and Art at The Gardens of Trauttmansdorff Castle (TL, SV)

This poster will summarize the experience of the Gardens of Trauttmansdorff Castle in the last decade of planning and implementation of botanical exhibitions that have successfully reached out to varied audiences. Our exhibitions aim to make botany exciting by presenting plants in a context that combines information about nature, science, culture, and art. We will share with the delegates how we turn botanical themes into multidimensional sensory experiences and how we cater to the many international visitors we receive. For example, our interactive and multi-sensory exhibitions are presented in three languages. Our previous exhibitions have covered topics such as: The Myth of the Ginkgo, Heavenly Scents, Ungodly Stench, and The Birds and the Bees: A Botanical Perspective.

Convener: Karin Kompatscher, *The Gardens of Trauttmansdorff Castle*

Thursday

Reaching Out to Society to Promote
Native Seed Awareness and Use (SC, TL)
NASSTEC is an EU Marie Curie Initial
Training Network that, between 2014 and
2017, will train 12 early-stage researchers in
native seed science, conservation, and use.
It will focus its efforts in promoting the use
of native seeds for grassland restoration,
building the capacity of local companies
for large-scale native seed production.
NASSTEC also includes a specific outreach
program to demonstrate the relevance of
its research to society and raise awareness

The NASSTEC Outreach Program:

Convener: Costantino Bonomi, *Museo delle Scienze (MUSE)*

of the importance of using native seeds in

gardening. The outreach program includes

diverse activities such as IBSE activities for

night, participation in the Famelab contest

in selected countries, placements for school

teachers in each partner lab, and native flower

displays in key cities of the partner countries.

schools, participation in the local researcher's

Sessions | 4:15 to 5:30 p.m.

PANEL (CE, TL)

Role of Botanical Gardens in Knowledge Transfer to Enhance Sustainable Food Production and Food Security

Shoenberg Theater

Through plant collections, training, and demonstration, botanical garden visitors can learn about indigenous vegetables and medicinal and useful plants to contribute to their sustainable growth and food security. This session presents projects that aim to promote sustainable agriculture. In the subtropical environment of Central America, theoretical and practical workshops are used, along with seed exchanges and policy-maker participation, to adapt productive techniques and recover knowledge and planting tradition. In the rural and semi-urban areas of Steiermark, transnational collaboration has led to four educational modules and demonstration gardens on sustainable agriculture in the region.

Convener: Meta Sepic, *University of Maribor Botanic Garden*

Panelist: Cristina Colorado, Joaquin Antonio
Uribe de Medellin Botanic Garden

PANEL (TL, RE) Children's Gardens: A Case for Program Impact

Spink Gallery

Children's gardens provide opportunities for multiple generations of visitors to socialize, learn, and develop affinity toward trees and plants. Layering the garden experience with interpretation, volunteer experiences, STEM, and school field trip programming increases a garden's impact on families and children. This session offers sharable tools and lessons learned about meeting audience needs from two U.S. gardens. Sue Wagner will present The Morton Arboretum's efforts to implement

innovative experience strategies, specifically focused on their four-acre, award-winning Children's Garden. Maria Conroy will highlight the Dallas Arboretum and Botanical Garden's new eight-acre Rory Meyers Children's Adventure Garden, and describe the design, implementation, and evaluation process for it.

Convener: Sue Wagner, The Morton Arboretum

Panelist: Sue Wagner, The Morton Arboretum Maria Conroy, Dallas Arboretum and Botanical Garden

WORKSHOP (SC, TL)

Bringing Science to Life: How to Create and Maintain Successful Education/ Research Collaborations

Missouri and Botanical Rooms

Many botanical gardens have vast collections including herbaria and conduct research both in situ and ex situ. However, the general public is often unaware of these important activities. In the first part of this workshop, we will share two different models for engaging the public with real botanical science. The Chicago Botanic Garden illustrates how education and research collaborate to provide a pathway from middle school through graduate school, while a natural history museum in Canada focuses on communicating the research work of the institution to their visitors broadly. Both projects required close collaboration between education and science departments. Workshop participants will share their own experiences and apply what they have learned to create a research/education collaboration plan.

Convener: Jennifer Schwarz Ballard, Chicago Botanic Garden

Contributor: Maggie Kilian, Royal Botanic Garden Edinburgh

WORKSHOP (TE, TL)

Increasing Youth Environmental
Engagement through Location-Based
Mobile Games

Beaumont Room

Are you looking for new ways to engage pre-teen audiences? The Missouri Botanical Garden, Columbus Zoo and Aquarium, San Diego Zoo, and Red Butte Garden collaborated with MIT to create interactive, location-based games tailored to this age. Using GPS-enabled smart phones and free software, pre-teens and their families embark on science adventures related to conservation, ethnobotany, food, and other topics. Much more than a mobile tour, the games offer opportunities for players to undertake a quest, make choices, and live with the (simulated) consequences, making connections to the natural world as they go. Each institution encourages youth to continue exploring, take action in their communities, connect with research, and create their own games to share. During this workshop, Susan Baron will share successes, challenges, and promising practices based on evaluation findings, and invites attendees to experiment with location-based mobile games as a launching point toward science learning and community involvement.

Convener: Susan Baron,

Missouri Botanical Garden

Contributor: Bob Coulter,

Missouri Botanical Garden

Thursday

WORKSHOP (TL, PD) Grow With Us: The Development of Educational and Commercially Successful Adult Learning Programs Kemper Classroom

The Royal Horticultural Society (RHS) is the U.K.'s leading gardening charity, with education and learning at the heart of its charitable purpose. RHS educational work includes a National Schools programthe Campaign for School Gardening, apprenticeships, a School of Horticulture, Master of Horticulture, accredited RHS qualifications, and programs for adults. The adult learning programs in RHS gardens have been transformed over the past three years, offering high-quality learning experiences that are also income- and profit-generating. The Courses and Workshops program offers short courses, covering topics such as horticultural practical skills, garden design, and botanical art and photography in the garden. In this interactive workshop, Sarah Cathcart will explore the key elements essential to offering an educationally inspiring but also commercially successful program, address some of the challenges faced, and explore possible solutions to support revitalizing or setting up adult learning programs.

Convener: Sarah Cathcart, *The Royal Horticultural Society*

WORKSHOP (TL, CE) Botanical Gardens at Night Spink Pavilion

If you explore a garden by flashlight, how does that change what people look at and learn about your collections? Cambridge University Botanic Garden has explored the dark side of the Garden by running a series of events including an annual family torchlight plant safari through the glasshouses, summer bat walks, moth trapping sessions, evening campfire art workshops with young people, and a 24-hr BioBlitz. Twilight at the Museums is a Cambridge-wide nighttime event aimed at families, featuring the spectacular lighting of the Glasshouses and a themed torch-lit trail through the Glasshouse Range. In 2014 the theme was "Darkness and Deception," looking at disguises and deception strategies used by plants to attract pollinators. This workshop will detail the event plans, provide delegates with the do's and don'ts of running night events, and spark ideas for developing ideas for after-dark activities at other botanical gardens.

Convener: Felicity Plent, Cambridge University Botanic Garden

Contributors: Bronwen Richards, Cambridge
University Botanic Garden
Sally Lee, Cambridge University
Botanic Garden

Event 6 to 10 p.m.

Communities in Nature Nocturne at the Missouri History Museum
See page 67 for event and session details.

Friday, May 1

Plenary | 9 to 10:30 a.m.

Shoenberg Theater

Cities for All: The Role of Parks and Open Spaces

Gil Peñalosa

How can we create vibrant and healthy cities for everyone, regardless of age or social status? How can parks and open spaces improve the quality of life that attracts and retains people to their communities? How can we meaningfully engage citizens in the process of place making? Gil answers these questions in a dynamic and inspiring presentation about creating more liveable cities that put people and nature at their center. Drawing on his experience as Commissioner of Parks and Recreation in Bogota, Gil presents some of the now widely celebrated approaches to urban regeneration through investments in parks and public spaces. Gil also draws upon examples in cities at the forefront of innovation in public space reclamation that demonstrate the many benefits parks and public spaces have on health, social inclusivity, and city vitality.

Learning about Learning in Botanical Gardens: The Importance and Value of Research and Evaluation

Dr. Joe E. Heimlich

Who comes to botanical gardens? Why do they come? What do they get out of a visit? How does their visit serve the environmental mission of the garden? Research and evaluation in visitor studies offers insights on these questions, and what has been learned in gardens and in other informal and freechoice environmental learning sites is both exciting and challenging. What we know and what we think we know about visitors and learners in botanical gardens is not always in alignment. Even what we know is often isolated information separating the visitor from the rest of their lived experiences. There are important understandings about visitors as active participants in the garden experience serving their own intended outcomes, and how we can use those outcomes to lead visitors to the outcomes we desire. Building on Gil Penalosa's keynote, we'll explore what research tells us about how the garden visit fits within the complex learningscapes of individual lives. It is necessary for botanical gardens to engage in research and evaluation in order to help the garden, the field of botanical garden education, and the larger field of informal learning understanding the role of the garden in visitors' lives.

Posters and Coffee | 10:30 to 11:15 a.m.

Posters on display in Monsanto Hall Coffee served in Sassafras café

Sessions | 11:30 a.m. to 1 p.m.

PANEL (CE, SV)

BiodiverseCity St. Louis: Cultivating Community Partnerships

Shoenberg Theater

Throughout the world, cities are recognizing how local biodiversity and green infrastructure are critical components of community and economic development, and are working to transform themselves into nature-rich cities that improve quality of life for all. Missouri Botanical Garden launched BiodiverseCity St. Louis in 2013 as a community-wide network of organizations and individuals. In this panel, Deborah Frank will describe the Garden's multi-faceted role of convener, facilitator, connector, and promoter of this regional effort. Catherine Werner will speak to the City of St. Louis's Urban Vitality and Ecology Initiative. J. Tracy Boaz will describe her agency's role, while George Yatskievych will share the applicability of the Garden's expertise in local flora. Greg Brumitt will discuss how greenways can support an active, healthy outdoor culture. Session attendees will leave with a greater appreciation of the power of community partnerships and the importance of reflecting and embracing community values.

Convener: Sheila Voss,

Missouri Botanical Garden

Panelists: Deborah Frank,

Missouri Botanical Garden Catherine Werner, City of St. Louis

George Yatskievych, Missouri Botanical Garden

J. Tracy Boaz, Missouri Department

of Conservation Greg Brumitt,

Great Rivers Greenway

PANEL (TL, SV) Planting Seeds During the Early Childhood Years

Spink Pavilion

The early learning years are an ideal time to acquaint young children with the outdoors and the natural world. Unfortunately, for many children in urban areas, their outdoor playtime is spent on fabricated playgrounds, and exposure to nature is not a priority. What role can botanical gardens play in promoting nature exploration at the earlychildhood level? In this panel, Tonya Brown will describe programs offered for earlychildhood groups at the Missouri Botanical Garden and the thinking that went into their design and execution. Julie Wuch will explain the rationale behind the design of her school's Outdoor Learning Classroom. Early-childhood teachers in Saint Louis Public Schools will speak about the challenges their classrooms face related to taking students outdoors, and a representative from Boeing will share perspectives on funding priorities and why corporations value early-childhood education as an investment in the local community.

Convener: Jennifer Hartley,

Missouri Botanical Garden

Panelists: Tonya Brown,

Missouri Botanical Garden Julie Wuch, St. Louis Public Schools, Wilkinson Early Childhood Center Elizabeth Knoll, Saint Louis Public

Schools, Wilkinson Early Childhood Center

Elicia Qualis, Urban Sprouts Early

Childhood Center

Megan Davies, Boeing Corporation

PANEL (RE, SC)

Education Research in Botanical Gardens: Case Studies from China and Austria

Spink Gallery

Botanical gardens provide an ideal environment to create and support curiosity about nature, attracting visitors who differ in sociocultural background, interests, and knowledge about environmental issues. This panel will explore different approaches that advance the field of science communications in botanical gardens. Michael Kiehn will present findings from a study focused on plant-blindness, with implications on how to overcome the phenomenon. Guangyu Liu will share insights related to the ecological and socioeconomic effects on the public's interest on plants in China. Jakob Egg will provide attendees with a deeper understanding of social network structures and professional learning communities of informal and formal educators, and share findings from the INQUIRE program. Xi Yang will share how the Chinese Union of Botanical Gardens is developing the capacity of Chinese botanical gardens. All the panelists will provide insights and ideas of potential relevance for other botanical gardens.

Convener: Michael Kiehn, Core Facility Botanical Garden, University of Vienna, Austria

Panelists: Michael Kiehn, Core Facility
Botanical Garden, University of
Vienna, Austria
Guangyu Liu, Xishuangbanna
Tropical Botanical Garden, CAS
Jakob Egg, Institute of Botany,
University of Innsbruck
Xi Yang, Chinese Union of
Botanical Gardens

WORKSHOP (SV, RE)

Interpretive Master Plan Development at Public Gardens: Three Case Studies from Finland, Australia, and the United States Beaumont Room

Interpretive master planning is an allencompassing tool that can help focus an institution's approach to education and interpretation. This workshop will introduce the basic elements of interpretive master planning at botanical gardens and arboreta as well as offering new tips and tricks for delegates to add to their interpreter's tool-kit. Three case studies demonstrate how plans are developed and explain the experience of implementing them. Comparing these experiences will illustrate the variety of approaches and advice that can be offered, from the perspective of consultants and garden staff. Through discussion and group work, delegates will share their experiences and identify common challenges and strategies to overcome them.

Convener: Satu Jovero, LUOMUS, Finnish Museum of Natural History

Contributors: Chuck Lennox, Cascade
Interpretive Consulting LLC
Sharon Willoughby, Royal
Botanic Gardens Cranbourne
Pertti Pehkonen, LUOMUS,
Finnish Museum of Natural
History

Friday

WORKSHOP (SC, RE)

Tackling "Organizational Inertia" and Perceptions About the Social Role of Botanical Gardens

Missouri and Botanical Rooms

This participatory workshop will take the preliminary findings from the Five Year Review of the BGCI program, "Communities in Nature: Growing the Social Role of Botanic Gardens," many of which enter the realm of organization development and change, as well as a necessary shift in thinking about working with communities that moves away from programs done to or even for communities but rather with communities as partners. The workshop will look for international perspectives on the complex issues the Five Year Review usefully raises for policy and practice in this fast-growing aspect of the work of botanical gardens. Using a range of lively and engaging participatory techniques, Bernadette Lynch will invite international colleagues to discuss, debate, and share perspectives on the key issues the Review raises of possible relevance to all botanical gardens in growing their social role toward a joint strategy for public participation that may be shared across the sector.

Convener: Bernadette Lynch



Experience the Japanese Garden

Tour departs with a Garden Docent from the Ridgway Visitor Center, maximum of 15.

Convener: Greg Cadice, Senior Horticulturist



Behind the Scenes:

Center for Home Gardening

Tour departs with a Garden Docent from the Ridgway Visitor Center, maximum of 30.

Conveners: Glenn Kopp,

Information Services Manager

June Hutson,

Horticulture Supervisor

Lunch 1 to 2 p.m.

Orthwein Floral Display Hall

Closing Ceremony 2 to 3 p.m.

Shoenberg Theater

Join fellow delegates and representatives from the Missouri Botanical Garden and BGCI to bring to a close the 9th International Congress on Education in Botanic Gardens. To pay homage to all participants and the expertise, ideas, questions, and challenges they brought to the congress, BGCI will share conclusions and insights collected from delegate feedback and highlight the week's top topics and discussion themes. What discussions rose to the top? What themes connected us all? In what ways can we collectively achieve greater impact for the communities we serve and the world we share? The Missouri Botanical Garden will share reflections from the perspective of host garden by sharing and celebrating images featuring the week's events, sessions, places, people, and plants. In the long-held tradition of planning for the future, both BGCI and the Missouri Botanical Garden will co-announce the next host garden for the 10th International Congress on Education in Botanic Gardens in 2018.



Dr. Peter Wyse Jackson

President, Missouri Botanical Garden

Dr. Peter Wyse Jackson is the president of the Missouri Botanical Garden and George Engelmann Professor of Botany at Washington University in St. Louis. In 1987, he joined the International Union for the Conservation of Nature (IUCN), where he helped to establish the international network organization for botanical gardens that became Botanic Gardens Conservation International (BGCI). In 1994, he was appointed secretary general of BGCI, and in 2005 he returned to Dublin as director of the National Botanic Gardens of Ireland. In 2010, he was appointed to his present position at the Missouri Botanical Garden.

As one of the world's foremost and best known botanists and plant conservationists, Dr. Wyse Jackson played a lead role in the development and implementation of the Global Strategy for Plant Conservation, adopted by the U.N. Convention on Biological Diversity in 2002. He is chairman of the Global Partnership for Plant Conservation and the World Flora Online Consortium and has been a member of the boards of numerous botanical, conservation, and horticultural organizations around the world, including BGCI.



Dr. Paul Smith

Secretary General, Botanic Gardens Conservation International

Dr. Paul Smith is the Secretary General of Botanic Gardens Conservation International (BGCI). He is the former Head of Kew's Millennium Seed Bank (MSB). During his nine years at the helm, seeds from over 25,000 plant species were conserved in the MSB and, in 2009, the MSB achieved its first significant milestone, securing seed from 10 percent of the world's plant species, prioritizing rare, threatened, and useful plants. Since then, the MSB and its 170 partner institutions in 80 countries around the world have set themselves the target of conserving 25 percent of the world's flora by 2020. During the last five years, Dr. Smith and his team promoted the concept of seed banks as a resource for human innovation, adaptation, and resilience, and today, seeds from the MSB and its partner seed banks are being used in agriculture, horticulture, forestry, and habitat restoration. Dr. Smith trained as a plant ecologist and is a specialist in the plants and vegetation of southern Africa.

Speakers



Dr. Peter H. Raven

President Emeritus, Missouri Botanical Garden

Dr. Peter Raven is one of the world's leading botanists and advocates of conservation and biodiversity. For four decades, he headed the Missouri Botanical Garden, an institution he nurtured into a world-class center for botanical research, education, and horticultural display. Described by Time magazine as a "Hero for the Planet," Dr. Raven champions research around the world to preserve endangered plants and is a leading advocate for conservation and a sustainable environment. In recognition of his work in science and conservation, Dr. Raven is the recipient of numerous prizes and awards, including the prestigious International Prize for Biology from the government of Japan and the U.S. National Medal of Science, the country's highest award for scientific accomplishment. He has held Guggenheim and John D. and Catherine T. MacArthur Foundation fellowships, and was a member of President Bill Clinton's Committee of Advisors on Science and Technology. He also served for 12 years as home secretary of the National Academy of Sciences and is a member of the academies of science in Argentina, Brazil, China, Denmark, India, Italy, Mexico, Russia, Sweden, the U.K., and several other countries. The author of numerous books and reports, both popular and scientific, Dr. Raven co-wrote Biology of Plants, an internationally best-selling textbook, now in its sixth edition. He also co-authored *Environment*, a leading textbook on the environment.



Dr. Rebeca Quiñonez-Piñón

Executive Director, La Cruz Habitat Protection Project

Dr. Rebeca Quiñonez-Piñón earned her Doctorate in Geomatics Engineering from the University of Calgary Geomatics Department in Alberta, Canada, where she majored in Environmental Engineering and minored in Forest Hydrology, including the study of boreal, tropical, and temperate forests. In 2010 and 2011, Dr. Quiñonez-Piñón led a project funded by the Ecosystems Network of CONACYT, whose main priority was to initiate the creation of a National Environmental Monitoring System in Mexico. Dr. Quiñonez-Piñón now serves on the evaluating committee of that project. Throughout her career, she has either led or participated in 14 research projects. She has 15 years of experience as a university professor at the Universidad Autónoma Metropolitana in Mexico City, and about three years of consulting experience, primarily for Petroleos Mexicanos (PEMEX). She now resides in Austin, Texas, and is writing several journal papers and serving as a reviewer for the International Journal of Remote Sensing. In 2013, she became the Executive Director of La Cruz Habitat Protection Project, where she focuses most of her efforts on increasing the forest restoration rates in the Monarch Butterfly Biosphere Reserve through the Forests for Monarchs program.



Catherine L. Werner

Sustainability Director, City of St. Louis Mayor's Office

In 2009, Mayor Francis Slay appointed Catherine Werner as the first Sustainability Director for the City of St. Louis to lead numerous urban sustainability initiatives, including the development of an award-winning Sustainability Plan for the City of St. Louis and the implementation of the Mayor's Sustainability Action Agenda of Priorities. Catherine possesses 25 years of experience in promoting and managing various sustainable development and conservation initiatives as well as handling diverse matters of environmental law and policy. She has worked as an environmental attorney, sustainability/green building consultant, natural resources specialist, and environmental educator. She has extensive experience in real estate and ecological/green residential design issues. She served as the Director of Land Protection for The Nature Conservancy of Missouri and Program Director for Chicago Wilderness, and founded a nonprofit organization to raise awareness of the significance of tallgrass prairies. Catherine has taught environmental courses at various institutions of higher learning, including "Environmental Law: Applications Toward Sustainability" at Washington University in St. Louis. Catherine is a LEED Accredited Professional, obtained her JD from Washington University School of Law, and her undergraduate degree from Duke University.



Dr. Akpezi Ogbuigwe

Anpez Center for Environment and Development, Nigeria

Dr. Akpezi Ogbuigwe, former Head of Environmental Education and Training (EET) at the United Nations Environment Programme (UNEP) and later Coordinator of UNEP's Ecosystem Management Programme, is currently a Reader at the Rivers State University of Science and Technology in Portharcourt, Nigeria, and Founder of ANPEZ Center for Environment and Development, where she works with schools, communities, government, and the private sector on issues of environmental rights and development, human rights, and the running of an environmental library. As Head of UNEP's EET program, she oversaw, among others things, the UNEP's multistakeholders' program on Mainstreaming Environment and Sustainability in African Universities (MESA), the Global Universities Partnership for Environmental Sustainability (GUPES), and the student movement on Sustainability Generation. She was also UNEP's lead focal point for the UN Decade of Education for Sustainable Development. Prior to joining UNEP (2002–2014), she was a Reader and Dean at the Rivers State University of Science and Technology in Portharcourt, Nigeria.

Speakers



Dr. Rainer Bussmann

Director, William L. Brown Center, Missouri Botanical Garden

Dr. Bussmann will introduce the morning's speakers and award the 7th William L. Brown Award for Excellence in Genetic Resource Conservation to Dr. Cary Fowler.

Dr. Bussmann is an ethnobotanist and vegetation ecologist. Before accepting the directorship of the Missouri Botanical Garden's William L. Brown Center, he held academic appointments as Research Fellow in Geography and the Environment at UT Austin, Associate Professor of Botany and Scientific Director of Harold Lyon Arboretum at the University of Hawaii, and Assistant Professor at the University of Bayreuth in Germany. His work focuses on ethnobotanical research and the preservation of traditional knowledge in Bolivia, Peru, Madagascar, the Caucasus, and the Himalayas.



Dr. Cary Fowler *Global Crop Diversity Trust*

Dr. Cary Fowler headed the International Conference and Program on Plant Genetic Resources at the Food and Agricultural Organization (FAO) of the United Nations (UN), producing the first global assessment of the state of the world's crop diversity. He served as the chief author of the FAO's Global Plan of Action for Plant Genetic Resources, and led the negotiations that led to its adoption by 150 countries in 1996. From 1996 to 2001, Dr. Fowler represented the Consultative Group on International Agricultural Research (CGIAR) in negotiations for the International Treaty on Plant Genetic Resources, and in 2010, leading an international campaign, he organized saving one of the world's largest living collections of fruit and berry varieties at the Pavlovsk Experiment Station in Russia from urban development. From 2005 to 2012, Dr. Fowler led the creation and served as the Executive Director of the Global Crop Diversity Trust (www.croptrust.org). The trust's mandate is to ensure "the conservation and availability of crop diversity for food security worldwide." He has served as a Special Assistant to the Secretary General of the World Food Summit and as a board member of the International Maize and Wheat Improvement Center (CIMMYT) in Mexico, and the National Plant Genetic Resources Board of the U.S.



Marly Cornell

Author, Seeds for Change: The Lives and

Work of Suri and Edda Sehgal

Marly Cornell is a writer, artist, and social justice advocate with a BFA from Moore College of Art in Philadelphia and an MA from St. Mary's University of Minnesota. For 30 years, she worked in the corporate nonprofit sector in healthcare, mental health law, behavioral services, and physician recruitment. Her books include *Walks on the Beach with Angie, The Able Life of Cody Jane, Seeds for Change: The Lives and Work of Suri and Edda Sehgal,* and *Together We Empower: Our First Fifteen Years in Rural India.*



Dr. Bernadette Lynch

Dr. Bernadette Lynch is an academic and museum professional with 25 years of experience in senior management in U.K. and Canadian museums. Formerly Deputy Director at the Manchester Museum at the University of Manchester, she developed an international reputation for leading ethical, innovative participatory practice. Her research and consultancy work specializes in public engagement and participation with diverse communities and in leading museum transformation and change. Her recent work has been very influential in raising debate on the impact of public engagement in museums, including Whose Cake Is It Anyway? that she wrote on behalf of the Paul Hamlyn Foundation. She has extensive experience in leading participatory action research across the U.K.'s cultural sector. She is frequently asked to lecture, advise, teach museum studies, and mentor museum professionals internationally, and she publishes widely. She is Honorary Research Associate at University College London (UCL), where her ongoing research relates to public participation, democracy, dialogue, debate, and organizational change in the cultural sector.

Speakers



Dr. Joe E. Heimlich

Principal Researcher, Center of Science and Industry (COSI)

Dr. Joe E. Heimlich is a Principal Researcher with the Lifelong Learning Group at COSI in Columbus, Ohio, where he works on an array of projects focusing on informal learning and capacity building for zoos, nature centers, parks, gardens, science centers, and other museums. He is also Professor Emeritus with Ohio State University, where he was an Extension Specialist in museums and organizational capacity building. He served as Leader of Environmental Science for Ohio State University Extension and held appointments in the School of Environment and Natural Resources, the Environmental Science Graduate Program, and the College of Education and Human Ecology. He has been engaged in the arena of environmental free-choice learning for 34 years and is the author of over 100 academic journal articles, chapters, and books, and has written more than 300 evaluation and research reports and popular publications.



Gil (Guillermo) Penalosa

Founder and Chair of the Board, 8-80 Cities

Gil Penalosa is passionate about cities for all people. Gil advises decision-makers and communities on how to create vibrant cities and healthy communities for everyone regardless of social, economic, or ethnic background. His focus is on the design and use of parks and streets as great public places, as well as sustainable mobility: walking, cycling, and public transit. Gil is Founder and Chair of the Board of the successful Canadian nonprofit organization 8-80 Cities. The organization was created based on a simple philosophy: if you create a great city for an 8-year-old and an 80-year-old, you will create a successful city for all people. Over the past eight years, Gil has worked in over 180 different cities across six continents. Prior to his work with 8-80 Cities, Gil served as the Commissioner of Parks, Sport and Recreation for the City of Bogotá, Colombia. He currently serves on the Board of Directors of City Parks Alliance, USA, and is a Senior Advisor to StreetFilms in New York City, American Trails, and America Walks. Gil holds an MBA from UCLA's Anderson School of Management, where he recently was selected as one of the "100 Most Inspirational Alumni" in the school's history. He holds a Doctorate Honoris Causa from the Faculty of Landscape Architecture and Urban Planning at University of Sweden SLU, and recently he received the Queen Elizabeth Diamond Jubilee Medal and was named one of the "Top 10 Most Influential Hispanics in Canada."



Welcome Reception: A Taste of Missouri

Sunday, April 26 from 5 to 9 p.m. | Missouri Botanical Garden | casual attire

A "Taste of Missouri" Welcome Reception will kick off the 9th International Congress on Education in Botanical Gardens. Upon arrival through the Garden's Ridgway Visitor Center, delegates will make their way to the Central Axis, flanked by the world-renowned Climatron, the first geodesic dome to be used as a conservatory, and the historic Spink Pavilion. Staff will be on hand to welcome delegates to the Garden, currently in its 155th year of operation. As a proper welcome to St. Louis, the evening will highlight local and seasonal fare from some of Missouri's finest local farmers, including signature cocktails and local wines and beers. Delegates will have the opportunity to enjoy St. Louis's famous Kakao chocolates and sample botanically based truffles, seasonal pate de fruit, and barks. Docents will be available for short guided walks, sharing insights about the Garden and the greater St. Louis region. To top it off, the vintage jazz and blues sounds of Tommy Halloran's Guerrilla Swing band will welcome delegates to St. Louis in unforgettable style.

Events

Biodiversity, Bluegrass, and Bar-B-Que

Wednesday, April 29 from 2 to 8 p.m. | Shaw Nature Reserve | outdoor attire

On Wednesday, delegates will trek by bus to Shaw Nature Reserve, in Grey Summit, Missouri, for an adventurous afternoon and evening in the great outdoors. The Reserve's Horticulture staff will join us as we explore the 5-acre Whitmire Wildflower Garden, a celebration of Missouri's native plant communities. Garden paths invite you to meander through five plant communities and a home gardening area that includes a native perennial garden, rock garden, prairie garden, water garden, woodland garden, and rain garden. Over 800 Missouri native plants are on display in this special place.

Release your inner child in the Reserve's Nature Explore Classroom and Sense of Wonder Woodland. This engaging outdoor area features outdoor "rooms" where young children can manipulate natural materials in creative and unstructured play.

Visit the recently installed Elf House, get a birds-eye view from the fire tower overlooking the pond, and try your luck on the zig-zag bridge. You'll have the chance to sample Canopy Climb, a recreational tree-climbing experience offered as a public class by the Reserve and the Garden. Learn the basics of tree-climbing techniques and have the opportunity to explore the canopy of one of the Reserve's most majestic trees.

Enjoy some of the Reserve's 14 miles of hiking trails through a diversity of Ozark Border landscapes including floodplain forest, upland woods, dolomite glades, oak-hickory woodlands, savannah, and wetlands. Restoration of these habitats provides the Reserve's visitors a uniquely varied experience of Missouri's rich biological heritage.

Learn about the first and only Forest School in Missouri, Raintree School, through an interactive workshop featuring inspiring, short-form films produced by Raintree educators.

Share ideas with other educators as you explore some of the activities in and around the Bascom House that Reserve educators use to engage a wide range of visitors each year. To finish out the evening, enjoy award-winning, local smokehouse fare and local beverages while taking in the sounds and strings of Missouri Breaks, a progressive bluegrass band featuring longtime Missouri musicians.

WORKSHOP (TL, CE)

Becoming the Woods: A Forest School Perspective on the Making of Citizens 4 to 5:30 p.m. in the Carriage House | Shaw Nature Reserve

Unstructured encounters in wild spaces help participants frame their perspectives on their community, social interactions, and role as citizen in many ways. Wild spaces offer endless outlets for adventure, play, creative experiences, and scientific and civic thinking for all ages.

From long-term projects to one-off events, the children of forest schools enjoy the full benefit of learning in the native, wild environments found just outside their school door. In this session, participants will examine the differences between forest school and other outdoor learning approaches, discuss the components of authentic participant-initiated forest school encounters, and reflect on the role of forest school experiences and civic action of participants. A film of forest school sessions in action, photographs, and a précis of current research will be part of this presentation.

Convener: Brandi Cartwright, Raintree School

Communities in Nature Nocturne

Thursday, April 30 from 6 to 10 p.m. Missouri History Museum | casual attire

On Thursday, delegates will enjoy a unique evening reception at the Missouri History Museum (MHM). In partnership with fellow educators from MHM, this interactive experience will challenge delegates to think about how they are engaging their own communities. This not-to-be-missed night is about the broader social roles that all of us play in the communities we call home.



Generously supported by



The evening will begin with delegates enjoying food, drinks, and networking in the Grand Hall. Immediately following, Dr. Bernadette Lynch will share findings from *Communities in Nature*, a five-year initiative supported by the Calouste Gulbenkian Foundation that aims to encourage botanical gardens around the world to grow a social role. BGCI will share the final evaluation report, summarizing the successes and challenges of this initiative. The MHM's Teens Make History group will perform "Next Hashtag," a short play about youth perspectives on the August 2014 events and aftermath in Ferguson, Missouri.

Delegates will then be invited to choose from three parallel sessions/workshops that showcase social inclusion work. A World Café experience facilitated by Brooklyn Botanic Garden, *Engaging Your Community: Who's Missing from Your Garden*, will feature three rounds of discussions among delegates examining who is not engaging in their gardens, identifying barriers to participation by underserved groups, and brainstorming new ways to overcome those barriers and obstacles. Another group will participate in Talking Circles, an interactive discussion format facilitated by MHM staff and colleagues from the National Conference for Community and Justice. A third group will experience an MHM-staff led Black History Highlights Tour, an experience designed for school-aged youth.

The evening will conclude with dessert and networking in the Grand Hall. Delegates will have the opportunity to explore MHM exhibits, including *Looking Back at Looking Forward: 1904 World's Fair, Seeking St. Louis: Currents and Reflections*, and *State of Deception: The Power of Nazi Propaganda*. Throughout the evening, MHM staff and volunteers will be on hand to share their community-related work.

The Paradox of Participation for Botanical Gardens

Dr. Bernadette Lynch

"Trying to reach society....what better place to do it than botanic gardens?" notes Dr. Paul Smith, the new Secretary General of BGCI. There is much agreement on the importance of the social role of botanical gardens, yet, as a senior staff member of a large botanical garden recently remarked of his colleagues, "There is still a reluctance at senior level to see it as a priority." Dr. Bernadette Lynch will present, as provocation for debate, the preliminary findings from her Five Year Review of the BGCI program "Communities in Nature: Growing the Social Role of Botanic Gardens" from the perspective of the issues the program has presented. The event will be followed by participatory workshop Friday morning (see page 58). This is an opportunity for contributing perspectives from different continents/contexts on the issues raised in growing the social role of botanical gardens with local and global communities for the enduring benefit of those communities and the gardens themselves that may be shared across the sector.

Events

WORLD CAFÉ (CE, SV)

Engaging Your Community: Who's Missing from Your Garden?

The challenge of drawing all segments of the local population into a botanical garden seems to be universal. Yet solutions to global issues of plant conservation and climate change depend on engaging those who aren't already coming to us. Successfully drawing the most hard-to-reach audiences takes creativity and effort, often requiring fundamental changes to program structure and maybe even a new perspective on how you relate to your community. Participants in this session will complete a self-assessment, comparing target audiences with actual attendees, and brainstorm ways to overcome participation barriers as they share their own success stories and challenges.

Convener: Marilyn Smith,

Brooklyn Botanic Garden

Contributor: Barbara Kurland,

Brooklyn Botanic Garden

Group Dinner Opportunities

On Monday and Tuesday, you are on your own for dinner. You'll find that St. Louis is a city of neighborhoods, each with its own distinctive style and characteristics. If you want to experience a little of St. Louis, away from downtown, plan to join us on either or both nights for dinner with a group. We'll leave from the Hilton St. Louis at the Ballpark and walk two blocks to the MetroLink station. The cost of MetroLink is \$5 round trip. When we arrive at our destination, we will decide whether to go to one restaurant or to go in different directions. At the end of the evening, we'll head back to the hotel as a group.

Join us! There will be a sign-up sheet at the congress Information Desk, located in Piper Lobby in the Ridgway Visitor Center, on Monday and Tuesday.

MONDAY, APRIL 27

Central West End

0.8 mile walk from MetroLink to restaurants

Perched on the eastern edge of Forest Park and over a century old, the chic Central West End is full of charming sidewalk cafés, galleries, antique shops, restaurants, boutiques, and pubs. It's a little European, a little New York, and totally St. Louis. With a wide range of restaurants and eating options to choose from, you're sure to find the cuisine you're craving.

TUESDAY, APRIL 28

The Delmar Loop

0.61 mile walk from MetroLink to restaurants

The Loop offers six blocks of exhilarating retail, restaurants, live music, café culture, and even a St. Louis Walk of Fame. A century ago at this location, streetcars from downtown "looped around" to return to the city, which gave the area its name. That momentum continues today with the exciting growth and development that has made it a destination. You're sure to find your favorite foods here!

Pre-Congress Tours



Cahokia Mounds

Sunday, April 26 | 9 a.m.-3:30 p.m. \$65 per person | 50 person maximum

Travel back in time with fellow congress delegates as you spend the day exploring what was once one of the greatest cities of the world. The remains of the most sophisticated prehistoric native civilization north of Mexico are preserved just 15 minutes east of downtown St. Louis, at Cahokia Mounds State Historic Site, a U.N.-designated World Heritage Site for its importance to our understanding of the prehistory of North America. Within the 2,200-acre tract lie the archaeological remnants of the central section of what was once a thriving ancient metropolis known as Cahokia, "City of the Sun." The Mississippians who lived here were accomplished builders who erected a wide variety of structures from practical homes for everyday living to monumental public works that have maintained their grandeur for centuries. We'll spend the morning exploring the site's world-class Interpretive Center, featuring museum exhibit galleries, a theater, and public programming auditorium. After lunch, we'll trek outside to hike and explore the mounds, including the 100-foot-high Monks Mound, the largest earthwork in North America. Guiding us will be Washington University archaeologist Dr. John Kelly, whose research focuses on Cahokia culture. Bring a water bottle and wear comfortable clothing for outdoor exploration. Bus transportation, lunch, guided tour, and self-guided tour resources in multiple languages are included in fee.

Pre-Congress Tours

Forest Park and Saint Louis Zoo

Sunday, April 26 | 8:30 a.m.-3:30 p.m. \$60 per person | 50 person maximum

During this full-day tour, you'll experience the wonders of Forest Park, one of the largest urban parks in the U.S., as well as the world-famous Saint Louis Zoo. At 1,371 acres, Forest Park is approximately 500 acres larger than Central Park in New York City. This beloved park and its miles of biking and hiking trails are stewarded by Forest Park Forever in close partnership with the City of St. Louis. Your day will begin with a coach tour of the park's main attractions: the Jewel Box greenhouse, the James S. McDonnell Planetarium, Steinberg Rink, The Muny, the Visitor and Education Center, the Missouri History Museum, and the Saint Louis Art Museum. We'll stop for a midday hike through Kennedy Forest to learn more and experience two engaging citizen science programs: Turtle Trek and FrogWatch. Then we'll meet up with the Saint Louis Zoo's Education team and have lunch there, where you can dig in to the zoo's Distance Learning program, take a Safari Walking tour, learn how the zoo is connecting children and nature through pre-K and early-childhood programs, or choose to enjoy the Saint Louis Zoo on your own. Bring a water bottle and wear comfortable clothing for outdoor exploration. Bus transportation, lunch, and guided tours are included in fee.

Post-Congress Tours



Biotechnology, Butterflies, and Beverages

Friday, May 1, 2015 | 4–9:30 p.m. \$50 per person | 50 person maximum

On this last day of the congress, spend the latter part of Friday with fellow delegates seeking a little bit of plant science, entomology, and drinks. This tour will depart from the Missouri Botanical Garden on Friday afternoon after the congress concludes, and head 30 minutes west to Chesterfield, Missouri, home to the Monsanto headquarters, the global agriculture company, and the Sophia M. Sachs Butterfly House, a division of the Missouri Botanical Garden. Our first stop will be a guided tour of Monsanto's greenhouse complex that's still under construction to learn about ever-evolving plant science research and technology focused on global food crops of significance. Following the tour, our coach will take us down the road to the Butterfly House, the first insectarium to be accredited by the American Zoo and Aquarium Association. Our colleagues here will welcome you with light appetizers, wine, and beer, and invite you to experience more than 1,500 free-flying butterflies as you stroll through the Tropical Conservatory, visit the Lopata Learning Lab, and enjoy the outdoor Native Butterfly Garden. This is a perfect way to wrap up the week with fellow congress delegates and newfound friends. Wear comfortable/casual clothing. Bus transportation, food, and beverages included in fee.

Post-Congress Tours

Audubon Center at the Riverlands/ National Great Rivers Museum

Saturday, May 2 | 8:30 a.m.–6 p.m. \$70 per person | 50 person maximum

Just 30 minutes north of downtown St. Louis, you'll visit the National Great Rivers Research and Education Center, the National Great Rivers Museum, and the Audubon Center at Riverlands. Your day will start when you cross the majestic Clark Bridge and head down the Great River Road to the National Great Rivers Research and Education Center, where you will have an opportunity to tour the facilities and take in lovely views of the Mississippi River. The next stop is a 1.5–hour tour of the Museum, which includes a visitor center operated by the Army Corps of Engineers. You'll view the museum's exhibits and have the opportunity to ascend to the top of the impressive Melvin Price Lock and Dam, an engineering marvel that enables barges to navigate the river. Lunch will be served in the Museum's learning space.

After lunch you'll cross back into Missouri to enjoy 3,700 acres of restored prairie marsh and forest at the U.S. Army Corps of Engineers' Riverlands Migratory Bird Sanctuary. The sanctuary is a designated Important Bird Area in the heart of one of the most significant flyways in the world—the Mississippi River. You'll experience the Center, its exhibits, and its dramatic, expansive view of the Mississippi. You'll also have the opportunity to hike its nearby nature trails and enjoy intimate views of the quiet waters of Ellis Bay, home to an ever-changing variety of 325 species of both resident and migratory songbirds and waterfowl. Bring a water bottle and wear comfortable clothing for outdoor exploration. Binoculars will be available to borrow. Bus transportation and lunch included in fee.

Urban Gardening Tour

Saturday, May 2 | 8:30 a.m.-1:30 p.m. \$40 per person | 50 person maximum

Get inspired by our colleagues at Gateway Greening, an incredible nonprofit organization comprising of gardeners, neighbors, friends, and volunteers dedicated to sustainability, hope, and healthier, happier lives for all. During this half-day experience, we'll visit Bell Demonstration and Community Garden and the City Seeds Urban Farm, just two of Gateway Greening's 200+ gardens in the region. Known as the organization's outdoor office, Bell Demonstration Garden makes available 20 demonstration beds, seed distribution, tool loans, a "Community Coop," composting area, and a picnic shelter to enable learning, connecting, growing, and sharing. City Seeds Urban Farm is a 2.5-acre downtown oasis that provides fresh produce for local charities and the Bell Market, and works to provide opportunities for the homeless. Bring a water bottle and wear comfortable clothing for outdoor exploration. Bus transportation and lunch included in fee.



Chicago Botanic Garden

'Urbs in Horto'/'City in a Garden' Tour

While the original tour was cancelled, Chicago Botanic Garden is offering a free one-day tour on May 4. The experience will include a tour of Buhler Enabling Garden and discussion of Chicago Botanic Garden Horticultural Therapy Programs with Barbara Kreski, Director of Horticultural Therapy Services; a discussion about Windy City Harvest with Eliza Fournier; a tour of the Plant Conservation Science Center; a grand tour of the garden; and plenty of time to explore on your own. The tour does not include travel between St. Louis and Chicago or accommodations in Chicago.

Getting to Chicago

Amtrak train from St. Louis, MO (STL) to Chicago Union Station (CHI) www.amtrak.com

Mega Bus from Gateway Transportation Center to Union Station us.megabus.com

Greyhound Bus www.greyhound.com/express

Getting Around Chicago

Chicago Transit Authority (CTA) "L" Trains and bus routes can be found at www.transitchicago.com

Metra train (to the suburbs) routes can be found at www.metrarail.com

Accommodations

Hostelling International Chicago (original tour's accommodations) www.hichicago.org

More options available at www.chicagobotanic.org/visit/accommodations

About Chicago Botanic Garden

www.chicagobotanic.org 1000 Lake Cook Rd Glencoe, IL 60022

The Garden is located approximately 30 miles north of the City of Chicago.

For more information about this and other congress tours, please visit the congress Information Desk, located in Piper Lobby in the Ridgway Visitor Center.



CONGRESS HOTEL

Hilton St. Louis at the Ballpark 1 South Broadway St. Louis, MO 63102 www.hiltonstlouis.com

The official host hotel for the 2015 BGCI Education Congress is the Hilton St. Louis at the Ballpark, situated in the heart of downtown St. Louis. Located only 10 minutes from the Missouri Botanical Garden, 20 minutes from Lambert-St. Louis International Airport (STL), and within walking distance to two MetroLink stations, this central St. Louis hotel will serve as our congress hub.

Since 1859, St. Louis has been home to the Missouri Botanical Garden, considered among the city's gems. Today, the greater St. Louis metropolitan region boasts more than 2 million people, diverse neighborhoods, world-renowned cultural institutions, nationally ranked universities, thriving entertainment and shopping districts, and hundreds of parks and outdoor recreation areas.

Downtown Attractions

For those staying at the congress's official host hotel, the Hilton St. Louis at the Ballpark, these must-see attractions are located at your doorstep:

Gateway Arch

The vision of renowned architect Eero Saarinen and the nation's tallest monument at 630 feet, the Gateway Arch will celebrate its 50th anniversary in 2015. A visit to St. Louis isn't complete without standing at the base of the iconic, awe-inspiring Arch. At the time of the congress, work will still be underway to complete CityArchRiver 2015, a massive redevelopment project aimed at connecting downtown St. Louis with the monument and the Mississippi River, and infusing more accessible, thriving green space for visitors to enjoy. But the construction will in no way diminish the experience.

Citygarden

Located adjacent to the Hilton is Citygarden. This urban oasis is a vibrant and serene blending of lush landscaping and internationally renowned sculptures intermingled between elements of water, stone, architecture, and design. Open and accessible year-round, until 10 p.m. daily.

St. Louis Cardinals Baseball

Catch exciting Major League Baseball action and cheer for the St. Louis Cardinals, 11-time World Series Champions. Be advised: wear red!

Old Courthouse

Experience a significant part of history during a visit to the Old Courthouse, the site where an enslaved husband and wife, Dred and Harriet Scott, sued for their freedom and Virginia Minor sued for a woman's right to vote in 1872. Embrace history in restored courtrooms and view exhibits and murals depicting historic events.

The Mighty Mississippi River

Discover a new perspective of St. Louis on a riverboat cruise. Replica 19th-century paddle steamers ferry the Mississippi, inviting you to travel to the mouth of the Missouri River and pass through the epic Mississippi lock system, or enjoy a romantic dinner on a twilight cruise.

Other Local Attractions

City Museum

Housed in the former International Shoe building in Downtown's Loft District, this one-of-a-kind museum is hugely popular among both residents and tourists. Billing itself as an "eclectic mixture of children's playground, funhouse, surrealistic pavilion, and architectural marvel," the City Museum has been named one of the "great public spaces" by the Project for Public Spaces, and has won several local and international awards as a must-see destination. Fun for big kids, too!

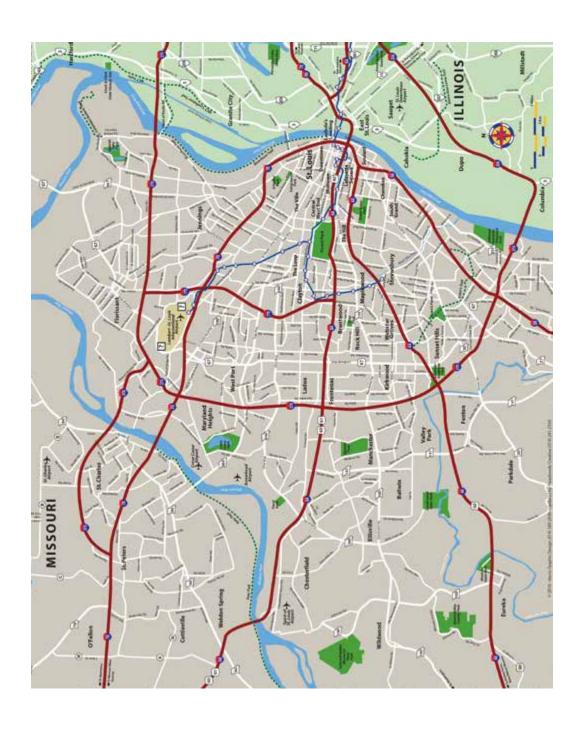
Anheuser-Busch Brewery

Visit this iconic and historic St. Louis brewery to experience the King of Beers first-hand. Complimentary tours are offered year-round, inviting you to peek inside the Brew House, sample a beer, meet the world famous Clydesdales, and stop by the recently opened Biergarten.

Forest Park

At more than 1,300 acres, Forest Park is one of the largest urban parks in the U.S. It contains some of the city's major cultural institutions, all of which are free to the public: the Saint Louis Art Museum, the Missouri History Museum, the Saint Louis Science Center and James S. McDonnell Planetarium, and the Saint Louis Zoo.

Additional Forest Park attractions include an amphitheater, an art deco greenhouse, and boat rentals. It also houses golf courses, tennis courts, ball fields, biking and walking trails, and an ice-skating rink. Natural areas include forest, prairie, savannah, and wetlands.



Transportation and Dining

Lambert–St. Louis International Airport is located approximately 10 miles from downtown St. Louis.

Lambert–St. Louis International Airport (STL) 10701 Lambert International Blvd. St. Louis, MO 63145-0212 www.flystl.com (314) 426-8000

Airport Transportation Options

MetroLink is the recommended method of transportation for congress attendees. The St. Louis MetroLink light rail system provides service from the Lambert–St. Louis International Airport to downtown St. Louis. Trains leave approximately every 20 minutes. The 8th and Pine Station is the closest to the Hilton, located approximately four blocks away. The MetroLink fare is \$5. For more information, visit www.metrostlouis.org.

Shuttle Service

Go Best Express Shuttle provides service to the Hilton from Lambert–St. Louis International Airport. Shared ride shuttles leave Lambert approximately every 15 to 30 minutes between 6 a.m. and 10 p.m. and begin servicing routes to the airport at 4 a.m. Shuttles outside these hours require reservations. Please check for availability. Shuttles to the airport require reservations: 1-877–STL–GOVAN (1-877–785–4682). Customer Service representatives are available 24 hours a day. For more information or to book online, visit www.gobestexpress.com.

Transportation Options Downtown

Public transportation: MetroLink light rail and/or MetroBus

Taxi service: visit Concierge Desk at hotel

Metro Downtown Trolley: Look for the #99 Downtown Trolley at bus stops around downtown, including one right outisde the Hillton St. Louis at the Ballpark hotel.

Discounted parking: Those who are staying at the congress's official host hotel, the Hilton St. Louis at the Ballpark, can use the self-park garage (\$10-\$18 per day) directly across from the hotel:

Stadium East Parking 200 S. Fourth Street St. Louis, MO 63102.

Dining

The host hotel, Hillton St. Louis at the Ballpark, is centrally located in downtown St. Louis, with a wide variety of dining options within walking distance or a short drive away. The hotel is home to Mike Shannon's unmatched surf and turf or the famous Three Sixty Rooftop Bar.

Other choices around the hotel include:

- Ballpark Village
- Imo's Pizzeria
- In Room Dining
- Market Street Bistro and Bar
- Starbucks
- Yo My Goodness
- Basso
- Charlie Gitto's
- The Restaurant at The Cheshire

Inspiration and Motivations

Inspiration and Motivations

Inspiration and Motivations

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Missouri Botanical Garden Planning Committee

President's Office: Dr. Peter Wyse Jackson and

Kathy Farris

Education Division: Sheila Voss, Jennifer Wolff, Jennifer Hartley, Lydia Toth, Jennifer Smith, and Meg Hoester

Horticulture Division: Andrew Wyatt

Science & Conservation: Peter Hoch, Quinn Long, and

Ashley Glenn

Sustainability Division: Deborah Frank, Jean Ponzi,

Katherine Golden, and Jim Biggs

Communications Division: Liz Fathman, Andrea Androuais, John Dedeke, Gene Peimann, Katie

O'Sullivan, and Deborah Springer

Human Resources: Jackie Juras, Teresa Clark, and

Lisa Williams

Institutional Advancement: Donna McGinnis and

Kate Brueggemann

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Congress Tours

Jennifer Schwarz Ballard and Chicago Botanic Garden Louise Bradshaw, Sharon Deem, Michael Dawson,

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Anne Grossmann, Peter VanLinn, Jean Turney, and

Forest Park Forever

Vickie Campbell, Jennifer Mullix, Chris Hartley, and the

Sophia M. Sachs Butterfly House

Sunny McElwain and Monsanto Company

Cahokia Mounds State Historic Site, National Great

Rivers Research and Education Center, the National

Great Rivers Museum, the Audubon Center at

Riverlands, Gateway Greening, Bell Demonstration and Community Garden, and City Seeds Urban Farm

Coordination of the

Communities in Nature Nocturne

Missouri History Museum staff

International Review Panel

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Kirsty Shaw

Liz Smith Paul Smith

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Xiangying Wen

Botanic garden educators from around the world who have enthusiastically facilitated the panel sessions.

Sponsorships

BGCI and the Missouri Botanical Garden would like to thank the congress sponsors and supporters:

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