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NYBG Science: A Year of Global Partnerships and Local Action

From Participating in Global Conferences to Conducting Field and Laboratory Research That Enriched Humanity’s Understanding of the Natural World, 2024 Was an Impactful Year for NYBG’s Plant Science Program



Left: At the COP16 biodiversity conference in Cali, Colombia, Jennifer Bernstein, CEO and The William C. Steere Sr. President of the New York Botanical Garden (NYBG), and Sergio Díaz-Granados, Executive President of the Development Bank of Latin America and the Caribbean, signed an agreement to collaborate on biodiversity projects. Right: A research project in NYBG’s Thain Family Forest is evaluating soil health to better understand how to manage urban forests in the Northeast.

Bronx, NY—Plant science research at the New York Botanical Garden (NYBG) had an impactful year around the world and at home in the Bronx in 2024. NYBG’s scientists and research staff expanded humanity’s understanding of the natural world through field and laboratory research, leveraged the Botanical Garden’s collections and served as a resource for plant information, and shared stories about how plants enrich lives through its new podcast *Plant People*.

NYBG contributed to global conservation efforts and frameworks to address the dual biodiversity and climate crises. From participating in global conferences—such as the 16th Conference of the Parties to the Convention on Biological Diversity (COP16) in Cali, Colombia, and the 20th International Botanical Congress in Madrid, Spain—to conducting

on-the-ground research around the world and here in the Bronx, NYBG Science looked to plants for the answers to tackle Earth’s environmental challenges.

NYBG Engaged with Partners Around the World to Protect and Restore Biodiversity

In 2024, NYBG Science had **81 active projects and collaborations in 79 countries on six continents, from Angola to Vietnam**. NYBG scientists traveled the world to conduct field research—collecting plant specimens, working with local scientists and organizations to conserve native flora, studying how Indigenous people use plants, and understanding the origin and distribution of global plant diversity.

Research in the field and in NYBG’s science facilities, such as the Laboratory for Integrative Biodiversity Research and the William and Lynda Steere Herbarium, resulted in **the discovery of 36 new plant species and 152 scientific publications**.

In July, Garden scientists traveled to Madrid, Spain, for the [International Botanical Congress](#), the world’s largest plant science conference, held every six years. NYBG researchers presented talks, symposia, and a workshop and joined their fellow scientists in a final session to approve the Madrid Declaration, which calls for action on 10 strategic steps by plant scientists, botanical institutions, governments, the corporate sector, and civil society. These actions are needed to lessen the degradation of plant life caused by human activities and include such measures as harnessing nature-based solutions, recognizing the central role of plants in ecosystem restoration and preservation, and supporting biocultural diversity as a way to bring together a range of knowledge systems, methodologies, and stakeholders.

In October, a delegation of NYBG leaders and scientists joined participants from more than 180 countries at [COP16 in Cali, Colombia](#). With the theme “Peace with Nature,” the conference focused on making progress toward the ambitious goals of the Kunming-Montreal Global Biodiversity Framework, such as conserving 30 percent of Earth’s land, oceans, and freshwater by 2030. The NYBG delegation brought together its own scientists and other leading experts to speak at two plant-focused events, participated in a field trip to the biodiverse state of Nariño, and signed a collaborative agreement with the Development Bank of Latin America and the Caribbean (CAF) to develop research on biodiversity and promote restoration strategies, CAF’s first collaboration with a botanical garden.

The New York Botanical Garden’s leadership and scientists also began working in partnership with Botanic Gardens Conservation International (BGCI), a network of botanical gardens in more than 100 countries, to establish a Climate Resilience Advisory Group through their joint project, *Nurturing Nature Through Plant-based Solutions for Long Term Climate Resilience*. **NYBG and BGCI will collaborate to build a multi-year and multi-**

phased action plan that centers plants as drivers of climate resilience and brings botanical gardens together to identify effective plant-based strategies to improve that resilience.

NYBG Science in Action in the Bronx

NYBG Science has a global reach, but it is also firmly rooted in the Garden's 250-acre grounds in the Bronx. The Steere Herbarium, the largest plant-research collection in the Western Hemisphere with nearly 8 million preserved plant specimens, continued to make more of its collection available online through the [C. V. Starr Virtual Herbarium](#), **adding more than 200,000 specimen images in 2024.**

The LuEsther T. Mertz Library also took great strides toward digitizing its collection, including NYBG's Institutional Archives, thanks to a \$1 million grant from the Leon Levy Foundation. The grant has allowed the Mertz Library to hire two archivists and a digital imaging technician to make these unique collections discoverable and accessible. In addition, the Mertz Library handled 3,000 reference inquiries last year, and its [Plant Information](#) digital resources received almost 1 million views.

Expanding its world-class plant-research staff to add a diverse range of expertise, **the Garden welcomed four new Assistant Curators in 2024:** Dr. Evelyn Beaury, Ph.D., an invasive plant and global change ecologist; Dr. Ana María Bedoya, Ph.D., a plant systematist and evolutionary biologist focusing on plants living in aquatic ecosystems; Dr. Aleca Borsuk, Ph.D., who brings mechanical engineering expertise to the study of plant structure and botanical diversity; and Dr. JianJun Jin, Ph.D., who has expertise in plant systematics, genomics, and computational biology.

Earlier this month, **a fifth Assistant Curator, Cecilia Zumajo, Ph.D., a specialist in evolutionary developmental biology and genomics, joined the science staff,** rounding out the ranks of new researchers.

Taking advantage of one of the Garden's most important features, [research in NYBG's Thain Family Forest](#), the largest remaining old-growth forest in New York City, is being spearheaded by Associate Curator Brad Oberle, Ph.D., and John Zeiger, Manager of the Thain Family Forest. The team is evaluating soil health by studying soil carbon inventory, heavy metal contamination, and hydrology. **The results will be used to understand current threats, historical trends, and the future direction for management of the 50-acre Thain Forest—and more broadly, urban forests in the Northeast.**

NYBG Science embraced the fast-moving world of artificial intelligence (AI) through a collaboration with [Break Through Tech](#), an initiative of Cornell Tech that fosters gender

equity in the tech industry by preparing women and nonbinary students from diverse backgrounds to pursue tech careers. Students were challenged to devise AI algorithms to sort a dataset of nearly 123,000 plant images, including digitized Steere Herbarium plant specimens. **The ultimate aim is to use AI to speed up the process of giving scientific names to millions of unidentified specimens in herbaria world-wide.** Those specimens undoubtedly include new species waiting to be discovered and other valuable biodiversity information crucial to global plant conservation efforts.

In October, NYBG once again participated in Climate Week NYC, presenting a conference that explored the theme of harnessing biodiversity to improve climate resilience. The daylong event featured NYBG experts and other distinguished scientists and environmental experts, including anthropologist, ethnobotanist, and author Wade Davis.

Finally, bridging the gap between science at the Garden and beyond, [*Plant People*](#), a new podcast from NYBG and public media organization PRX Productions, launched to great fanfare last year and saw 108,000 downloads. Hosted by Jennifer Bernstein, the Garden's CEO and The William C. Steere Sr. President, *Plant People* featured experts on topics ranging from mycology to wildfires during its first, 10-episode season. *Plant People*, which won a Signal Award as one of the best new podcasts of 2024, returns for its second season in spring 2025.

About The New York Botanical Garden

The New York Botanical Garden (NYBG) has been a connective hub among people, plants, and the shared planet since 1891. For more than 130 years, NYBG has been rooted in the cultural fabric of New York City, in the heart of the Bronx, its greenest borough. NYBG has invited millions of visitors to make the Garden a part of their lives, exploring the joy, beauty, and respite of nature. NYBG's 250 acres are home to renowned exhibitions, immersive botanical experiences, art and music, and events with some of the most influential figures in plant and fungal science, horticulture, and the humanities. NYBG is also a steward of globally significant research collections, from the LuEsther T. Mertz Library collection to the plant and fungal specimens in the William and Lynda Steere Herbarium, the largest such collection in the Western Hemisphere.

The plant people of NYBG—dedicated horticulturists, enthusiastic educators, and scientific adventurers—are committed to helping nature thrive so that humanity can thrive. They believe in their ability to make things better, teaching tens of thousands of kids and families each year about the importance of safeguarding the environment and healthy eating. Expert scientists work across the city, the nation, and the globe to document the plants and fungi of the world—and find actionable, nature-based solutions to the planet's dual climate and biodiversity crises. With eyes always looking forward, they train the next generation of

botanists, gardeners, landscape designers, and environmental stewards, ensuring a green future for all. At NYBG, it's nature—or nowhere.

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The New York Botanical Garden is located at 2900 Southern Boulevard, Bronx, New York 10458. For more information, visit nybg.org

The New York Botanical Garden is located on property owned in full by the City of New York, and its operation is made possible in part by public funds provided through the New York City Department of Cultural Affairs. A portion of the Garden's general operating funds is provided by The New York City Council and The New York State Office of Parks, Recreation, and Historic Preservation. The Bronx Borough President and Bronx elected representatives in the City Council and State Legislature provide leadership funding.

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